

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of February 2017**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Coming Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co,	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

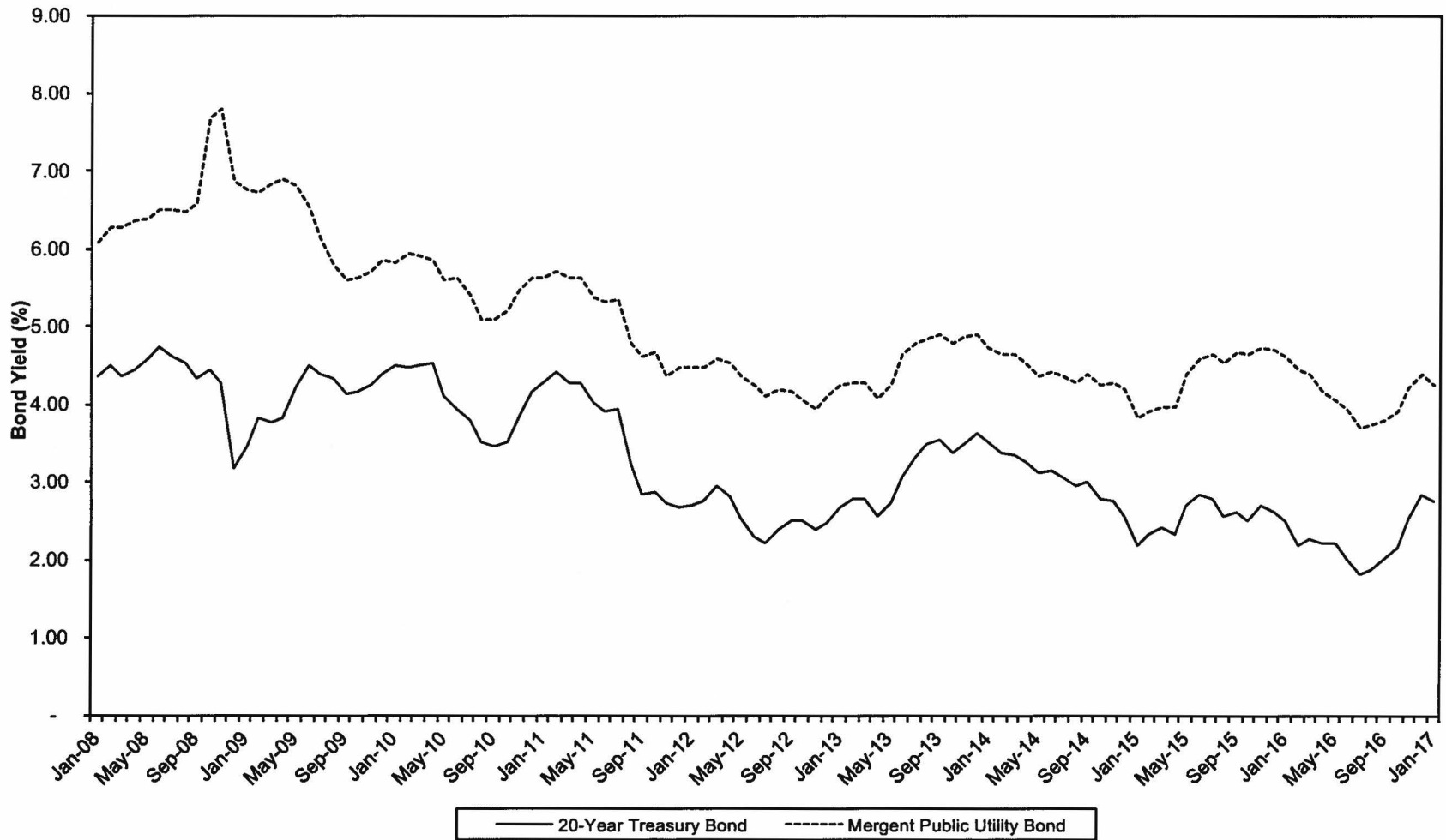
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08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

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2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital

### HISTORICAL BOND YIELDS AVERAGE PUBLIC UTILITY BOND VS 20-YEAR TREASURY BOND



PPL CORPORATION

Poised for growth.  
Investing in our future.



Evercore ISI Utility CEO Retreat, Palm Beach, FL • January 12 - 13, 2017

# Summary

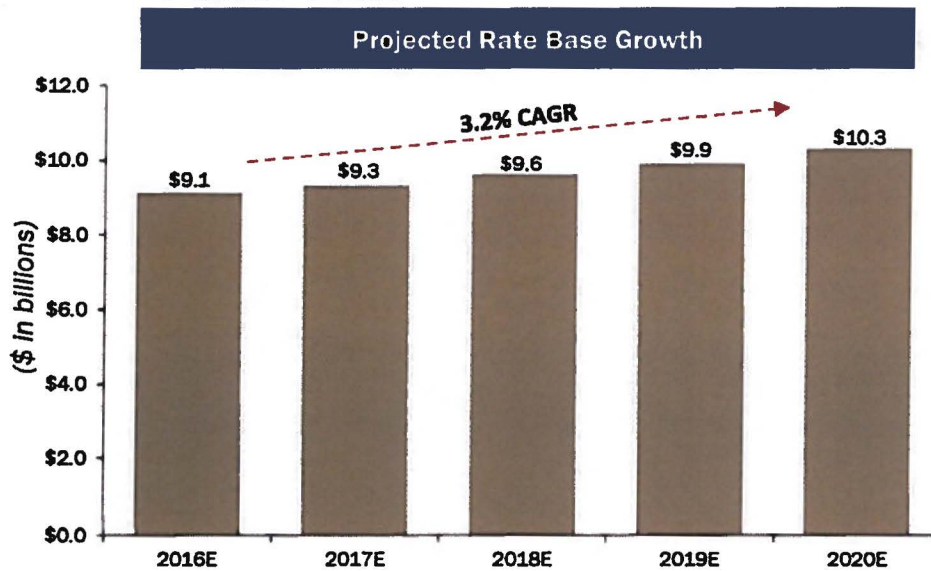
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- Growing, pure-play regulated business operating in premium jurisdictions
- 5-6% projected earnings growth from 2017 - 2020, with above-average dividend yield
- Strong dividend growth potential
- Targeting 8 - 10% total annual returns<sup>(1)</sup>
- Investing in the future and improving efficiency
- Confident in our ability to deliver on commitments to shareowners and customers

(1) Total annual return is the combination of annual EPS growth and dividend yield.

# Kentucky Regulated

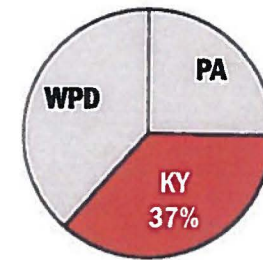
- Constructive jurisdiction provides a timely return on planned Cap Ex
  - Environmental Cost Recovery (ECR): \$1.5 billion estimated spend on projects approved, or subject to KPSC approval; \$0.8 billion with 10.0% ROE and \$0.7 billion with 9.8% ROE – virtually no regulatory lag
  - Other supportive recovery mechanisms
    - Return mechanisms include CWIP for ECR and Gas Line Tracker
    - Pass through clauses include Purchased Power, Fuel and Gas Supply Adjustment and Energy Efficiency/Demand Side Management recovery
- Cap Ex plans exclude spending that may be required under the Clean Power Plan



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2017E KY Regulated Rate Base



Total: \$25.0 billion



**PROXY GROUP**  
**AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Jan-17	Dec-16	Nov-16	Oct-16	Sep-16	Aug-16
<b>Alliant Energy</b>	High Price (\$)	38.290	38.340	38.670	38.330	40.600	40.580
	Low Price (\$)	36.560	35.260	34.880	36.310	37.090	37.690
	Avg. Price (\$)	37.425	36.800	36.775	37.320	38.845	39.135
	Dividend (\$)	0.315	0.294	0.294	0.294	0.294	0.294
	Mo. Avg. Div.	3.37%	3.20%	3.20%	3.15%	3.03%	3.00%
	6 mos. Avg.	3.16%					
<b>Ameren Corp.</b>	High Price (\$)	53.400	52.880	51.460	50.250	51.910	52.590
	Low Price (\$)	51.350	48.320	46.970	46.840	47.790	49.150
	Avg. Price (\$)	52.375	50.600	49.215	48.545	49.850	50.870
	Dividend (\$)	0.440	0.440	0.425	0.425	0.425	0.425
	Mo. Avg. Div.	3.36%	3.48%	3.45%	3.50%	3.41%	3.34%
	6 mos. Avg.	3.42%					
<b>Avista Corp.</b>	High Price (\$)	40.170	43.000	42.260	41.740	43.740	43.710
	Low Price (\$)	37.880	38.690	39.210	38.990	40.380	40.300
	Avg. Price (\$)	39.025	40.845	40.735	40.365	42.060	42.005
	Dividend (\$)	0.343	0.343	0.343	0.343	0.343	0.343
	Mo. Avg. Div.	3.52%	3.36%	3.37%	3.40%	3.26%	3.27%
	6 mos. Avg.	3.36%					
<b>Black Hills Corp.</b>	High Price (\$)	62.700	62.830	61.900	62.070	63.790	63.870
	Low Price (\$)	60.020	57.580	54.760	56.530	57.510	56.860
	Avg. Price (\$)	61.360	60.205	58.330	59.300	60.650	60.365
	Dividend (\$)	0.420	0.420	0.420	0.420	0.420	0.420
	Mo. Avg. Div.	2.74%	2.79%	2.88%	2.83%	2.77%	2.78%
	6 mos. Avg.	2.80%					
<b>CenterPoint Energy</b>	High Price (\$)	26.230	24.980	24.420	23.180	24.430	24.010
	Low Price (\$)	24.450	23.570	21.910	21.830	22.270	21.970
	Avg. Price (\$)	25.340	24.275	23.165	22.505	23.350	22.990
	Dividend (\$)	0.258	0.258	0.258	0.258	0.258	0.258
	Mo. Avg. Div.	4.07%	4.25%	4.45%	4.59%	4.42%	4.49%
	6 mos. Avg.	4.38%					
<b>CMS Energy Corp.</b>	High Price (\$)	42.610	42.000	42.270	42.550	44.440	45.370
	Low Price (\$)	41.120	39.420	38.780	40.010	41.140	41.490
	Avg. Price (\$)	41.865	40.710	40.525	41.280	42.790	43.430
	Dividend (\$)	0.310	0.310	0.310	0.310	0.310	0.310
	Mo. Avg. Div.	2.96%	3.05%	3.06%	3.00%	2.90%	2.86%
	6 mos. Avg.	2.97%					



**PROXY GROUP**  
**AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Jan-17	Dec-16	Nov-16	Oct-16	Sep-16	Aug-16
<b>Consolidated Edison</b>	High Price (\$)	74.830	74.300	75.620	76.030	79.540	80.610
	Low Price (\$)	72.130	68.850	68.760	71.350	72.930	74.090
	Avg. Price (\$)	73.480	71.575	72.190	73.690	76.235	77.350
	Dividend (\$)	0.670	0.670	0.670	0.670	0.670	0.670
	Mo. Avg. Div.	3.65%	3.74%	3.71%	3.64%	3.52%	3.46%
	6 mos. Avg.	3.62%					
<b>DTE Energy Co.</b>	High Price (\$)	99.490	99.920	96.780	96.540	97.600	98.440
	Low Price (\$)	96.580	92.190	89.660	90.750	90.610	92.240
	Avg. Price (\$)	98.035	96.055	93.220	93.645	94.105	95.340
	Dividend (\$)	0.825	0.825	0.770	0.770	0.770	0.730
	Mo. Avg. Div.	3.37%	3.44%	3.30%	3.29%	3.27%	3.06%
	6 mos. Avg.	3.29%					
<b>Eversource Energy</b>	High Price (\$)	55.900	55.740	55.330	55.470	56.840	59.280
	Low Price (\$)	54.080	50.560	50.990	51.880	53.040	53.580
	Avg. Price (\$)	54.990	53.150	53.160	53.675	54.940	56.430
	Dividend (\$)	0.445	0.445	0.445	0.445	0.445	0.445
	Mo. Avg. Div.	3.24%	3.35%	3.35%	3.32%	3.24%	3.15%
	6 mos. Avg.	3.27%					
<b>Exelon Corp.</b>	High Price (\$)	36.210	36.360	34.060	34.130	35.270	37.700
	Low Price (\$)	34.800	31.770	29.820	31.680	32.860	33.610
	Avg. Price (\$)	35.505	34.065	31.940	32.905	34.065	35.655
	Dividend (\$)	0.318	0.318	0.318	0.318	0.318	0.318
	Mo. Avg. Div.	3.58%	3.73%	3.98%	3.87%	3.73%	3.57%
	6 mos. Avg.	3.74%					
<b>Northwestern Corp.</b>	High Price (\$)	57.880	58.080	59.130	57.760	60.710	61.320
	Low Price (\$)	55.990	54.070	54.780	53.850	56.180	57.090
	Avg. Price (\$)	56.935	56.075	56.955	55.805	58.445	59.205
	Dividend (\$)	0.500	0.500	0.500	0.500	0.500	0.500
	Mo. Avg. Div.	3.51%	3.57%	3.51%	3.58%	3.42%	3.38%
	6 mos. Avg.	3.50%					
<b>PG&amp;E Corp.</b>	High Price (\$)	61.910	61.540	62.230	62.690	64.400	65.390
	Low Price (\$)	59.890	57.600	57.630	58.200	60.440	61.480
	Avg. Price (\$)	60.900	59.570	59.930	60.445	62.420	63.435
	Dividend (\$)	0.490	0.490	0.490	0.490	0.490	0.490
	Mo. Avg. Div.	3.22%	3.29%	3.27%	3.24%	3.14%	3.09%
	6 mos. Avg.	3.21%					

**PROXY GROUP**  
**AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Jan-17	Dec-16	Nov-16	Oct-16	Sep-16	Aug-16
<b>Public Svc. Enterprise Gp.</b>	High Price (\$)	44.700	44.290	43.110	42.250	44.010	46.100
	Low Price (\$)	42.860	40.720	39.280	40.380	41.070	42.250
	Avg. Price (\$)	43.780	42.505	41.195	41.315	42.540	44.175
	Dividend (\$)	0.410	0.410	0.410	0.410	0.410	0.410
	Mo. Avg. Div.	3.75%	3.86%	3.98%	3.97%	3.86%	3.71%
	6 mos. Avg.	3.85%					
<b>SCANA Corp.</b>	High Price (\$)	74.060	74.990	73.520	73.830	75.920	75.800
	Low Price (\$)	67.710	69.710	67.310	67.910	69.040	69.830
	Avg. Price (\$)	70.885	72.350	70.415	70.870	72.480	72.815
	Dividend (\$)	0.575	0.575	0.575	0.575	0.575	0.575
	Mo. Avg. Div.	3.24%	3.18%	3.27%	3.25%	3.17%	3.16%
	6 mos. Avg.	3.21%					
<b>Sempra Energy</b>	High Price (\$)	104.250	104.700	107.100	109.420	111.400	111.960
	Low Price (\$)	99.710	98.120	92.950	101.700	102.150	103.620
	Avg. Price (\$)	101.980	101.410	100.025	105.560	106.775	107.790
	Dividend (\$)	0.755	0.755	0.755	0.755	0.755	0.755
	Mo. Avg. Div.	2.96%	2.98%	3.02%	2.86%	2.83%	2.80%
	6 mos. Avg.	2.91%					
<b>Southern Company</b>	High Price (\$)	49.850	49.640	51.680	52.230	53.730	53.800
	Low Price (\$)	48.190	46.200	46.790	49.140	50.770	50.000
	Avg. Price (\$)	49.020	47.920	49.235	50.685	52.250	51.900
	Dividend (\$)	0.560	0.560	0.560	0.560	0.560	0.560
	Mo. Avg. Div.	4.57%	4.67%	4.55%	4.42%	4.29%	4.32%
	6 mos. Avg.	4.47%					
<b>Vectren Corp.</b>	High Price (\$)	55.200	53.050	51.880	50.340	52.040	52.470
	Low Price (\$)	51.500	48.410	46.520	47.000	47.870	48.560
	Avg. Price (\$)	53.350	50.730	49.200	48.670	49.955	50.515
	Dividend (\$)	0.420	0.420	0.420	0.400	0.400	0.400
	Mo. Avg. Div.	3.15%	3.31%	3.41%	3.29%	3.20%	3.17%
	6 mos. Avg.	3.26%					
<b>WEC Energy</b>	High Price (\$)	59.630	59.120	59.740	60.130	63.350	65.240
	Low Price (\$)	57.630	54.960	53.660	56.460	59.030	59.320
	Avg. Price (\$)	58.630	57.040	56.700	58.295	61.190	62.280
	Dividend (\$)	0.495	0.495	0.495	0.495	0.495	0.495
	Mo. Avg. Div.	3.38%	3.47%	3.49%	3.40%	3.24%	3.18%
	6 mos. Avg.	3.36%					

**PROXY GROUP  
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Jan-17	Dec-16	Nov-16	Oct-16	Sep-16	Aug-16
<b>Xcel Energy</b>	High Price (\$)	41.430	41.200	41.750	41.800	43.490	44.130
	Low Price (\$)	40.040	38.220	38.000	39.080	40.340	41.070
	Avg. Price (\$)	40.735	39.710	39.875	40.440	41.915	42.600
	Dividend (\$)	0.340	0.340	0.340	0.340	0.340	0.340
	Mo. Avg. Div.	3.34%	3.42%	3.41%	3.36%	3.24%	3.19%
	6 mos. Avg.	3.33%					
	<b>Monthly Avg. Dividend Yield</b>	3.42%	3.48%	3.51%	3.47%	3.37%	3.32%
	<b>6-month Avg. Dividend Yield</b>	3.43%					

Source: Yahoo! Finance

**PROXY GROUP**  
**DCF Growth Rate Analysis**

<u>Company</u>	(1) Value Line <u>DPS</u>	(2) Value Line <u>EPS</u>	(3) Value Line <u>B x R</u>	(4) <u>Zacks</u>	(5) First Call/ <u>IBES</u>
Alliant Energy Corporation	4.50%	6.00%	5.50%	5.50%	6.00%
Ameren Corp.	4.00%	6.00%	3.50%	6.50%	5.85%
Avista Corporation	3.00%	3.00%	2.50%	N/A	5.65%
Black Hills Corp.	6.00%	7.50%	5.00%	6.20%	7.56%
CenterPoint Energy, Inc.	4.50%	2.00%	2.50%	5.00%	6.63%
CMS Energy Corp.	6.50%	6.00%	5.50%	6.00%	7.60%
Consolidated Edison	3.00%	3.00%	3.00%	3.10%	2.02%
DTE Energy Co.	6.50%	6.00%	3.50%	6.00%	5.05%
Eversource Energy	5.50%	7.00%	4.50%	6.30%	5.77%
Exelon Corp.	4.00%	5.00%	4.50%	4.40%	1.47%
NorthWestern Corp.	5.50%	6.50%	4.00%	5.00%	4.34%
PG&E Corp.	7.00%	11.00%	4.00%	4.40%	5.40%
Public Service Enterprise Group	5.00%	2.50%	4.50%	2.40%	1.17%
SCANA Corp.	4.50%	4.50%	4.50%	5.70%	5.70%
Sempra Energy	7.00%	8.00%	6.00%	7.40%	6.17%
Southern Company	3.50%	4.50%	3.50%	4.10%	3.14%
Vectren Corp.	5.00%	9.00%	5.50%	5.30%	4.57%
WEC Energy	7.00%	6.00%	3.50%	6.00%	6.73%
Xcel Energy Inc.	<u>6.00%</u>	<u>5.50%</u>	<u>4.00%</u>	<u>5.40%</u>	<u>5.69%</u>
Averages	5.16%	5.74%	4.18%	5.26%	5.08%
Median Values	5.00%	6.00%	4.00%	5.45%	5.69%

**Sources:** Value Line Investment Survey, Dec. 16, 2016; Jan. 27 and Feb. 17, 2017  
Yahoo! Finance for IBES growth rates retrieved February 14, 2017  
Zacks growth rates retrieved February 14, 2017

**PROXY GROUP  
DCF RETURN ON EQUITY**

	(1) Value Line <u>Dividend Gr.</u>	(2) Value Line <u>Earnings Gr.</u>	(3) Zack's <u>Earning Gr.</u>	(4) IBES <u>Earning Gr.</u>	(5) Average of <u>All Gr. Rates</u>
<b><u>Method 1:</u></b>					
Dividend Yield	3.43%	3.43%	3.43%	3.43%	3.43%
Average Growth Rate	5.16%	5.74%	5.26%	5.08%	5.31%
Expected Div. Yield	<u>3.52%</u>	<u>3.53%</u>	<u>3.52%</u>	<u>3.51%</u>	<u>3.52%</u>
<b><i>DCF Return on Equity</i></b>	<b>8.68%</b>	<b>9.27%</b>	<b>8.78%</b>	<b>8.59%</b>	<b>8.83%</b>
<b><u>Method 2:</u></b>					
Dividend Yield	3.43%	3.43%	3.43%	3.43%	3.43%
Median Growth Rate	5.00%	6.00%	5.45%	5.69%	5.54%
Expected Div. Yield	<u>3.51%</u>	<u>3.53%</u>	<u>3.52%</u>	<u>3.52%</u>	<u>3.52%</u>
<b><i>DCF Return on Equity</i></b>	<b>8.51%</b>	<b>9.53%</b>	<b>8.97%</b>	<b>9.21%</b>	<b>9.06%</b>

**PROXY GROUP**  
**Capital Asset Pricing Model Analysis**

**20-Year Treasury Bond, Value Line Beta**

<u>Line No.</u>		<u>Value Line</u>
1	Market Required Return Estimate	9.67%
2	Risk-free Rate of Return, 20-Year Treasury Bond	
3	Average of Last Six Months	2.75%
4	Risk Premium	
5	(Line 1 minus Line 3)	6.92%
6	Comparison Group Beta	0.69
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	4.76%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	7.51%

**5-Year Treasury Bond, Value Line Beta**

1	Market Required Return Estimate	9.67%
2	Risk-free Rate of Return, 5-Year Treasury Bond	
3	Average of Last Six Months	1.92%
4	Risk Premium	
5	(Line 1 minus Line 3)	7.75%
6	Comparison Group Beta	0.69
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	5.33%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	7.25%

**PROXY GROUP**  
**Capital Asset Pricing Model Analysis**

**Supporting Data for CAPM Analyses**

20 Year Treasury Bond Data

	<u>Avg. Yield</u>
August-16	1.89%
September-16	2.02%
October-16	2.17%
November-16	2.54%
December-16	2.84%
January-17	<u>2.75%</u>
6 month average	2.37%

Source: [www.federalreserve.gov/datadownload/Choose.aspx?rel=H15](http://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15)

5 Year Treasury Bond Data

	<u>Avg. Yield</u>
August-16	1.13%
September-16	1.18%
October-16	1.27%
November-16	1.60%
December-16	1.96%
January-17	<u>1.92%</u>
6 month average	1.51%

Value Line Market Return Data:

Forecasted Data:

Value Line Median Growth Rates:	
Earnings	11.00%
Book Value	<u>7.00%</u>
Average	9.00%
Average Dividend Yield	<u>0.81%</u>
Estimated Market Return	9.85%

Value Line Projected 3-5 Yr.  
 Median Annual Total Return 9.50%

Average of Projected Mkt.  
 Returns 9.67%

Source: Value Line Investment Survey  
 for Windows retrieved Feb. 14, 2017

Comparison Group Betas:

	<u>Value Line</u>
Alliant Energy Corporation	0.70
Ameren Corp.	0.65
Avista Corporation	0.70
Black Hills Corp.	0.90
CenterPoint Energy, Inc.	0.85
CMS Energy Corp.	0.65
Consolidated Edison	0.55
DTE Energy Co.	0.65
Eversource Energy	0.70
Exelon Corp.	0.70
NorthWestern Corp.	0.70
PG&E Corp.	0.65
Public Service Enterprise Group	0.70
SCANA Corp.	0.65
Sempra Energy	0.80
Southern Company	0.55
Vectren Corp.	0.75
WEC Energy	0.60
Xcel Energy Inc.	0.60
Average	0.69

Source: Value Line Investment Survey

**PROXY GROUP**  
**Capital Asset Pricing Model Analysis**  
**Historic Market Premium**

	<u>Geometric Mean</u>	<u>Arithmetic Mean</u>	<u>Adjusted Arithmetic Mean</u>
Long-Term Annual Return on Stocks	10.00%	12.00%	
Long-Term Annual Income Return on Long-Term Treas. Bonds	<u>5.00%</u>	<u>5.00%</u>	
Historical Market Risk Premium	5.00%	7.00%	6.03%
Comparison Group Beta, Value Line	<u>0.69</u>	<u>0.69</u>	<u>0.69</u>
Beta * Market Premium	3.43%	4.81%	4.14%
Current 20-Year Treasury Bond Yield	<u>2.37%</u>	<u>2.37%</u>	<u>2.37%</u>
<b>CAPM Cost of Equity, Value Line Beta</b>	<u><b>5.80%</b></u>	<u><b>7.18%</b></u>	<u><b>6.51%</b></u>

Source: 2016 SBI Yearbook, Stocks, Bonds, Bills, and Inflation, Duff and Phelps; pp. 2-6, 6-17, 10-30



**COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**ELECTRONIC APPLICATION OF KENTUCKY )  
POWER COMPANY FOR (1) A GENERAL )  
ADJUSTMENT OF ITS RATES FOR ELECTRIC )  
SERVICE; (2) AN ORDER APPROVING ITS 2017 )  
ENVIRONMENTAL COMPLIANCE PLAN; )  
(3) AN ORDER APPROVING ITS TARIFFS )  
AND RIDERS; (4) AN ORDER APPROVING )  
ACCOUNTING PRACTICES TO ESTABLISH )  
REGULATORY ASSETS AND LIABILITIES; AND )  
(5) AN ORDER GRANTING ALL OTHER )  
REQUIRED APPROVALS AND RELIEF )**

**CASE NO. 2017-00179**

**DIRECT TESTIMONY**

**AND EXHIBITS**

**OF**

**RICHARD A. BAUDINO**

**ON BEHALF OF**

**KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.**

**J. KENNEDY AND ASSOCIATES, INC.  
ROSWELL, GEORGIA**

**OCTOBER 3, 2017**

**COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**ELECTRONIC APPLICATION OF KENTUCKY )  
POWER COMPANY FOR (1) A GENERAL )  
ADJUSTMENT OF ITS RATES FOR ELECTRIC )  
SERVICE; (2) AN ORDER APPROVING ITS 2017 )  
ENVIRONMENTAL COMPLIANCE PLAN; )  
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REGULATORY ASSETS AND LIABILITIES; AND )  
(5) AN ORDER GRANTING ALL OTHER )  
REQUIRED APPROVALS AND RELIEF )**

**CASE NO. 2017-00179**

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**COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

<b>ELECTRONIC APPLICATION OF KENTUCKY</b>	)	
<b>POWER COMPANY FOR (1) A GENERAL</b>	)	
<b>ADJUSTMENT OF ITS RATES FOR ELECTRIC</b>	)	
<b>SERVICE; (2) AN ORDER APPROVING ITS 2017</b>	)	
<b>ENVIRONMENTAL COMPLIANCE PLAN;</b>	)	<b>CASE NO. 2017-00179</b>
<b>(3) AN ORDER APPROVING ITS TARIFFS</b>	)	
<b>AND RIDERS; (4) AN ORDER APPROVING</b>	)	
<b>ACCOUNTING PRACTICES TO ESTABLISH</b>	)	
<b>REGULATORY ASSETS AND LIABILITIES; AND</b>	)	
<b>(5) AN ORDER GRANTING ALL OTHER</b>	)	
<b>REQUIRED APPROVALS AND RELIEF</b>	)	

**DIRECT TESTIMONY OF RICHARD A. BAUDINO**

**I. QUALIFICATIONS AND SUMMARY**

1 **Q. Please state your name and business address.**

2 A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates,  
3 Inc. ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell,  
4 Georgia 30075.

5 **Q. What is your occupation and by whom are you employed?**

6 A. I am a consultant with Kennedy and Associates.

7 **Q. Please describe your education and professional experience.**

8 A. I received my Master of Arts degree with a major in Economics and a minor in  
9 Statistics from New Mexico State University in 1982. I also received my Bachelor  
10 of Arts Degree with majors in Economics and English from New Mexico State in  
11 1979.

12

1 I began my professional career with the New Mexico Public Service Commission  
2 Staff in October 1982 and was employed there as a Utility Economist. During my  
3 employment with the Staff, my responsibilities included the analysis of a broad range  
4 of issues in the ratemaking field. Areas in which I testified included cost of service,  
5 rate of return, rate design, revenue requirements, analysis of sale/leasebacks of  
6 generating plants, utility finance issues, and generating plant phase-ins.

7

8 In October 1989, I joined the utility consulting firm of Kennedy and Associates as a  
9 Senior Consultant where my duties and responsibilities covered substantially the  
10 same areas as those during my tenure with the New Mexico Public Service  
11 Commission Staff. I became Manager in July 1992 and was named Director of  
12 Consulting in January 1995. Currently, I am a consultant with Kennedy and  
13 Associates.

14

15 Exhibit No. \_\_\_(RAB-1) summarizes my expert testimony experience.

16 **Q. On whose behalf are you testifying?**

17 A. I am testifying on behalf of the Kentucky Industrial Utility Customers, Inc.  
18 ("KIUC").

19 **Q. What is the purpose of your Direct Testimony?**

20 A. The purpose of my Direct Testimony is to address the allowed return on equity for  
21 regulated electric operations for Kentucky Power Company ("KPC", or "Company").  
22 I will also respond to the Direct Testimony of Mr. Adrien McKenzie, witness for  
23 KPC.

1 **Q. Please summarize your conclusions and recommendations.**

2 A. Based on current financial market conditions, I recommend that the Kentucky Public  
3 Service Commission ("KPSC" or "Commission") adopt an 8.85% return on equity  
4 for Kentucky Power Company in this proceeding. My recommendation is based on  
5 the results of a Discounted Cash Flow ("DCF") model analysis. My DCF analysis  
6 incorporates my standard approach to estimating the investor required return on  
7 equity and includes a group of 15 comparison companies and dividend and earnings  
8 growth forecasts from the Value Line Investment Survey, IBES, and Zacks.

9

10 I also included two Capital Asset Pricing Model ("CAPM") analyses for additional  
11 information. I did not incorporate the results of the CAPM in my recommendation,  
12 however the results from the CAPM support my 8.85% ROE recommendation for  
13 KPC. In fact, my CAPM results are somewhat lower than my DCF results.

14

15 In Section IV, I respond to the testimony and ROE recommendation of the  
16 Company's witness Mr. McKenzie. I will demonstrate that his recommended ROE  
17 of 10.31% significantly overstates the current investor required return for KPC.  
18 Today's financial environment of low interest rates has been deliberately and  
19 methodically supported by Federal Reserve policy actions since 2009. Although the  
20 Federal Reserve began to raise short-term interest rates in 2016, both short-term and  
21 long-term interest rates are still low. A 10.31% ROE is inconsistent with investor  
22 required returns for low-risk utilities like KPC.

23

1 A 10.31% ROE would inflate the Company's revenue requirement and contribute to  
2 a burdensome rate increase for Kentucky ratepayers. This is due to the fact that KPC  
3 must collect income taxes on the equity portion of its weighted cost of capital. My  
4 recommended 8.85% ROE equates to a 14.54% return when income taxes are  
5 applied. This is also referred to as the pre-tax return on equity. Mr. McKenzie's  
6 recommended 10.31% ROE equates to a 16.94% pre-tax return on equity. The  
7 difference between my recommendation and Mr. McKenzie's results in an increased  
8 base rate revenue requirement of \$11.838 million per year, according to calculations  
9 made by KIUC witness Mr. Kollen. I strongly recommend that the KPSC reject the  
10 Company's requested 10.31% ROE in this proceeding and approve my  
11 recommended 8.85% ROE.

12

1                   **II. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS**

2   **Q.   Mr. Baudino, what has the trend been in long-term capital costs over the last**  
3   **few years?**

4   A.   Long-term capital costs as measured by the general level of interest rates in the  
5       economy have declined over the last few years, though they have increased since the  
6       November 2016 election. Exhibit No. \_\_\_(RAB-2) presents a graphic depiction of  
7       the trend in interest rates from January 2008 through August 2017. The interest rates  
8       shown in this exhibit are for the 20-year U.S. Treasury Bond and the average public  
9       utility bond from the Mergent Bond Record. In January 2008, the average public  
10      utility bond yield was 6.08% and the 20-year Treasury Bond yield was 4.35%. As of  
11      August 2017, the average public utility bond yield was 3.92%, representing a decline  
12      of 216 basis points, or 2.16%, from January 2008. Likewise, the 20-year Treasury  
13      bond stood at 2.55% in August 2017, a decline of 1.80% (181 basis points) from  
14      January 2008.

15   **Q.   Was there a significant change in Federal Reserve policy during the historical**  
16   **period shown in DPS-RAB-2 that affected the general level of interest rates?**

17   A.   Yes. In response to the 2007 financial crisis and severe recession that followed in  
18      December 2007, the Federal Reserve ("Fed") undertook a series of steps to stabilize  
19      the economy, ease credit conditions, and lower unemployment and interest rates.  
20      These steps are commonly known as Quantitative Easing ("QE") and were  
21      implemented in three distinct stages: QE1, QE2, and QE3. The Fed's stated purpose

1 of QE was "to support the liquidity of financial institutions and foster improved  
2 conditions in financial markets."<sup>1</sup>

3  
4 QE1 was implemented from November 2008 through approximately March 2010.  
5 During this time, the Fed cut its key Federal Funds Rate to nearly 0% and purchased  
6 \$1.25 trillion of mortgage-backed securities and \$175 billion of agency debt  
7 purchases.

8  
9 QE2 was implemented in November 2010 with the Fed announcing that it would  
10 purchase an additional \$600 billion of Treasury securities by the second quarter of  
11 2011.<sup>2</sup>

12  
13 Beginning in September 2011, the Fed initiated a "maturity extension program" in  
14 which it sold or redeemed \$667 billion of shorter-term Treasury securities and used  
15 the proceeds to buy longer-term Treasury securities. This program, also known as  
16 "Operation Twist," was designed by the Fed to lower long-term interest rates and  
17 support the economic recovery.

18  
19 QE3 began in September 2012 with the Fed announcing an additional bond  
20 purchasing program of \$40 billion per month of agency mortgage backed securities.

---

<sup>1</sup> ([http://www.federalreserve.gov/monetarypolicy/bst\\_crisisresponse.htm](http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm) ).

<sup>2</sup> (<http://www.federalreserve.gov/newsevents/press/monetary/20101103a.htm>)



1 The Fed began to pare back its purchases of securities in the last few years. On  
2 January 29, 2014 the Fed stated that beginning in February 2014 it would reduce its  
3 purchases of long-term Treasury securities to \$35 billion per month. The Fed  
4 continued to reduce these purchases throughout the year and in a press release issued  
5 October 29, 2014 announced that it decided to close this asset purchase program in  
6 October.<sup>3</sup>

7 **Q. Has the Fed recently indicated any important changes to its monetary policy?**

8 A. Yes. In March 2016, the Fed began to raise its target range for the federal funds rate,  
9 increasing it to 1/4% to 1/2% from 0% to 1/4%. The Fed further increased the  
10 target range to 1/2% to 3/4% in a press release dated December 14, 2016. On June  
11 14, 2017, the Fed announced a further increase to 1% - 1 1/4%. On September 20,  
12 2017 the Fed decided to maintain the federal funds rate at current levels. In its press  
13 release on that date, the Fed noted the following:

14 “Consistent with its statutory mandate, the Committee seeks to foster maximum  
15 employment and price stability. Hurricanes Harvey, Irma, and Maria have devastated  
16 many communities, inflicting severe hardship. Storm-related disruptions and  
17 rebuilding will affect economic activity in the near term, but past experience  
18 suggests that the storms are unlikely to materially alter the course of the national  
19 economy over the medium term. Consequently, the Committee continues to expect  
20 that, with gradual adjustments in the stance of monetary policy, economic activity  
21 will expand at a moderate pace, and labor market conditions will strengthen  
22 somewhat further. Higher prices for gasoline and some other items in the aftermath  
23 of the hurricanes will likely boost inflation temporarily; apart from that effect,  
24 inflation on a 12-month basis is expected to remain somewhat below 2 percent in the  
25 near term but to stabilize around the Committee's 2 percent objective over the  
26 medium term. Near-term risks to the economic outlook appear roughly balanced, but  
27 the Committee is monitoring inflation developments closely.  
28

---

<sup>3</sup> (<http://www.federalreserve.gov/newsevents/press/monetary/20141029a.htm>)

1 In view of realized and expected labor market conditions and inflation, the  
2 Committee decided to maintain the target range for the federal funds rate at 1 to 1-  
3 1/4 percent. The stance of monetary policy remains accommodative, thereby  
4 supporting some further strengthening in labor market conditions and a sustained  
5 return to 2 percent inflation.  
6

7 In determining the timing and size of future adjustments to the target range for the  
8 federal funds rate, the Committee will assess realized and expected economic  
9 conditions relative to its objectives of maximum employment and 2 percent inflation.  
10 This assessment will take into account a wide range of information, including  
11 measures of labor market conditions, indicators of inflation pressures and inflation  
12 expectations, and readings on financial and international developments. The  
13 Committee will carefully monitor actual and expected inflation developments  
14 relative to its symmetric inflation goal. *The Committee expects that economic*  
15 *conditions will evolve in a manner that will warrant gradual increases in the federal*  
16 *funds rate; the federal funds rate is likely to remain, for some time, below levels that*  
17 *are expected to prevail in the longer run. However, the actual path of the federal*  
18 *funds rate will depend on the economic outlook as informed by incoming data.*<sup>4</sup>  
19 (italics added)

20 **Q. Mr. Baudino, why is it important to understand the Fed's actions since 2008?**

21 A. The Fed's monetary policy actions since 2008 were deliberately undertaken to lower  
22 interest rates and support economic recovery. The Fed's actions have been  
23 successful in lowering interest rates given that the 20-year Treasury Bond yield in  
24 June 2007 was 5.29% and the public utility bond yield was 6.34%. The U.S.  
25 economy is currently in a low interest rate environment. As I will demonstrate later  
26 in my testimony, low interest rates have also significantly lowered investors' required  
27 return on equity for the stocks of regulated utilities.

28 **Q. Are current interest rates indicative of investor expectations regarding the**  
29 **future direction of interest rates?**

---

<sup>4</sup> <https://www.federalreserve.gov/newsevents/pressreleases/monetary20170920a.html>

1 A. Yes. Securities markets are efficient and most likely reflect investors' expectations  
2 about future interest rates. As Dr. Roger Morin pointed out in *New Regulatory*  
3 *Finance*:

4 "A considerable body of empirical evidence indicates that U.S. capital  
5 markets are efficient with respect to a broad set of information, including  
6 historical and publicly available information."<sup>5</sup>  
7

8 Despite recent increases in the general level of interest rates since the second half of  
9 2016, the U.S. economy continues to operate in a low interest rate environment. It is  
10 important to realize that investor expectations of higher future interest rates, if any,  
11 are already embodied in current securities prices, which include debt securities and  
12 stock prices.

13  
14 Moreover, the current low interest rate environment favors lower risk regulated  
15 utilities. It would not be advisable for utility regulators to raise ROEs in anticipation  
16 of higher interest rates that may or may not occur.

17 **Q. How has the increase in interest rates last year affected utility stocks in terms of**  
18 **bond yields and stock prices?**

19 A. Table 1 below tracks movements in the 20-year Treasury bond yield, the Mergent  
20 average utility bond yield, and the Dow Jones Utilities Average ("DJUA") from  
21 January 2016 through August 2017.  
22

---

<sup>5</sup> Morin, Roger A., *New Regulatory Finance*, Public Utilities Reports, Inc. (2006) at 279.

1

	<u>20-Year Treasury %</u>	<u>Avg. Utility Bond %</u>	<u>DJUA</u>
<u>2016</u>			
January	2.49	4.62	611.35
February	2.20	4.44	620.70
March	2.28	4.40	668.57
April	2.21	4.16	654.44
May	2.22	4.06	659.44
June	2.02	3.93	716.52
July	1.82	3.70	711.42
August	1.89	3.73	666.87
September	2.02	3.80	668.13
October	2.17	3.90	675.23
November	2.54	4.21	632.67
December	2.84	4.39	645.86
<u>2017</u>			
January	2.75	4.24	668.87
February	2.76	4.25	703.16
March	2.83	4.30	697.28
April	2.67	4.19	704.35
May	2.70	4.19	726.62
June	2.54	4.01	706.91
July	2.65	4.06	726.48
August	2.55	3.92	743.24

2

3

4

5

6

7

8

9

10

Table 1 shows that the 20-year Treasury bond yield was slightly higher in August 2017 than it was in January 2016 before the Fed began raising short-term interest rates. However, the yield on the Mergent average public utility bond was substantially lower in August 2017 than in January 2016. Similarly, the DJUA was substantially higher in August 2017 than it was in January 2016.

My conclusion from this data is that even though the Federal Reserve raised short-term interest rates since March 2016, utility bond yields are lower and the DJUA is

1 higher than they were at the beginning of 2016. Utility stocks and bonds have not  
2 been adversely affected by the Fed's raising of the federal funds rate.

3 **Q. How does the investment community regard the electric utility industry as a**  
4 **whole?**

5 A. The Value Line Investment Survey's September 15, 2017 summary report on the  
6 Electric Utility (Central) Industry noted the following regarding interest rates and  
7 utility stocks.

8 "This has been an excellent year for most stocks in the Electric Utility Industry.  
9 The price of almost every issue in the group has risen, and the majority have  
10 advanced by more than 10%. A few equities, including CenterPoint Energy, have  
11 climbed more than 20%. This has occurred despite the raising of interest rates by  
12 the Federal Reserve and the expectation that at least one more increase might be  
13 in the offing. Interest rates are still quite low, by historical standards, so investors  
14 continue to "reach for yield." The average dividend yield of stocks in the Electric  
15 Utility Industry is 3.3%. This is still above the median of dividend-paying equities  
16 under our coverage, but the gap is narrower than usual."  
17

18 **Q. In 2017, the Edison Electric Institute ("EEI") published its *2016 Financial***  
19 ***Review* of the investor-owned electric utility industry. Please summarize EEI's**  
20 **conclusions with respect to credit ratings for the electric utility industry.**

21 A. EEI's report noted the following with respect to the industry's credit ratings:

22 "The industry's average credit rating was BBB+ in 2016, remaining for a third  
23 straight year above the BBB average that has held since 2004. Ratings activity, at 67  
24 changes, was in line with the industry's annual average of 70 changes per year since  
25 2008. Upgrades were 73.1% of total actions, the third-highest annual figure for  
26 upgrades in our dataset. In fact, the last four years have produced the four highest  
27 annual upgrade percentages in our historical data. EEI captures upgrades and  
28 downgrades at the subsidiary level; multiple actions within a parent holding  
29 company are included in the upgrade/downgrade totals. The industry's average credit  
30 rating and outlook are based on the unweighted averages of all Standard & Poor's  
31 (S&P) parent company ratings and outlooks.  
32

33 While the industry's average rating was unchanged at BBB+, the underlying data  
34 show a modest strengthening. Six companies received upgrades at the parent level  
35 while only two were downgraded. Our universe of U.S. "parent" company electric  
36 utilities includes a few that are either a subsidiary of an independent power producer,  
37 a subsidiary of a foreign-owned company, or that have been acquired by an

1 investment firm; three of the year's upgrades focused on a relationship with that  
2 ultimate parent company. Two other upgrades cited a reduced focus on merchant  
3 generation and an improved business risk profile. At January 1, 2017, 74.0% of  
4 ratings outlooks were "stable", 18.0% were "negative" or "watch-negative", 6.0%  
5 were "positive" or "watch-positive", and 2.0% were "developing".  
6

7 EEI's analysis shows that the investor-owned electric utility industry had strong,  
8 stable, and slightly improving credit metrics in 2016.

9 **Q. What are the current credit ratings and bond ratings for KPC?**

10 A. Standard and Poor's ("S&P") current credit rating for the Company is A- and its  
11 senior unsecured bond rating is A-. Moody's current long-term issuer rating for the  
12 KPC is Baa2, with a rating of Baa2 for senior unsecured bonds. These credit ratings  
13 are relatively consistent with the recent average utility credit rating of BBB+ as  
14 reported by EEI. The also show that KPC is a strong, investment grade utility  
15 company.  
16

### III. DETERMINATION OF FAIR RATE OF RETURN

1  
2 **Q. Please describe the methods you employed in estimating a fair rate of return for**  
3 **KPC.**

4 A. I employed a Discounted Cash Flow (“DCF”) analysis using a group of regulated  
5 electric utilities. My DCF analysis is my standard constant growth form of the  
6 model that employs four different growth rate forecasts from the Value Line  
7 Investment Survey, IBES, and Zacks. I also employed Capital Asset Pricing Model  
8 (“CAPM”) analyses using both historical and forward-looking data. Although I did  
9 not rely on the CAPM for my recommended 8.85% ROE for KPC, the CAPM  
10 provide an alternative approach to estimating the ROE for KPC, albeit a less reliable  
11 one.

12 **Q. What are the main guidelines to which you adhere in estimating the cost of**  
13 **equity for a firm?**

14 A. Generally speaking, the estimated cost of equity should be comparable to the returns  
15 of other firms with similar risk structures and should be sufficient for the firm to  
16 attract capital. These are the basic standards set out by the United States Supreme  
17 Court in Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944) and  
18 Bluefield W.W. & Improv. Co. v. Public Service Comm'n, 262 U.S. 679 (1922).

19  
20 From an economist’s perspective, the notion of “opportunity cost” plays a vital role  
21 in estimating the return on equity. One measures the opportunity cost of an  
22 investment equal to what one would have obtained in the next best alternative. For  
23 example, let us suppose that an investor decides to purchase the stock of a publicly  
24 traded electric utility. That investor made the decision based on the expectation of

1 dividend payments and perhaps some appreciation in the stock's value over time;  
2 however, that investor's opportunity cost is measured by what she or he could have  
3 invested in as the next best alternative. That alternative could have been another  
4 utility stock, a utility bond, a mutual fund, a money market fund, or any other  
5 number of investment vehicles.

6  
7 The key determinant in deciding whether to invest, however, is based on  
8 comparative levels of risk. Our hypothetical investor would not invest in a particular  
9 electric company stock if it offered a return lower than other investments of similar  
10 risk. The opportunity cost simply would not justify such an investment. Thus, the  
11 task for the rate of return analyst is to estimate a return that is equal to the return  
12 being offered by other risk-comparable firms.

13 **Q. What are the major types of risk faced by utility companies?**

14 A. In general, risk associated with the holding of common stock can be separated into  
15 three major categories: business risk, financial risk, and liquidity risk. Business risk  
16 refers to risks inherent in the operation of the business. Volatility of the firm's sales,  
17 long-term demand for its product(s), the amount of operating leverage, and quality of  
18 management are all factors that affect business risk. The quality of regulation at the  
19 state and federal levels also plays an important role in business risk for regulated  
20 utility companies.

21  
22 Financial risk refers to the impact on a firm's future cash flows from the use of debt  
23 in the capital structure. Interest payments to bondholders represent a prior call on the



1 firm's cash flows and must be met before income is available to the common  
2 shareholders. Additional debt means additional variability in the firm's earnings,  
3 leading to additional risk.

4  
5 Liquidity risk refers to the ability of an investor to quickly sell an investment without  
6 a substantial price concession. The easier it is for an investor to sell an investment  
7 for cash, the lower the liquidity risk will be. Stock markets, such as the New York  
8 and American Stock Exchanges, help ease liquidity risk substantially. Investors who  
9 own stocks that are traded in these markets know on a daily basis what the market  
10 prices of their investments are and that they can sell these investments fairly quickly.  
11 Many electric utility stocks are traded on the New York Stock Exchange and are  
12 considered liquid investments.

13 **Q. Are there any sources available to investors that quantify the total risk of a**  
14 **company?**

15 **A.** Bond and credit ratings are tools that investors use to assess the risk comparability of  
16 firms. Bond rating agencies such as Moody's and Standard and Poor's perform  
17 detailed analyses of factors that contribute to the risk of a particular investment. The  
18 result of their analyses is a bond and/or credit rating that reflect these risks.

### 19 **Discounted Cash Flow ("DCF") Model**

20 **Q. Please describe the basic DCF approach.**

21 **A.** The basic DCF approach is rooted in valuation theory. It is based on the premise that  
22 the value of a financial asset is determined by its ability to generate future net cash  
23 flows. In the case of a common stock, those future cash flows generally take the

1 form of dividends and appreciation in stock price. The value of the stock to  
 2 investors is the discounted present value of future cash flows. The general equation  
 3 then is:

$$V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \dots + \frac{R}{(1+r)^n}$$

4           Where:        *V = asset value*  
 5                            *R = yearly cash flows*  
 6                            *r = discount rate*

7 This is no different from determining the value of any asset from an economic point  
 8 of view; however, the commonly employed DCF model makes certain simplifying  
 9 assumptions. One is that the stream of income from the equity share is assumed to  
 10 be perpetual; that is, there is no salvage or residual value at the end of some maturity  
 11 date (as is the case with a bond). Another important assumption is that financial  
 12 markets are reasonably efficient; that is, they correctly evaluate the cash flows  
 13 relative to the appropriate discount rate, thus rendering the stock price efficient  
 14 relative to other alternatives. Finally, the model I typically employ also assumes a  
 15 constant growth rate in dividends. The fundamental relationship employed in the  
 16 DCF method is described by the formula:

$$k = D_1/P_0 + g$$

17           Where:        *D<sub>1</sub> = the next period dividend*  
 18                            *P<sub>0</sub> = current stock price*  
 19                            *g = expected growth rate*  
 20                            *k = investor-required return*

21 Under the formula, it is apparent that “k” must reflect the investors’ expected return.  
 22 Use of the DCF method to determine an investor-required return is complicated by  
 23 the need to express investors’ expectations relative to dividends, earnings, and book

1 value over an infinite time horizon. Financial theory suggests that stockholders  
2 purchase common stock on the assumption that there will be some change in the rate  
3 of dividend payments over time. We assume that the rate of growth in dividends is  
4 constant over the assumed time horizon, but the model could easily handle varying  
5 growth rates if we knew what they were. Finally, the relevant time frame is  
6 prospective rather than retrospective.

7 **Q. What was your first step in conducting your DCF analysis for KPC?**

8 A. My first step was to construct a comparison group of companies with a risk profile  
9 that is reasonably similar to KPC. Since KPC is a subsidiary of American Electric  
10 Power, it does not have publicly traded stock. Thus, one cannot estimate a DCF cost  
11 of equity on the Company directly. It is necessary to use a group of companies that  
12 are similarly situated and have reasonably similar risk profiles to KPC.

13 **Q. Please describe your approach for selecting a group of electric companies.**

14 A. For purposes of this case, I chose to rely on the proxy group that Companies witness  
15 McKenzie used for his analysis. Although the selection criteria he used are  
16 somewhat different from those I have used in past cases, the constituent members of  
17 his proxy group comprise a reasonable basis for purposes of estimating the ROE for  
18 the Company, with three exceptions. I eliminated the following companies from Mr.  
19 McKenzie's proxy group as follows:

- 20
- 21 • Avangrid Inc.: NMF (no meaningful figure) for Value Line earnings and  
22 dividend growth forecasts and Value Line beta. Since Value Line is one of

1 my primary sources for growth rate forecasts, there is not enough Value Line  
2 information to include this company in the proxy group.

- 3 • Emera, Inc.: Emera completed the acquisition of TECO Energy in 2016 and  
4 as a result has Value Line earnings and dividend growth estimates – 8.5%  
5 and 11.0% respectively, that reflect higher short-term growth, but are not  
6 reflective of longer term growth as Emera assimilates TECO into its  
7 corporate earnings and dividends. Value Line predicted that Emera’s revenue  
8 will increase from \$2.789 billion in 2015 to \$6.875 billion in 2017.<sup>6</sup> Clearly,  
9 Emera is a different company today from what it was in 2015 and its  
10 expected short-term growth in dividends and revenues reflect this.
- 11 • Fortis, Inc.: Fortis acquired ITC Holdings in October 2016 and is a different  
12 company from what is was in 2015. Value Line forecasted that its revenues  
13 would increase from \$6.727 billion in 2015 to \$8.5 billion in 2017 and its  
14 total capital will increase from \$21.151 billion in 2015 to \$37.525 billion in  
15 2017. This is expected to fuel a rise in earnings of 9.0% over the next five  
16 years, according to Value Line.<sup>7</sup>

17  
18 The resulting comparison group of 15 companies that I used in my analysis is shown  
19 in the Table 2 below.  
20

---

<sup>6</sup> Value Line Investment Survey Report, June 23, 2017.

<sup>7</sup> Value Line Investment Survey Report, September 15, 2017.

**TABLE 2**  
**Credit Ratings**  
**Proxy Group and Kentucky Power**

	<u>S&amp;P</u>	<u>Moody's</u>
Alliant Energy	A-	Baa1
Ameren Corp.	BBB+	Baa!
American Elec Pwr	A-	Baa1
CMS Energy Corp.	BBB+	Baa1
Dominion Energy	BBB+	Baa2
DTE Energy Co.	BBB+	Baa1
Duke Energy Corp.	A-	Baa1
Eversource Energy	A-	Baa1
NextEra Energy, Inc.	A-	Baa1
PPL Corp.	A-	Baa2
Pub Sv Enterprise Grp.	BBB+	Baa1
SCANA Corp.	BBB+	Baa3
Sempra Energy	BBB+	Baa1
Southern Company	A-	Baa2
Vectren Corp.	A-	NR
Kentucky Power	A-	Baa2

1

2 **Q. What was your first step in determining the DCF return on equity for the**  
3 **comparison group?**

4 A. I first determined the current dividend yield,  $D_1/P_0$ , from the basic equation. My  
5 general practice is to use six months as the most reasonable period over which to  
6 estimate the dividend yield. The six-month period I used covered the months from  
7 March through August 2017. I obtained historical prices and dividends from Yahoo!  
8 Finance. The annualized dividend divided by the average monthly price represents  
9 the average dividend yield for each month in the period.

10

11 The resulting average dividend yield for the comparison group is 3.45%. These  
12 calculations are shown in Exhibit No. \_\_\_\_ (RAB-3).

1 **Q. Having established the average dividend yield, how did you determine the**  
2 **investors' expected growth rate for the electric comparison group?**

3 A. The investors' expected growth rate, in theory, correctly forecasts the constant rate  
4 of growth in dividends. The dividend growth rate is a function of earnings growth  
5 and the payout ratio, neither of which is known precisely for the future. We refer to  
6 a perpetual growth rate since the DCF model has no arbitrary cut-off point. We must  
7 estimate the investors' expected growth rate because there is no way to know with  
8 absolute certainty what investors expect the growth rate to be in the short term, much  
9 less in perpetuity.

10

11 For my analysis in this proceeding, I used three major sources of analysts' forecasts  
12 for growth. These sources are The Value Line Investment Survey, Zacks, and IBES.  
13 This is the method I typically use for estimating growth for my DCF calculations.

14 **Q. Please briefly describe Value Line, Zacks, and IBES.**

15 A. The Value Line Investment Survey is a widely used and respected source of investor  
16 information that covers approximately 1,700 companies in its Standard Edition and  
17 several thousand in its Plus Edition. It is updated quarterly and probably represents  
18 the most comprehensive of all investment information services. It provides both  
19 historical and forecasted information on a number of important data elements. Value  
20 Line neither participates in financial markets as a broker nor works for the utility  
21 industry in any capacity of which I am aware.

22 Zacks gathers opinions from a variety of analysts on earnings growth forecasts for  
23 numerous firms including regulated electric utilities. The estimates of the analysts

1           responding are combined to produce consensus average estimates of earnings  
2           growth. I obtained Zacks' earnings growth forecasts from its web site.

3

4           Like Zacks, IBES also compiles and reports consensus analysts' forecasts of  
5           earnings growth. I obtained these forecasts from Yahoo! Finance.

6   **Q.    Why did you rely on analysts' forecasts in your analysis?**

7   A.    Return on equity analysis is a forward-looking process. Five-year or ten-year  
8           historical growth rates may not accurately represent investor expectations for future  
9           dividend growth. Analysts' forecasts for earnings and dividend growth provide  
10          better proxies for the expected growth component in the DCF model than historical  
11          growth rates. Analysts' forecasts are also widely available to investors and one can  
12          reasonably assume that they influence investor expectations.

13   **Q.    Please explain how you used analysts' dividend and earnings growth forecasts in  
14          your constant growth DCF analysis.**

15   Q.    Columns (1) through (5) of the top section of Exhibit No. \_\_\_\_ (RAB-4) shows the  
16          forecasted dividend, earnings, and retention growth rates from Value Line and the  
17          earnings growth forecasts from IBES and Zacks. In my analysis, I used four of these  
18          growth rates: dividend and earnings growth from Value Line and earnings growth  
19          from Zacks and IBES. It is important to include dividend growth forecasts in the  
20          DCF model since the model calls for forecasted cash flows. Value Line is the only  
21          sources of which I am aware that forecasts dividend growth and my approach gives  
22          this forecast equal weight with each of the three earnings growth forecasts.

1 **Q. How did you proceed to determine the DCF return of equity for the comparison**  
2 **group?**

3 A. To estimate the expected dividend yield ( $D_1$ ), the current dividend yield must be  
4 moved forward in time to account for dividend increases over the next twelve  
5 months. I estimated the expected dividend yield by multiplying the current dividend  
6 yield by one plus one-half the expected growth rate.

7

8 Exhibit No. \_\_\_(RAB-4) presents my standard method of calculating dividend  
9 yields, growth rates, and return on equity for the comparison group of companies.

10 The DCF Return on Equity Calculation section shows the application of each of four  
11 growth rates to the current group dividend yield of 3.45% to calculate the expected  
12 dividend yield. I then added the expected growth rates to the expected dividend  
13 yield. In evaluating investor expected growth rates, I use both the average and the  
14 median values for the comparison group under consideration.

15 **Q. What are the results of your constant growth DCF model?**

16 A. For Method 1 (average growth rates), the results range from 8.14% to 9.25%, with  
17 the average of these results being 8.86%. For Method 2 (median growth rates), the  
18 results range from 8.28% to 9.55%, with the average of these results being 8.85%.

### 19 **Capital Asset Pricing Model**

20 **Q. Briefly summarize the Capital Asset Pricing Model ("CAPM") approach.**

21 A. The theory underlying the CAPM approach is that investors, through diversified  
22 portfolios, may combine assets to minimize the total risk of the portfolio.  
23 Diversification allows investors to diversify away all risks specific to a particular



1 company and be left only with market risk that affects all companies. Thus, the  
2 CAPM theory identifies two types of risks for a security: company-specific risk and  
3 market risk. Company-specific risk includes such events as strikes, management  
4 errors, marketing failures, lawsuits, and other events that are unique to a particular  
5 firm. Market risk includes inflation, business cycles, war, variations in interest rates,  
6 and changes in consumer confidence. Market risk tends to affect all stocks and  
7 cannot be diversified away. The idea behind the CAPM is that diversified investors  
8 are rewarded with returns based on market risk.

9  
10 Within the CAPM framework, the expected return on a security is equal to the risk-  
11 free rate of return plus a risk premium that is proportional to the security's market, or  
12 non-diversifiable, risk. Beta is the factor that reflects the inherent market risk of a  
13 security and measures the volatility of a particular security relative to the overall  
14 market for securities. For example, a stock with a beta of 1.0 indicates that if the  
15 market rises by 15%, that stock will also rise by 15%. This stock moves in tandem  
16 with movements in the overall market. Stocks with a beta of 0.5 will only rise or fall  
17 50% as much as the overall market. So with an increase in the market of 15%, this  
18 stock will only rise 7.5%. Stocks with betas greater than 1.0 will rise and fall more  
19 than the overall market. Thus, beta is the measure of the relative risk of individual  
20 securities vis-à-vis the market.

21  
22 Based on the foregoing discussion, the equation for determining the return for a  
23 security in the CAPM framework is:

$$K = R_f + \beta(MRP)$$

1                   Where:        *K*     = *Required Return on equity*  
 2                                    *R<sub>f</sub>*    = *Risk-free rate*  
 3                                    *MRP* = *Market risk premium*  
 4                                    *β*     = *Beta*

5

6           This equation tells us about the risk/return relationship posited by the CAPM.

7           Investors are risk averse and will only accept higher risk if they expect to receive

8           higher returns. These returns can be determined in relation to a stock's beta and the

9           market risk premium. The general level of risk aversion in the economy determines

10          the market risk premium. If the risk-free rate of return is 3.0% and the required

11          return on the total market is 15%, then the risk premium is 12%. Any stock's

12          required return can be determined by multiplying its beta by the market risk

13          premium. Stocks with betas greater than 1.0 are considered riskier than the overall

14          market and will have higher required returns. Conversely, stocks with betas less than

15          1.0 will have required returns lower than the market.

16   **Q.    In general, are there concerns regarding the use of the CAPM in estimating the**  
 17   **return on equity?**

18   A.    Yes. There is some controversy surrounding the use of the CAPM.<sup>8</sup> There is  
 19   evidence that beta is not the primary factor for determining the risk of a security. For  
 20   example, Value Line's "Safety Rank" is a measure of total risk, not its calculated  
 21   beta coefficient. Beta coefficients usually describe only a small amount of total  
 22   investment risk.

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<sup>8</sup> For a more complete discussion of some of the controversy surrounding the use of the CAPM, refer to *A Random Walk Down Wall Street* by Burton Malkiel, pp. 206 - 211, 2007 edition.

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There is also substantial judgment involved in estimating the required market return. In theory, the CAPM requires an estimate of the return on the total market for investments, including stocks, bonds, real estate, etc. It is nearly impossible for the analyst to estimate such a broad-based return. Often in utility cases, a market return is estimated using the S&P 500 or the return on Value Line's stock market composite. However, these are limited sources of information with respect to estimating the investor's required return for all investments. In practice, the total market return estimate faces significant limitations to its estimation and, ultimately, its usefulness in quantifying the investor required ROE.

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In the final analysis, a considerable amount of judgment must be employed in determining the risk-free rate and market return portions of the CAPM equation. The analyst's application of judgment can significantly influence the results obtained from the CAPM. My experience with the CAPM indicates that it is prudent to use a wide variety of data in estimating investor-required returns. Of course, the range of results may also vary widely, which underscores the difficulty in obtaining a reliable estimate from the CAPM.

19  
20  
21  
22  
23

**Q. How did you estimate the market return portion of the CAPM?**

A. The first source I used was the Value Line Investment Analyzer, Plus Edition, for September 20, 2017. This edition covers several thousand stocks. The Value Line Investment Analyzer provides a summary statistical report detailing, among other things, forecasted growth rates for earnings and book value for the companies Value

1 Line follows as well as the projected total annual return over the next 3 to 5 years. I  
2 present these growth rates and Value Line's projected annual return on page 2 of  
3 Exhibit No. \_\_\_\_ (RAB-5). I included median earnings and book value growth rates.  
4 The estimated market returns using Value Line's market data range from 9.00% to  
5 9.91%. The average of these market returns is 9.45%.

6 **Q. Why did you use median growth rate estimates rather than the average growth**  
7 **rate estimates for the Value Line companies?**

8 A. Using median growth rates is likely a more accurate method of estimating the central  
9 tendency of Value Line's large data set compared to the average growth rates.  
10 Average earnings and book value growth rates may be unduly influenced by very  
11 high or very low 3 - 5-year growth rates that are unsustainable in the long run. For  
12 example, Value Line's Statistical Summary shows both the highest and lowest value  
13 for earnings and book value growth forecasts. For earnings growth, Value Line  
14 showed the highest earnings growth forecast to be 90.5% and the lowest growth rate  
15 to be -27.5%. The highest book value growth rate was 98.5% and the lowest was  
16 -32.5%. Neither of these levels of growth is compatible with long-run growth  
17 prospects for the market. The median growth rate is not influenced by such extremes  
18 because it represents the middle value of a very wide range of earnings growth rates.

19 **Q. Please continue with your market return analysis.**

20 A. I also considered a supplemental check to the Value Line projected market return  
21 estimates. Duff and Phelps compiled a study of historical returns on the stock  
22 market in its 2017 SBBI Yearbook. Some analysts employ this historical data to  
23 estimate the market risk premium of stocks over the risk-free rate. The assumption is

1 that a risk premium calculated over a long period is reflective of investor  
2 expectations going forward. Exhibit No. \_\_\_(RAB-6) presents the calculation of the  
3 market returns using the historical data.

4 **Q. Please explain how this historical risk premium is calculated.**

5 A. Exhibit No. \_\_\_(RAB-6) shows both the geometric and arithmetic average of yearly  
6 historical stock market returns over the historical period from 1926 - 2016. The  
7 average annual income return for 20-year Treasury bond is subtracted from these  
8 historical stocks returns to obtain the historical market risk premium of stock returns  
9 over long-term Treasury bond income returns. The historical market risk premium  
10 range is 5.0% - 7.0%.

11 **Q. Did you add an additional measure of the historical risk premium in this case?**

12 A. Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and Dr.  
13 Peng Chen indicating that the historical risk premium of stock returns over long-term  
14 government bond returns has been significantly influenced upward by substantial  
15 growth in the price/earnings ("P/E") ratio for stocks from 1980 through 2001.<sup>9</sup> Duff  
16 and Phelps noted that this growth in the P/E ratio for stocks was subtracted out of the  
17 historical risk premium because "it is not believed that P/E will continue to increase  
18 in the future." The adjusted historical arithmetic market risk premium is 5.97%,  
19 which I have also included in Exhibit No. \_\_\_(RAB-6). This risk premium estimate  
20 falls near the middle of the market risk premium range.

---

<sup>9</sup> 2017 *SBBI Yearbook*, Duff and Phelps, pp. 10-28 through 10-30.

1 **Q. How did you determine the risk free rate?**

2 A. I used the average yields on the 20-year Treasury bond and five-year Treasury note  
3 over the six-month period from March through August 2017. This was the latest  
4 available data from the Federal Reserve's Selected Interest Rates (Daily) H.15 web  
5 site during the preparation of my Direct Testimony. The 20-year Treasury bond is  
6 often used by rate of return analysts as the risk-free rate, but it contains a significant  
7 amount of interest rate risk. The five-year Treasury note carries less interest rate risk  
8 than the 20-year bond and is more stable than three-month Treasury bills. Therefore,  
9 I have employed both securities as proxies for the risk-free rate of return. This  
10 approach provides a reasonable range over which the CAPM return on equity may be  
11 estimated.

12 **Q. How did you determine the value for beta?**

13 A. I obtained the betas for the companies in the electric company comparison group  
14 from most recent Value Line reports. The average of the Value Line betas for the  
15 comparison group is 0.67.

16 **Q. Please summarize the CAPM results.**

17 A. For my forward-looking CAPM return on equity estimates, the CAPM results are  
18 6.90% - 7.15%. Using historical risk premiums, the CAPM results are 5.99% -  
19 7.32%.

## 20 **Conclusions and Recommendations**

21 **Q. Please summarize the cost of equity results for your DCF and CAPM analyses.**

- 1 A. Table 3 below summarizes my return on equity results using the DCF and CAPM for  
2 my comparison group of companies.

<b>TABLE 3</b>	
<b>SUMMARY OF ROE ESTIMATES</b>	
Baudino DCF Methodology:	
Average Growth Rates	
- High	9.25%
- Low	8.14%
- Average	8.86%
Median Growth Rates:	
- High	9.55%
- Low	8.28%
- Average	8.85%
CAPM:	
- 5-Year Treasury Bond	6.90%
- 20-Year Treasury Bond	7.15%
- Historical Returns	5.99% - 7.32%

3

4 **Q. What is your recommended return on equity for KPC?**

5 A. I recommend that the KPSC adopt an 8.85% return on equity for KPC. My  
6 recommendation is consistent with the average DCF results from my constant growth  
7 DCF model. Based on current market evidence, an 8.85% return on equity is fair and  
8 reasonable for A-/Baa2 rated electric utility company like KPC.

9 **Q. Mr. Baudino, are you concerned that your recommended cost of equity is too**  
10 **low?**

11 A. No, not at all. The preponderance of market evidence I examined fully supports my  
12 ROE recommendation for KPC in this proceeding. As I described in Section II of  
13 my testimony, the U. S. economy is in a low interest rate environment, one that has  
14 been supported in a deliberate and considered fashion by Federal Reserve monetary

1 policy. Both my DCF and CAPM ROE estimates show that the investor required  
2 ROE for KPC, as well as other regulated electric and gas utilities, reflects this low  
3 interest rate environment.

4 **Q. Does KIUC recommend the inclusion of short-term debt in KPC's capital**  
5 **structure?**

6 A. Yes. Mr. Kollen addresses the inclusion of short-term debt in the Company's  
7 capital structure. I will address the cost of short-term debt.

8 **Q. What is your recommended cost of short-term debt?**

9 A. I recommend a cost of short-term debt of 1.25%. This recommendation is based on  
10 my review of the rates on short-term commercial paper and on the London Interbank  
11 Offer Rate ("LIBOR"). LIBOR is one of the most widely used sources for  
12 determining short-term interest rates. Commercial paper is typically defined as  
13 short-term debt issued by corporations for financing such items as accounts  
14 receivable and other short-term obligations.

15

16 As of September 18, 2017, the Federal Reserve reported that the cost of 1-month  
17 commercial paper was 1.11%. The Wall Street Journal also reported on September  
18 20, 2017 that the one-month LIBOR was 1.237%. For purposes of this case, I  
19 recommend using the approximate upper end of this range of estimates, 1.25%, as a  
20 reasonable proxy for the cost of short-term debt for KPC in this proceeding.

21



1                   **IV. RESPONSE TO KENTUCKY POWER TESTIMONY**

2   **Q.    Have you reviewed the Direct Testimony of Mr. McKenzie?**

3    A.    Yes.

4   **Q.    Please summarize your conclusions with respect to his testimony and return on**  
5   **equity recommendation.**

6    A.    Mr. McKenzie's recommended 10.31% return on equity is overstated and inconsistent  
7           with the current low interest rate environment. As I shall demonstrate later in this  
8           section of my testimony, Mr. McKenzie made judgments that served to inflate his ROE  
9           results, particularly for the DCF and CAPM. As such, his testimony and analyses  
10          provide very little useful guidance for the Commission with respect to the investor  
11          required ROE for KPC.

12   **Outlook for Capital Costs**

13   **Q.    Beginning on page 16, line 19 of his Direct Testimony, Mr. McKenzie presented**  
14   **his view of current capital market conditions, noting that these conditions**  
15   **“continue to be affected by the Federal Reserve’s unprecedented monetary**  
16   **policy actions, which were designed to push interest rates to historically and**  
17   **artificially low levels ...” Please respond to Mr. McKenzie’s position with**  
18   **respect to current capital market conditions.**

19    A.    I agree that the economy is in a low interest rate environment that is being supported  
20          quite deliberately by Federal Reserve policy. Nonetheless, current financial market  
21          conditions do indeed provide a representative basis for estimating the cost of equity  
22          capital for Kentucky Power Company and for utilities generally. The fact that interest  
23          rates are relatively low by historical standards does not preclude the rate of return  
24          analyst from making a reasonable assessment of investor required ROEs using currently  
25          prevailing stock prices and interest rates.

1 **Q. On page 21 of Mr. McKenzie's Direct Testimony, Figure 1 shows higher**  
2 **forecasted interest rates through 2021 from several different forecasting**  
3 **sources. Should the Commission increase its allowed return on equity based on**  
4 **these higher interest rate forecasts?**

5 A. No. As I stated in Section II my Direct Testimony, current interest rates embody  
6 investor expectations based on their assessments of all available market information.  
7 This includes interest rate forecasts cited by Mr. McKenzie as well as statements  
8 from the Federal Reserve. The KPSC should not invest in the interest rate forecasts  
9 cited by Mr. McKenzie in determining a fair rate of return for KPC in this  
10 proceeding.

11

12 There is evidence that economists have systematically overestimated interest rates in  
13 recent years. Jared Bernstein wrote the following in a recent article in the New York  
14 Times<sup>10</sup>:

15 In the early 1980s, forecasters did a good job of predicting the path of bond rates,  
16 though their job was a bit easier than usual because rates were so highly elevated that  
17 it was a pretty sure bet they'd be headed back down. ("Regression to the mean," for  
18 all you statistics fans.)

19

20 But since the mid-1990s, government forecasters have consistently overestimated  
21 this critical variable.

22

23 This "consistently" point is essential. Most economic forecasts are off one way or the  
24 other — too high or too low, but they tend to be pretty much balanced in either  
25 direction. But on the 10-year bond rate, the errors are systemic.

26

27 Forecasters are regularly overestimating and thus regularly overstating, all else being  
28 equal, future interest payments on the debt.

29

---

<sup>10</sup> "We Keep Flunking Forecasts on Interest Rates, Distorting the Budget Outlook", Jared Bernstein, *New York Times*, Feb. 23, 2015.

1 Another article by Akin Oyedele entitled "Interest Rate Forecasters Are Shockingly  
2 Wrong Almost All Of The Time"<sup>11</sup> showed that from June 2010 through June 2015  
3 interest rate forecasts were wrong most of the time. Mr. Oyedele noted that 2014  
4 "was particularly bad, when strategists became too optimistic that the Federal  
5 Reserve would hike rates."

6  
7 These articles highlight the consistent upward bias that is likely embodied in the  
8 forecasts presented by Mr. McKenzie.

9 **Q. Is there support for the position that today's currently low interest rates is part**  
10 **of a long-term trend?**

11 A. Yes. In a weekly blog at the Brookings Institution, former Federal Reserve  
12 Chairman Ben Bernanke wrote the following:<sup>12</sup>

13 Interest rates around the world, both short-term and long-term, are exceptionally low  
14 these days. The U.S. government can borrow for ten years at a rate of about 1.9  
15 percent, and for thirty years at about 2.5 percent. Rates in other industrial countries  
16 are even lower: For example, the yield on ten-year government bonds is now around  
17 0.2 percent in Germany, 0.3 percent in Japan, and 1.6 percent in the United  
18 Kingdom. In Switzerland, the ten-year yield is currently slightly negative, meaning  
19 that lenders must pay the Swiss government to hold their money! The interest rates  
20 paid by businesses and households are relatively higher, primarily because of credit  
21 risk, but are still very low on an historical basis.

22  
23 Low interest rates are not a short-term aberration, but part of a long-term trend. As  
24 the figure below shows, ten-year government bond yields in the United States were  
25 relatively low in the 1960s, rose to a peak above 15 percent in 1981, and have been  
26 declining ever since. That pattern is partly explained by the rise and fall of inflation,  
27 also shown in the figure. All else equal, investors demand higher yields when  
28 inflation is high to compensate them for the declining purchasing power of the

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<sup>11</sup> Akin Oyedele, "Interest Rate Forecasters Are Shockingly Wrong Almost All of the Time", *Business Insider*, July 18, 2015.

<sup>12</sup> Ben S. Bernanke, "Why Are Interest Rates So Low", Weekly Blog, Brookings, March 30, 2015. <https://www.brookings.edu/blog/ben-bernanke/2015/03/30/why-are-interest-rates-so-low/>

1 dollars with which they expect to be repaid. But yields on inflation-protected bonds  
2 are also very low today; the real or inflation-adjusted return on lending to the U.S.  
3 government for five years is currently about *minus* 0.1 percent.

4  
5 Why are interest rates so low? Will they remain low? What are the implications for  
6 the economy of low interest rates?

7  
8 If you asked the person in the street, “Why are interest rates so low?”, he or she  
9 would likely answer that the Fed is keeping them low. That’s true only in a very  
10 narrow sense. The Fed does, of course, set the benchmark nominal short-term  
11 interest rate. The Fed’s policies are also the primary determinant of inflation and  
12 inflation expectations over the longer term, and inflation trends affect interest rates,  
13 as the figure above shows. But what matters most for the economy is the real, or  
14 inflation-adjusted, interest rate (the market, or nominal, interest rate minus the  
15 inflation rate). The real interest rate is most relevant for capital investment decisions,  
16 for example. The Fed’s ability to affect real rates of return, especially longer-term  
17 real rates, is transitory and limited. Except in the short run, real interest rates are  
18 determined by a wide range of economic factors, including prospects for economic  
19 growth—not by the Fed.

20 **Q. Did Mr. McKenzie present forecasted interest rates in the testimony he co-**  
21 **sponsored in Kentucky Utilities (“KU”) and Louisville Gas and Electric**  
22 **(“LGE”) Case Nos. 2014-00371 and 2014-00372?**

23 A. Yes. On page 13 of the Direct Testimony he co-sponsored with Dr. Avera in those  
24 cases, Mr. McKenzie presented Figure 2 on page 13 of his KU testimony that  
25 showed forecasted interest rates with a graph like the one included in his Direct  
26 Testimony in this case on page 21. I reviewed the work papers submitted by Dr.  
27 Avera and Mr. McKenzie in those proceedings and found the Blue Chip financial  
28 forecast dated June 1, 2014, which formed part of the basis of Figure 2 in their  
29 testimony in those cases, which was filed on November 26, 2014.

30  
31 *In the Blue Chip forecasts dated June 1, 2014 presented by Mr. McKenzie in Case*  
32 *Nos. 2014-00371 and 2014-00372, the consensus forecast for the 30-year Treasury*

1           *Bond was 4.7% for 2016 and 5.1% for 2017.*<sup>13</sup> The actual December 2016 30-Year  
2           Treasury Bond yield was 3.11% and for August 2017 was only 2.80%. The June  
3           2014 Blue Chip consensus forecasts presented by Mr. McKenzie overshot the recent  
4           actual 30-Year Treasury Bond rates by 159 – 230 basis points. Stated another way,  
5           the Blue Chip consensus forecasts missed the recent actual 30-Year Treasury Bond  
6           rates by 1.59% to 2.30%.

7  
8           The magnitude of the overstatement by the Blue Chip consensus forecasts is strong  
9           support for my recommendation that the Commission disregard interest rate forecasts  
10          when considering its allowed ROE for KPC in this proceeding.

#### 11    **DCF Model**

12    **Q.    Briefly summarize Mr. McKenzie’s approach to the DCF model.**

13    A.    Mr. McKenzie constructed a group of electric and gas utilities for purposes of  
14          estimating the DCF ROE for KPC. He used several sources of growth rate forecasts,  
15          which included IBES, Zacks, Value Line, Bloomberg, and S&P Capital IQ as well as  
16          an estimate of sustainable growth. I ultimately adopted Mr. McKenzie’s proxy  
17          group with the three exceptions I noted earlier.

18  
19          In his Exhibit AMM-5, Mr. McKenzie adjusted his DCF ROE results by excluding  
20          certain company ROE results that, in his view, were either too low or too high. On

---

<sup>13</sup>        KU response to AG 1-187, Docket No. 2014-00371, WP-25.

1 the low end, these results ranged from 4.2% to 6.9%. On the high end, Mr.  
2 McKenzie excluded one value of 15.2%, but saw fit to include ROE results ranging  
3 from 12.5% to 14.0%. After making these exclusions, his resulting DCF range was  
4 8.7% to 9.8% using an average of the remaining results. The midpoints ranged from  
5 9.8% to 10.8%.

6 **Q. Please comment on Mr. McKenzie's approach to formulating his DCF**  
7 **recommendation to the Commission.**

8 A. Mr. McKenzie conducted a biased approach in formulating his DCF  
9 recommendations. He applied a test for excluding ROE results that, in his view,  
10 were too low but failed to exclude other results that are excessively high. For  
11 example, the average Commission-allowed ROE for 2016 that was reported by Mr.  
12 McKenzie in his Exhibit AMM-9 was 9.77%. *However, Mr. McKenzie included*  
13 *ROEs in his Exhibit AMM-5 in that are 273 – 423 basis points higher than 9.77%.*  
14 My review of Commission allowed returns contained in Mr. McKenzie's Exhibit  
15 AMM-9 reveals that 2002 was the last year that allowed returns on equity were as  
16 high as 11% and that the last Commission allowed return near 13% was in 1989.

17  
18 It is abundantly clear that Mr. McKenzie's approach to excluding ROE results from  
19 his DCF analysis had the effect of inflating his DCF ROE recommendation.

20 **Q. Have you conducted an alternative analysis that includes all the DCF results**  
21 **from Mr. McKenzie's Exhibit AMM-5?**

22 A. Yes. Table 4 below presents the average and median ROEs utilizing all the DCF  
23 results from Mr. McKenzie's Exhibit AMM-5, page 3 of 3.

1

**Table 4**  
**McKenzie ROE Results**

<u>Company</u>	<u>V Line</u>	<u>IBES</u>	<u>Zacks</u>	<u>Bloomberg</u>	<u>S&amp;P</u> <u>Capital/IQ</u>	<u>BR+SV</u> <u>Growth</u>	<u>Average</u> <u>ROE</u>
Alliant Energy	9.2%	9.6%	8.7%	9.6%	9.1%	8.8%	9.2%
Ameren Corp.	9.3%	9.3%	9.8%	9.1%	9.4%	7.1%	9.0%
American Elec Pwr	7.6%	6.0%	9.2%	7.6%	7.7%	7.9%	7.6%
Avangrid, Inc.	n/a	13.0%	12.5%	13.0%	11.8%	5.7%	11.2%
CMS Energy Corp.	9.5%	10.5%	9.0%	9.8%	10.4%	8.8%	9.7%
Dominion Energy	9.5%	8.0%	10.0%	9.0%	9.6%	4.2%	8.4%
DTE Energy Co.	8.3%	7.9%	9.2%	9.3%	9.0%	7.5%	8.5%
Duke Energy Corp.	9.7%	7.8%	10.2%	10.7%	8.8%	7.6%	9.1%
Emera Inc.	13.4%	n/a	n/a	11.4%	12.6%	12.5%	12.5%
Eversource Energy	9.7%	9.2%	9.5%	9.3%	9.0%	7.4%	9.0%
Fortis Inc.	14.0%	n/a	10.5%	10.0%	11.2%	8.1%	10.8%
NextEra Energy, Inc.	9.5%	9.7%	10.1%	10.0%	9.9%	9.3%	9.8%
PPL Corp.	n/a	6.7%	9.2%	5.4%	9.4%	11.0%	8.3%
Pub Sv Enterprise	6.4%	4.6%	6.9%	7.1%	9.0%	8.5%	7.1%
SCANA Corp.	7.8%	9.6%	9.1%	9.8%	9.2%	8.5%	9.0%
Sempra Energy	11.0%	12.9%	11.7%	15.2%	11.0%	6.7%	11.4%
Southern Company	8.2%	8.5%	9.7%	9.3%	9.1%	8.2%	8.8%
Vectren Corp.	9.9%	8.4%	8.6%	8.4%	8.6%	9.2%	8.8%
Average	9.6%	8.8%	9.6%	9.7%	9.7%	8.2%	9.3%
Median	9.5%	8.9%	9.5%	9.5%	9.3%	8.1%	9.0%

2

3           Rather than simply excluding low-end results, I recommend that the median be used  
4           as an alternative measure of central tendency. As I testified in Section III, the  
5           median is not affected by extremely high or low results, but instead represents the  
6           middle value of the data set. If there are concerns about results that are either too  
7           high or too low, the median may be used as an additional reference for the investor  
8           required ROE.

9

1 Table 4 shows that when all results are considered, the average and median results  
2 from Mr. McKenzie's Exhibit AMM-5 are closer to my DCF results. I would add  
3 that Avangrid Inc, Emera, Inc., and Fortis Inc. inflate these DCF results and should  
4 be excluded for the reasons I stated earlier.

5 **CAPM and ECAPM**

6 **Q. Beginning on page 50 of his Direct Testimony, Mr. McKenzie described the**  
7 **Empirical CAPM ("ECAPM") analysis. Is this a reasonable method to use to**  
8 **estimate the investor required ROE for KPC?**

9 A. No. The ECAPM is supposed to account for the possibility that the CAPM  
10 understates the return on equity for companies with betas less than 1.0. I believe it is  
11 highly unlikely that investors use the ECAPM formulation shown in Mr. McKenzie's  
12 Exhibit No. 8 to "correct" CAPM returns for regulated electric utilities. To the extent  
13 investors use the CAPM to estimate their required returns, I believe it is much more  
14 likely that they use the traditional CAPM equation that I used in Section III of my  
15 testimony. Mr. McKenzie presented no evidence that investors use the adjustment  
16 factors contained in his ECAPM analysis to adjust their expected returns for  
17 regulated utilities. Moreover, the use of an adjustment factor to "correct" the CAPM  
18 results for companies with betas less than 1.0 suggests that published betas by such  
19 sources as Value Line are incorrect and that investors should not rely on them. In  
20 fact, Mr. McKenzie testified on page 48, lines 16 through 18 of his Direct Testimony  
21 that Value Line is "the most widely referenced source for beta is regulatory  
22 proceedings."

23 **Q. Please continue your evaluation of the results of Mr. McKenzie's CAPM and**  
24 **ECAPM analysis.**



1 A. I disagree with Mr. McKenzie's general formulation of the CAPM and ECAPM and  
2 in particular with his estimate of the expected market return. He estimated the  
3 market return portion of the CAPM and ECAPM by estimating the current market  
4 return for dividend paying stocks in the S&P 500. The market return portion of the  
5 CAPM should represent the most comprehensive estimate of the total return for all  
6 investment alternatives, not just a small subset of publicly traded stocks that pay  
7 dividends. In practice, of course, finding such an estimate is difficult and is one of  
8 the thornier problems in estimating an accurate ROE when using the CAPM. If one  
9 limits the market return to stocks, then there are more comprehensive measures of  
10 the stock market available, such as the Value Line Investment Survey that I used in  
11 my CAPM analysis. Value Line's projected earnings growth used a sample of 2,001  
12 stocks and its book value growth estimate used 1,523 stocks. Value Line's projected  
13 annual percentage return included 1,660 stocks. These are much broader samples  
14 than Mr. McKenzie's limited sample of dividend paying stocks from the S&P 500.

15 **Q. Did Mr. McKenzie overstate the expected market return component of the**  
16 **CAPM and ECAPM.**

17 A. Yes. My forward-looking market returns show an expected return on the market of  
18 9.45%, far less than the 12.0% expected return result for the limited sample of  
19 companies Mr. McKenzie used for his ECAPM and CAPM market return.

20 **Q. On page 49 of his Direct Testimony, Mr. McKenzie explained that he**  
21 **incorporated a size adjustment to his CAPM and ECAPM results. This**  
22 **increased his average CAPM results by about 30 basis points, or 0.30%. Is this**  
23 **size adjustment appropriate?**

24 A. No. The data that Mr. McKenzie relied upon to make this adjustment came from the  
25 *2017 Valuation Handbook-U.S. Guide to Cost of Capital* by Duff and Phelps. The

1 groups of companies from which he took this significant upward adjustment to his  
2 CAPM and ECAPM results contain many unregulated companies. Further, the  
3 decile groups from which these adjustments were taken had average betas ranging  
4 from 0.92 to 1.11<sup>14</sup>. These betas are greatly in excess of my utility proxy group  
5 average beta of 0.67, indicating that the unregulated companies that Mr. McKenzie  
6 used to make his size adjustment are riskier than regulated utilities. There is no  
7 evidence to suggest that the size premium used by Mr. McKenzie applies to  
8 regulated utility companies, which on average are quite different from the group of  
9 companies included in the *2017 SBBI Yearbook* research on size premiums. I  
10 recommend that the Commission reject Mr. McKenzie's size premium in the CAPM  
11 and ECAPM ROE.

12 **Q. On page 50 of his Direct Testimony, Mr. McKenzie recommended using**  
13 **projected bond yields in the CAPM ROE models. Should the Commission use**  
14 **forecasted bond yields in its ROE analysis in this proceeding?**

15 A. No. Current interest rates and bond yields embody all the relevant market data and  
16 expectations of investors, including expectations of changing future interest rates.  
17 Current interest rates present tangible market evidence of investor return  
18 requirements today, and these are the interest rates and bond yields that should be  
19 used in the CAPM, ECAPM, and in the bond yield plus risk premium analyses. To  
20 the extent that investors give forecasted interest rates any weight at all, they are  
21 already incorporated in current securities prices.

---

<sup>14</sup> Duff and Phelps, *2017 SBBI Yearbook*, pg. 7-16.

1 **Utility Risk Premium**

2 **Q. Please summarize Mr. McKenzie's utility risk premium approach.**

3 A. Mr. McKenzie developed an historical risk premium using Commission-allowed  
4 returns for regulated utility companies from 1974 through 2016. He also used  
5 regression analysis to estimate the value of the inverse relationship between interest  
6 rates and risk premiums during that period. On page 52 of his KU Direct Testimony,  
7 Mr. McKenzie calculated the risk premium ROE to be 11.0%.

8 **Q. Please respond to the Company witnesses' risk premium analysis.**

9 A. Generally, the bond yield plus risk premium approach is imprecise and can only  
10 provide very general guidance on the current authorized ROE for a regulated electric  
11 utility. Risk premiums can change substantially over time and with varying risk  
12 perceptions of investors. As such, this approach is a "blunt instrument", if you will,  
13 for estimating the ROE in regulated proceedings. In my view, a properly formulated  
14 DCF model using current stock prices and growth forecasts is far more reliable and  
15 accurate than the bond yield plus risk premium approach, which relies on an  
16 historical risk premium analysis over a certain period of time.

17  
18 Furthermore, Mr. McKenzie's 11.0% risk premium ROE was inflated by using a  
19 forecasted utility bond yield of 6.28%. This bond yield is grossly overstated and  
20 exceeds the August 2017 average Mergent utility bond yield of 3.92% by 236 basis  
21 points, or 2.36%. Looking at this another way, Mr. McKenzie's forecasted 6.28%  
22 utility bond yield is 60% higher than the current utility bond yield. I strongly

1 recommend that the Commission reject this unreasonable forecasted bond yield used  
2 by Mr. McKenzie.

3 **Expected Earnings Approach**

4 **Q. Beginning on page 64 of his Direct Testimony, Mr. McKenzie presented an**  
5 **expected earnings approach based on expected returns on equity using Value**  
6 **Line's rates of return on common equity for electric utilities over its 2020 - 2022**  
7 **forecast horizon. Is this a reasonable method for estimating the current**  
8 **required return on equity in this proceeding?**

9 A. No. The Commission should not rely on forecasted utility ROEs for 2020 - 2022 for  
10 the same reasons that it should not rely on interest rate forecasts. These forecasted  
11 ROEs have little value in today's market, especially considering that current DCF  
12 returns are significantly lower than these forecasts, which range from 11.5% to  
13 11.8%. Moreover, recent allowed ROEs for electric utilities averaged about 9.77%  
14 in 2016. The expected ROEs presented by Mr. McKenzie are so far removed from  
15 recent allowed returns that the Commission should reject them out of hand.

16 **Flotation Costs**

17 **Q. Beginning on page 67 of his Direct Testimony, Mr. McKenzie discussed flotation**  
18 **costs. Are flotation costs a legitimate consideration for the Commission's**  
19 **determination of ROE in this proceeding?**

20 A. No. Mr. McKenzie recommended that the Commission consider adding an adjustment  
21 of 25 basis points to recognize flotation costs. A flotation cost adjustment attempts to  
22 recognize and collect the costs of issuing common stock. Such costs typically include  
23 legal, accounting, and printing costs as well as well as broker fees and discounts.

24

1 In my opinion, it is likely that flotation costs are already accounted for in current stock  
2 prices and that adding an adjustment for flotation costs amounts to double counting. A  
3 DCF model using current stock prices should already account for investor expectations  
4 regarding the collection of flotation costs. Multiplying the dividend yield by a 4%  
5 flotation cost adjustment, for example, essentially assumes that the current stock price is  
6 wrong and that it must be adjusted downward to increase the dividend yield and the  
7 resulting cost of equity. This is an appropriate assumption regarding investor  
8 expectations. Current stock prices most likely already account for flotation costs, to the  
9 extent that such costs are even accounted for by investors.

#### 10 Non-Utility Benchmark

11 **Q. Beginning of page 73 of his Direct Testimony, Mr. McKenzie presented the**  
12 **results of a low-risk non-utility DCF model. Is it appropriate to use a group of**  
13 **unregulated companies to estimate a fair return on equity for LGE and KU?**

14 A. No. Mr. McKenzie's use of unregulated non-utility companies to estimate a fair rate  
15 of return for LGE and KU is completely inappropriate and should be rejected by the  
16 Commission.

17  
18 Utilities have protected markets, e.g. service territories, and may increase the prices  
19 they charge in the face of falling demand or loss of customers. This is contrary to  
20 competitive, unregulated companies who often lower their prices when demand for  
21 their products decline. Obviously, the non-utility companies face risks that a lower  
22 risk electric company like KPC does not face. As a consequence, non-utility  
23 companies will have higher required returns from their shareholders. The average  
24 DCF results for Mr. McKenzie's non-utility group range from 10.4% - 11.5%. This

1 is substantially greater than the utility proxy group DCF results for both myself and  
2 Mr. McKenzie and shows that investors expect higher return for unregulated  
3 companies.

4

5 Although Mr. McKenzie stated that he did not directly consider the non-utility group  
6 DCF results in arriving at this recommendation, he stated that it was a “relevant  
7 consideration in evaluating a fair ROE for the Company,” (McKenzie Direct  
8 Testimony, page 73. Lines 8 - 11). I disagree. The relevant consideration should be  
9 the DCF results for the utility proxy group that I employed in my analysis.

10 **Q. Does this complete your Direct Testimony?**

11 **A. Yes.**

**AFFIDAVIT**

STATE OF GEORGIA        )

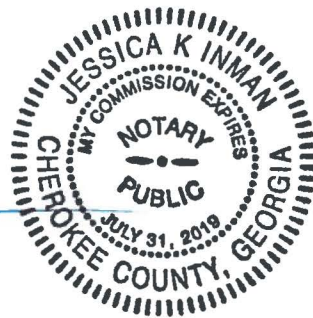
COUNTY OF FULTON        )

RICHARD A. BAUDINO, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.

*Richard A. Baudino*  
Richard A. Baudino

Sworn to and subscribed before me on this  
2nd day of October 2017.

*Jessica K. Inman*  
\_\_\_\_\_  
Notary Public



**COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**ELECTRONIC APPLICATION OF KENTUCKY )  
POWER COMPANY FOR (1) A GENERAL )  
ADJUSTMENT OF ITS RATES FOR ELECTRIC )  
SERVICE; (2) AN ORDER APPROVING ITS 2017 )  
ENVIRONMENTAL COMPLIANCE PLAN; )  
(3) AN ORDER APPROVING ITS TARIFFS )  
AND RIDERS; (4) AN ORDER APPROVING )  
ACCOUNTING PRACTICES TO ESTABLISH )  
REGULATORY ASSETS AND LIABILITIES; AND )  
(5) AN ORDER GRANTING ALL OTHER )  
REQUIRED APPROVALS AND RELIEF )**

**CASE NO. 2017-00179**

**EXHIBITS  
OF  
RICHARD A. BAUDINO**

**ON BEHALF OF**

**KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.**

**J. KENNEDY AND ASSOCIATES, INC.  
ROSWELL, GEORGIA**

**OCTOBER 3, 2017**



EXHIBIT \_\_ (RAB-1)

## **RESUME OF RICHARD A. BAUDINO**

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### **EDUCATION**

**New Mexico State University, M.A.**

Major in Economics

Minor in Statistics

**New Mexico State University, B.A.**

Economics

English

Thirty-two years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

### **REGULATORY TESTIMONY**

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies

Electric, Gas, and Water Utility Cost Allocation and Rate Design

Revenue Requirements

Gas and Electric industry restructuring and competition

Fuel cost auditing

Ratemaking Treatment of Generating Plant Sale/Leasebacks

## RESUME OF RICHARD A. BAUDINO

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### EXPERIENCE

1989 to

**Present:** Kennedy and Associates: **Director of Consulting, Consultant** - Responsible for consulting assignments in revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

1982 to

**1989:** New Mexico Public Service Commission Staff: **Utility Economist** - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

### CLIENTS SERVED

#### Regulatory Commissions

Louisiana Public Service Commission  
Georgia Public Service Commission  
New Mexico Public Service Commission

#### Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System	PSI Industrial Group
Air Products and Chemicals, Inc.	Large Power Intervenors (Minnesota)
Arkansas Electric Energy Consumers	Tyson Foods
Arkansas Gas Consumers	West Virginia Energy Users Group
AK Steel	The Commercial Group
Armco Steel Company, L.P.	Wisconsin Industrial Energy Group
Assn. of Business Advocating Tariff Equity	South Florida Hospital and Health Care Assn.
Atmos Cities Steering Committee	PP&L Industrial Customer Alliance
Canadian Federation of Independent Businesses	Philadelphia Area Industrial Energy Users Gp.
CF&I Steel, L.P.	West Penn Power Intervenors
Cities of Midland, McAllen, and Colorado City	Duquesne Industrial Intervenors
Climax Molybdenum Company	Met-Ed Industrial Users Gp.
Cripple Creek & Victor Gold Mining Co.	Penelec Industrial Customer Alliance
General Electric Company	Penn Power Users Group
Holcim (U.S.) Inc.	Columbia Industrial Intervenors
IBM Corporation	U.S. Steel & Univ. of Pittsburg Medical Ctr.
Industrial Energy Consumers	Multiple Intervenors
Kentucky Industrial Utility Consumers	Maine Office of Public Advocate
Kentucky Office of the Attorney General	Missouri Office of Public Counsel
Lexington-Fayette Urban County Government	University of Massachusetts - Amherst
Large Electric Consumers Organization	WCF Hospital Utility Alliance
Newport Steel	West Travis County Public Utility Agency
Northwest Arkansas Gas Consumers	Steering Committee of Cities Served by Oncor
Maryland Energy Group	Utah Office of Consumer Services
Occidental Chemical	Healthcare Council of the National Capital Area
	Vermont Department of Public Service

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of October 2017**

<b>Date</b>	<b>Case</b>	<b>Jurisdict.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jomada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of October 2017**

<b>Date</b>	<b>Case</b>	<b>Jurisdic.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.

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09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

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8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343- 000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042 -000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co., Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.

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1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania-American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenors	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Cost of debt.



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10/99	R-00994782	PA	Peoples Industrial Intervenors	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenors	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD & United States	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

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11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and HealthCare Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

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03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T Users Group	WV	West Virginia Energy Users Group	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

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07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation

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03/10	09-1352-	WV E-42T	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR- 09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E- GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009- 2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010- 2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010- 2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010- 2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010- 2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010- 2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699- E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design
04/11	R-2010- 2214415	PA	Central Pen Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011- 2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate

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08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Coming Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co.	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

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08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

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2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study

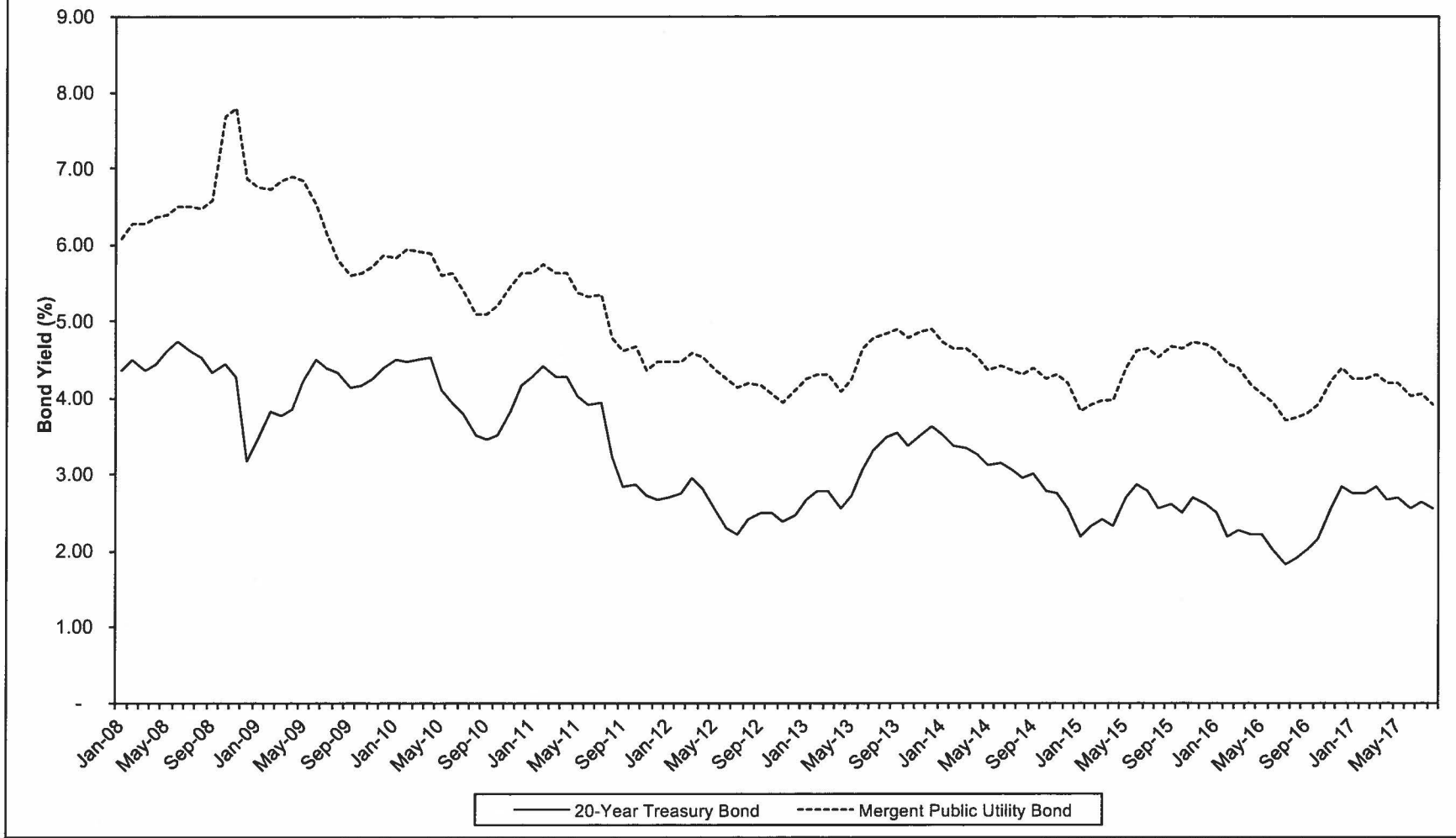


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As of October 2017**

<b>Date</b>	<b>Case</b>	<b>Jurisdic.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
05/17	R-2017-2586783	PA	Philadelphia Industrial and Commercial Gas Users Gp.	Philadelphia Gas Works	Cost and revenue allocation, rate design, Interruptible tariffs
08/17	R-2017-2595853	PA	AK Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design
8/17	17-3112-INV	VT	Vt. Dept. of Pubic Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
9/17	4220-UR-123	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
10/17	2017-00179	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity, cost of short-term debt

**EXHIBIT \_\_ (RAB-2)**

### HISTORICAL BOND YIELDS AVERAGE PUBLIC UTILITY BOND VS 20-YEAR TREASURY BOND



**EXHIBIT \_\_ (RAB-3)**

**PROXY GROUP**  
**AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17
<b>Alliant Energy</b>	High Price (\$)	40.320	40.220	41.710	42.190	41.660	43.230
	Low Price (\$)	38.240	39.210	38.950	40.160	39.360	40.500
	Avg. Price (\$)	39.280	39.715	40.330	41.175	40.510	41.865
	Dividend (\$)	0.315	0.315	0.315	0.315	0.315	0.315
	Mo. Avg. Div.	3.21%	3.17%	3.12%	3.06%	3.11%	3.01%
	6 mos. Avg.	3.11%					
<b>Ameren Corp.</b>	High Price (\$)	56.570	55.680	57.090	57.210	56.670	60.790
	Low Price (\$)	53.480	54.030	53.720	54.380	53.540	56.160
	Avg. Price (\$)	55.025	54.855	55.405	55.795	55.105	58.475
	Dividend (\$)	0.440	0.440	0.440	0.440	0.440	0.440
	Mo. Avg. Div.	3.20%	3.21%	3.18%	3.15%	3.19%	3.01%
	6 mos. Avg.	3.16%					
<b>American Electric Power</b>	High Price (\$)	68.250	68.460	71.910	72.970	70.810	74.290
	Low Price (\$)	64.810	66.500	66.930	69.190	68.110	70.080
	Avg. Price (\$)	66.530	67.480	69.420	71.080	69.460	72.185
	Dividend (\$)	0.590	0.590	0.590	0.590	0.590	0.590
	Mo. Avg. Div.	3.55%	3.50%	3.40%	3.32%	3.40%	3.27%
	6 mos. Avg.	3.41%					
<b>CMS Energy Corp.</b>	High Price (\$)	45.550	45.850	47.700	48.370	47.020	48.910
	Low Price (\$)	43.610	44.360	44.750	46.020	45.340	45.980
	Avg. Price (\$)	44.580	45.105	46.225	47.195	46.180	47.445
	Dividend (\$)	0.333	0.333	0.333	0.333	0.333	0.333
	Mo. Avg. Div.	2.99%	2.95%	2.88%	2.82%	2.88%	2.81%
	6 mos. Avg.	2.89%					
<b>Dominion Energy</b>	High Price (\$)	79.360	78.460	81.300	81.650	77.570	80.670
	Low Price (\$)	74.590	76.250	76.390	76.170	75.400	76.560
	Avg. Price (\$)	76.975	77.355	78.845	78.910	76.485	78.615
	Dividend (\$)	0.755	0.755	0.755	0.755	0.755	0.755
	Mo. Avg. Div.	3.92%	3.90%	3.83%	3.83%	3.95%	3.84%
	6 mos. Avg.	3.88%					
<b>DTE Energy Co.</b>	High Price (\$)	102.960	105.810	109.890	111.350	108.000	112.580
	Low Price (\$)	99.450	100.970	103.280	105.130	104.190	106.160
	Avg. Price (\$)	101.205	103.390	106.585	108.240	106.095	109.370
	Dividend (\$)	0.825	0.825	0.825	0.825	0.825	0.825
	Mo. Avg. Div.	3.26%	3.19%	3.10%	3.05%	3.11%	3.02%
	6 mos. Avg.	3.12%					

**PROXY GROUP**  
**AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17
<b>Duke Energy Corp.</b>	High Price (\$)	83.590	83.350	86.010	87.490	85.330	87.950
	Low Price (\$)	80.020	81.270	81.850	83.590	82.720	84.650
	Avg. Price (\$)	81.805	82.310	83.930	85.540	84.025	86.300
	Dividend (\$)	0.855	0.855	0.855	0.855	0.855	0.890
	Mo. Avg. Div.	4.18%	4.16%	4.07%	4.00%	4.07%	4.13%
	6 mos. Avg.	4.10%					
<b>Eversource Energy</b>	High Price (\$)	60.360	60.500	62.190	63.340	61.560	63.670
	Low Price (\$)	57.280	58.270	58.110	60.520	59.550	60.370
	Avg. Price (\$)	58.820	59.385	60.150	61.930	60.555	62.020
	Dividend (\$)	0.475	0.475	0.475	0.475	0.475	0.475
	Mo. Avg. Div.	3.23%	3.20%	3.16%	3.07%	3.14%	3.06%
	6 mos. Avg.	3.14%					
<b>NextEra Energy, Inc.</b>	High Price (\$)	133.280	134.330	141.830	144.870	146.880	151.280
	Low Price (\$)	127.780	127.090	132.780	138.150	138.000	145.380
	Avg. Price (\$)	130.530	130.710	137.305	141.510	142.440	148.330
	Dividend (\$)	0.983	0.983	0.983	0.983	0.983	0.983
	Mo. Avg. Div.	3.01%	3.01%	2.86%	2.78%	2.76%	2.65%
	6 mos. Avg.	2.85%					
<b>PPL Corp.</b>	High Price (\$)	37.950	38.320	40.100	40.200	38.840	39.810
	Low Price (\$)	35.820	36.910	37.400	38.440	37.190	38.350
	Avg. Price (\$)	36.885	37.615	38.750	39.320	38.015	39.080
	Dividend (\$)	0.395	0.395	0.395	0.395	0.395	0.395
	Mo. Avg. Div.	4.28%	4.20%	4.08%	4.02%	4.16%	4.04%
	6 mos. Avg.	4.13%					
<b>Public Svc. Enterprise Gp.</b>	High Price (\$)	46.080	45.940	45.270	45.800	45.360	47.470
	Low Price (\$)	43.770	43.920	42.470	42.790	41.670	44.730
	Avg. Price (\$)	44.925	44.930	43.870	44.295	43.515	46.100
	Dividend (\$)	0.430	0.430	0.430	0.430	0.430	0.430
	Mo. Avg. Div.	3.83%	3.83%	3.92%	3.88%	3.95%	3.73%
	6 mos. Avg.	3.86%					
<b>SCANA Corp.</b>	High Price (\$)	70.940	67.870	68.440	71.280	67.990	68.350
	Low Price (\$)	64.200	64.790	64.480	66.810	60.000	59.340
	Avg. Price (\$)	67.570	66.330	66.460	69.045	63.995	63.845
	Dividend (\$)	0.613	0.613	0.613	0.613	0.613	0.613
	Mo. Avg. Div.	3.63%	3.70%	3.69%	3.55%	3.83%	3.84%
	6 mos. Avg.	3.71%					

**PROXY GROUP**  
**AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17
<b>Sempra Energy</b>	High Price (\$)	113.150	113.960	116.960	117.970	114.950	119.660
	Low Price (\$)	107.890	107.860	110.030	112.110	110.350	112.850
	Avg. Price (\$)	110.520	110.910	113.495	115.040	112.650	116.255
	Dividend (\$)	0.823	0.823	0.823	0.823	0.823	0.823
	Mo. Avg. Div.	2.98%	2.97%	2.90%	2.86%	2.92%	2.83%
	6 mos. Avg.	2.91%					
<b>Southern Company</b>	High Price (\$)	51.470	50.480	50.930	51.970	48.050	50.080
	Low Price (\$)	49.300	49.010	49.150	47.870	46.710	47.690
	Avg. Price (\$)	50.385	49.745	50.040	49.920	47.380	48.885
	Dividend (\$)	0.560	0.560	0.580	0.580	0.580	0.580
	Mo. Avg. Div.	4.45%	4.50%	4.64%	4.65%	4.90%	4.75%
	6 mos. Avg.	4.65%					
<b>Vectren Corp.</b>	High Price (\$)	59.030	60.470	61.870	62.790	60.240	67.170
	Low Price (\$)	55.060	58.150	58.030	58.240	57.480	59.450
	Avg. Price (\$)	57.045	59.310	59.950	60.515	58.860	63.310
	Dividend (\$)	0.420	0.420	0.420	0.420	0.420	0.420
	Mo. Avg. Div.	2.95%	2.83%	2.80%	2.78%	2.85%	2.65%
	6 mos. Avg.	2.81%					
<b>Monthly Avg. Dividend Yield</b>		3.51%	3.49%	3.44%	3.39%	3.48%	3.38%
<b>6-month Avg. Dividend Yield</b>		3.45%					

Source: Yahoo! Finance

EXHIBIT \_\_ (RAB-4)



**PROXY GROUP**  
**DCF Growth Rate Analysis**

Exhibit No. \_\_\_(RAB-4)  
Page 1 of 1

Company	(1) Value Line DPS	(2) Value Line EPS	(3) Value Line B x R	(4) Zacks	(5) First Call/ IBES
Alliant Energy	4.50%	6.00%	5.00%	5.50%	6.90%
Ameren Corp.	4.50%	6.00%	4.00%	6.50%	6.10%
American Elec Pwr	5.00%	4.00%	4.50%	5.40%	2.87%
CMS Energy Corp.	6.50%	6.50%	5.50%	7.00%	7.52%
Dominion Energy	8.50%	5.50%	1.50%	6.00%	3.46%
DTE Energy Co.	7.00%	6.00%	4.00%	5.90%	4.59%
Duke Energy Corp.	4.50%	4.50%	2.00%	4.00%	2.65%
Eversource Energy	5.50%	6.50%	4.50%	6.00%	5.81%
NextEra Energy, Inc.	9.50%	7.00%	5.00%	7.40%	7.34%
PPL Corp.	3.50%	NMF	4.00%	5.00%	0.04%
Pub Sv Enterprise Grp.	5.00%	1.00%	4.50%	2.40%	0.57%
SCANA Corp.	5.00%	4.00%	4.50%	4.70%	4.75%
Sempra Energy	8.50%	8.00%	5.00%	8.50%	7.80%
Southern Company	3.50%	3.50%	3.00%	4.30%	3.22%
Vectren Corp.	<u>4.50%</u>	<u>6.50%</u>	<u>5.00%</u>	<u>5.50%</u>	<u>5.50%</u>
Averages	5.70%	5.36%	4.13%	5.61%	4.61%
Median Values	5.00%	6.00%	4.50%	5.50%	4.75%

**Sources:** Value Line Investment Survey, July 28, Aug. 18, and Sept. 15, 2017  
Yahoo! Finance for IBES growth rates retrieved September 12, 2017  
Zacks growth rates retrieved September 12, 2017

<b>PROXY GROUP</b>					
<b>DCF RETURN ON EQUITY</b>					
	(1) Value Line <u>Dividend Gr.</u>	(2) Value Line <u>Earnings Gr.</u>	(3) Zack's <u>Earning Gr.</u>	(4) IBES <u>Earning Gr.</u>	(5) Average of <u>All Gr. Rates</u>
<b>Method 1:</b>					
Dividend Yield	3.45%	3.45%	3.45%	3.45%	3.45%
Average Growth Rate	5.70%	5.36%	5.61%	4.61%	5.32%
Expected Div. Yield	<u>3.55%</u>	<u>3.54%</u>	<u>3.54%</u>	<u>3.53%</u>	<u>3.54%</u>
<b>DCF Return on Equity</b>	<b>9.25%</b>	<b>8.90%</b>	<b>9.15%</b>	<b>8.14%</b>	<b>8.86%</b>
<b>Method 2:</b>					
Dividend Yield	3.45%	3.45%	3.45%	3.45%	3.45%
Median Growth Rate	5.00%	6.00%	5.50%	4.75%	5.31%
Expected Div. Yield	<u>3.53%</u>	<u>3.55%</u>	<u>3.54%</u>	<u>3.53%</u>	<u>3.54%</u>
<b>DCF Return on Equity</b>	<b>8.53%</b>	<b>9.55%</b>	<b>9.04%</b>	<b>8.28%</b>	<b>8.85%</b>

**EXHIBIT \_\_ (RAB-5)**

**PROXY GROUP**  
**Capital Asset Pricing Model Analysis**

**20-Year Treasury Bond, Value Line Beta**

<u>Line No.</u>		<u>Value Line</u>
1	Market Required Return Estimate	9.45%
2	Risk-free Rate of Return, 20-Year Treasury Bond	
3	Average of Last Six Months	2.55%
4	Risk Premium	
5	(Line 1 minus Line 3)	6.90%
6	Comparison Group Beta	0.67
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	4.60%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	7.15%

**5-Year Treasury Bond, Value Line Beta**

1	Market Required Return Estimate	9.45%
2	Risk-free Rate of Return, 5-Year Treasury Bond	
3	Average of Last Six Months	1.78%
4	Risk Premium	
5	(Line 1 minus Line 3)	7.67%
6	Comparison Group Beta	0.67
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	5.12%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	6.90%

**PROXY GROUP**  
**Capital Asset Pricing Model Analysis**

**Supporting Data for CAPM Analyses**

20 Year Treasury Bond Data

	<u>Avg. Yield</u>
March-17	2.83%
April-17	2.67%
May-17	2.70%
June-17	2.54%
July-17	2.65%
August-17	<u>2.55%</u>
6 month average	2.66%

Source: www.federalreserve.gov

5 Year Treasury Bond Data

	<u>Avg. Yield</u>
March-17	2.01%
April-17	1.82%
May-17	1.84%
June-17	1.77%
July-17	1.87%
August-17	<u>1.78%</u>
6 month average	1.85%

Value Line Market Return Data:

Forecasted Data:

Value Line Median Growth Rates:	
Earnings	10.50%
Book Value	<u>7.50%</u>
Average	9.00%
Average Dividend Yield	<u>0.87%</u>
Estimated Market Return	9.91%
Value Line Projected 3-5 Yr. Median Annual Total Return	9.00%
Average of Projected Mkt. Returns	9.45%

Source: Value Line Investment Survey  
for Windows retrieved Sept. 21, 2017

Comparison Group Betas:

	<u>Value Line</u>
Alliant Energy	0.70
Ameren Corp.	0.65
American Elec Pwr	0.65
CMS Energy Corp.	0.65
Dominion Energy	0.65
DTE Energy Co.	0.65
Duke Energy Corp.	0.60
Eversource Energy	0.65
NextEra Energy, Inc.	0.65
PPL Corp.	0.70
Pub Sv Enterprise Grp.	0.70
SCANA Corp.	0.65
Sempra Energy	0.80
Southern Company	0.55
Vectren Corp.	0.75
Average	0.67

Source: Value Line Investment Survey

**EXHIBIT \_\_ (RAB-6)**

**PROXY GROUP**  
**Capital Asset Pricing Model Analysis**  
**Historic Market Premium**

	<u>Geometric Mean</u>	<u>Arithmetic Mean</u>	<u>Adjusted Arithmetic Mean</u>
Long-Term Annual Return on Stocks	10.00%	12.00%	
Long-Term Annual Income Return on Long-Term Treas. Bonds	<u>5.00%</u>	<u>5.00%</u>	
Historical Market Risk Premium	5.00%	7.00%	5.97%
Comparison Group Beta, Value Line	<u>0.67</u>	<u>0.67</u>	<u>0.67</u>
Beta * Market Premium	3.33%	4.67%	3.98%
Current 20-Year Treasury Bond Yield	<u>2.66%</u>	<u>2.66%</u>	<u>2.66%</u>
<b>CAPM Cost of Equity, Value Line Beta</b>	<b><u>5.99%</u></b>	<b><u>7.32%</u></b>	<b><u>6.64%</u></b>

Source: 2017 SBI Yearbook, Stocks, Bonds, Bills, and Inflation, Duff and Phelps; pp. 2-6, 6-17, 10-30

**GAS UTILITIES DOCKET NO. 10580**

**STATEMENT OF INTENT TO  
CHANGE THE RATE CGS AND  
RATE PT RATES OF ATMOS  
PIPELINE-TEXAS**

**§  
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**BEFORE THE  
RAILROAD COMMISSION  
OF TEXAS**

**CROSS-REBUTTAL TESTIMONY**

**OF**

**RICHARD A. BAUDINO**

**ON BEHALF OF**

**ATMOS CITIES STEERING COMMITTEE**

**APRIL 7, 2017**

**GAS UTILITIES DOCKET NO. 10580**

**STATEMENT OF INTENT TO  
CHANGE THE RATE CGS AND  
RATE PT RATES OF ATMOS  
PIPELINE-TEXAS**

§  
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§

**BEFORE THE  
RAILROAD COMMISSION  
OF TEXAS**

**CROSS-REBUTTAL TESTIMONY OF  
RICHARD A. BAUDINO**

1 **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.**

2 A. My name is Richard A. Baudino. I am a Consultant with J. Kennedy and Associates,  
3 Inc., an economic consulting firm specializing in utility ratemaking and planning  
4 issues. My business address is 570 Colonial Park Drive, Suite 305, Roswell, Georgia.

5 **Q. ARE YOU THE SAME RICHARD A. BAUDINO WHO PRESENTED  
6 DIRECT TESTIMONY IN THIS PROCEEDING?**

7 A. Yes, I am.

8 **Q. WHAT IS THE PURPOSE OF YOUR CROSS-REBUTTAL TESTIMONY?**

9 A. The purpose of my cross-rebuttal testimony is to respond to Mr. Frank Tomicek,  
10 witness for the Railroad Commission of Texas ("Commission") Staff.

11 **Q. PLEASE SUMMARIZE THE MAIN POINTS TO WHICH YOU WILL  
12 RESPOND REGARDING MR. TOMICEK'S DIRECT TESTIMONY.**

13 A. I will address Mr. Tomicek's assessment of risk as it relates to Atmos Pipeline –  
14 Texas ("APT" or "Company"), his recommended return on equity ("ROE"), and his  
15 recommended capital structure.



1 **Q. PLEASE SUMMARIZE THE PROXY GROUPS USED BY MR. TOMICEK IN**  
2 **HIS ROE ANALYSES.**

3 A. Mr. Tomicek used two proxy groups to estimate the ROE for APT, one consisting of  
4 gas distribution companies and one consisting of pipeline master limited partnerships  
5 (“MLPs”). On page 11 of his Direct Testimony, Mr. Tomicek stated that his use of  
6 proxy groups “is also consistent with the long-established legal principle in  
7 ratemaking, that a utility should be allowed the opportunity to earn a rate of return  
8 commensurate with other investment opportunities of comparable risk.”  
9 Mr. Tomicek further testified on page 14 of his Direct Testimony that “Staff  
10 continues to regard consideration of a pipeline transport proxy group as valid in  
11 evaluating commensurate risk for an equity return; however, in fully considering the  
12 scope of APT’s operations and its organizational relationship within Atmos Energy,  
13 these exists a substantial basis for assessing APT’s investment risk in terms of that for  
14 regulated distribution utilities.”

15           Regarding Mr. Hevert’s use of pipeline MLPs as a proxy group, Mr. Tomicek  
16 testified on page 13 of his Direct Testimony that Mr. Hevert “has chosen a group of  
17 six companies that Staff agrees meet reasonable criteria for inclusion since all six  
18 receive analyst coverage, share similar stable credit ratings, and derive their revenues  
19 primarily from gas transportation operations.”

20 **Q. PLEASE DISCUSS YOUR CONCLUSIONS WITH RESPECT TO**  
21 **MR. TOMICEK’S USE OF A PROXY GROUP CONSISTING OF**  
22 **INTERSTATE PIPELINE MLPs TO EVALUATE ROE FOR APT.**

23 A. Mr. Tomicek’s use of an interstate pipeline proxy group suffers from the same basic  
24 underlying flaw as that of Mr. Hevert, which is that APT’s risk is in no way similar to

1 that of interstate pipeline companies. I discussed in detail in my Direct Testimony  
2 why this is the case. APT is a low risk intrastate pipeline company whose ROE  
3 should be estimated using a proxy group consisting of gas distribution companies  
4 only.

5 Mr. Tomicek's statement on page 13 regarding "similar stable credit ratings"  
6 of Mr. Hevert's interstate pipeline group is irrelevant when compared to the risk and  
7 credit characteristics of APT. Table 2 in my Direct Testimony demonstrates that the  
8 interstate pipeline group used by Mr. Hevert is far riskier than APT's low risk  
9 pipeline operations. Mr. Tomicek provided no risk analysis whatsoever that would  
10 support using his higher risk pipeline group to estimate APT's ROE.

11 Finally, contrary to Mr. Tomicek's testimony, using a proxy group of  
12 interstate pipeline MLPs is wholly inconsistent with the economic principle of setting  
13 the allowed ROE consistent with investment opportunities of comparable risk. I  
14 demonstrated in my Direct Testimony that interstate pipeline companies have  
15 substantially greater risk than APT's low risk pipeline operations. Using  
16 Mr. Tomicek's interstate pipeline proxy group would result in an excessive ROE for  
17 APT.

18 **Q. DID MR. TOMICEK CITE ANY CREDIT RATING AGENCY REPORTS IN**  
19 **SUPPORT OF HIS DECISION TO USE A RISKY INTERSTATE PIPELINE**  
20 **GROUP IN HIS ROE ANALYSIS?**

21 **A.** No. Mr. Tomicek did not cite to any credit rating agency reports in support of his  
22 decision to use an interstate pipeline MLP proxy group. In this respect, his analysis  
23 suffers the same defect as Mr. Hevert's. As I stated in my Direct Testimony,

1 Moody's and Standard and Poor's both described APT's pipeline operations as low  
2 risk.

3 **Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION**  
4 **REGARDING MR. TOMICEK'S USE OF AN INTERSTATE PIPELINE**  
5 **PROXY GROUP TO ESTIMATE THE ROE FOR APT?**

6 A. I recommend that the Commission reject Mr. Tomicek's interstate pipeline proxy  
7 group because it is in no way reflective of a comparable risk group of companies for  
8 purposes of estimating the ROE for APT.

9 **Q. ON PAGE 8 OF HIS DIRECT TESTIMONY, MR. TOMICEK AGREED**  
10 **WITH USING APT'S PROPOSED CAPITAL STRUCTURE. PLEASE**  
11 **RESPOND TO MR. TOMICEK'S RECOMMENDATION.**

12 A. I disagree with using APT's proposed capital structure for the reasons set forth in my  
13 Direct Testimony. APT's proposed equity ratio is excessive and its use would burden  
14 Texas ratepayers with unnecessarily high rate levels.

15 **Q. EXHIBIT FMT-1 PRESENTS THE AVERAGE CAPITAL STRUCTURE OF**  
16 **MR. TOMICEK'S PROXY GROUP, WHICH INCLUDES WGL HOLDINGS.**  
17 **SHOULD WGL HOLDINGS HAVE BEEN INCLUDED IN MR. TOMICEK'S**  
18 **LDC PROXY GROUP?**

19 A. No. WGL Holdings is currently involved in a merger with AltaGas Ltd. in which  
20 WGL Holdings will be purchased for roughly \$6.4 billion, according to the Value  
21 Line Investment Survey's March 3, 2017 report. Companies involved in mergers  
22 should not be included in a proxy group for purposes of estimating the ROE. This is  
23 because the stock price of such companies will have been significantly affected by the

1 terms of the proposed merger and, in WGL Holdings' case, the purchased price of  
 2 \$88.25 per share that is part of the merger proposal. Value Line suspended the  
 3 Timeliness and Technical rankings for WGL Holdings in response to the merger  
 4 proposal. Thus, the current stock price for WGL Holdings is no longer affected by  
 5 normal market forces and cannot be included in a proxy group for purposes of  
 6 estimating the ROE for APT.

7 Cross-Rebuttal Table 1 below shows the average capital structure for  
 8 Mr. Tomicek's LDC proxy group excluding WGL Holdings. I also calculated the  
 9 average excluding Chesapeake Utilities, which has an excessive common equity ratio  
 10 that is an outlier and is not appropriate for ratemaking. I also excluded Chesapeake  
 11 Utilities from the LDC group average in my Direct Testimony.

<b>Cross-Rebuttal Table 1</b>		
<b>Average Capital Structure of LDC Proxy Group Companies</b>		
<b>2014 - 2016</b>		
<b>Company</b>	<b>Long-Term Debt</b>	<b>Common Equity</b>
Chesapeake Utilities	30.84%	69.16%
New Jersey Resources	50.40%	49.60%
Northwest Nat. Gas	41.95%	58.05%
ONE Gas	41.88%	58.12%
South Jersey Industries	39.69%	60.31%
Southwest Gas	45.38%	54.62%
Spire	<u>48.95%</u>	<u>51.05%</u>
<b>Company Grouping Mean</b>	<b>42.73%</b>	<b>57.27%</b>
<b>Company Grouping Mean excl. Chesapeake</b>	<b>44.71%</b>	<b>55.29%</b>

1 APT's proposed common equity ratio of nearly 60% is at the high end of  
2 Mr. Tomicek's LDC proxy group. Further, the 2016 common equity ratios I  
3 presented in Table 7 of my Direct Testimony support a much lower common equity  
4 ratio for APT.

5 **Q. REGARDING TABLE 7 IN YOUR DIRECT TESTIMONY, DID YOU**  
6 **DISCOVER A CORRECTION THAT IS REQUIRED?**

7 A. Yes. My Table 7 inadvertently included WGL Holdings. A corrected Table 7 is  
8 presented below. This correction did not significantly affect the proxy group  
9 averages and does not change my recommended capital structure for APT.

<b>TABLE 7 CORRECTED</b>	
<b>GAS UTILITY GROUP</b>	
<b>2016 COMMON EQUITY RATIOS</b>	
Atmos Energy	61.3%
Chesapeake Util.	75.0%
New Jersey Resources	52.3%
Northwest Natural Gas	57.0%
South Jersey Industries	61.0%
Southwest Gas	51.0%
Spire Inc.	49.1%
UGI Corp.	43.0%
Average	56.2%
Avg. Excl. Chesapeake	53.5%
Source: Value Line Investment Survey	

1 **Q. ON PAGE 20 OF HIS DIRECT TESTIMONY, MR. TOMICEK PRESENTED**  
2 **THE RESULTS OF HIS DISCOUNTED CASH FLOW (“DCF”) ANALYSES.**  
3 **ARE THE MEAN RESULTS OF HIS LDC PROXY GROUP CONSISTENT**  
4 **WITH THE DCF RESULTS FROM YOUR GAS UTILITY PROXY GROUP?**

5 A. Yes. The mean result from Mr. Tomicek’s LDC proxy group was 8.72%, which is  
6 quite close to the DCF results from my gas utility proxy group.

7 **Q. HOW DID MR. TOMICEK EMPLOY THE DCF AND CAPITAL ASSET**  
8 **PRICING MODEL (“CAPM”) RESULTS FROM HIS LDC PROXY GROUP**  
9 **IN HIS ROE RECOMMENDATION?**

10 A. Mr. Tomicek averaged the mean and high values from his DCF and CAPM analyses,  
11 which resulted in an average ROE of 9.49% shown on Table 4, page 27 of his Direct  
12 Testimony. He then weighted this result by 84.825% in his final ROE  
13 recommendation. The remaining 15.175% consisted of the ROE results from his  
14 analysis of the interstate pipeline proxy group. Mr. Tomicek’s final ROE  
15 recommendation is 10.0%.

16 **Q. DO YOU AGREE WITH MR. TOMICEK’S AVERAGING OF THE MEAN**  
17 **AND HIGH VALUES FOR HIS DCF AND CAPM ANALYSES, AS SHOWN**  
18 **IN HIS TABLE 4?**

19 A. No, not at all. Mr. Tomicek provided no analysis to support giving 50% weight to the  
20 high values from his DCF and CAPM analyses. Mean values should be given 100%  
21 weighting in the final analysis, given APT’s low risk pipeline operations. Giving  
22 Mr. Tomicek’s high end DCF values 50% weighting overstates the investor required  
23 ROE for APT.

1 **Q. SHOULD THE RESULTS FROM MR. TOMICEK'S INTERSTATE**  
2 **PIPELINE GROUP BE GIVEN ANY WEIGHT?**

3 A. No. On page 36, lines 12 through 22 of his Direct Testimony Mr. Tomicek explained  
4 the relative weightings of the ROE results from his LDC and interstate pipeline  
5 groups, concluding that this weighting "results in a blended ROE for APT which  
6 weighs appropriate relative business operational risks." This statement is incorrect.  
7 APT's low risk pipeline operations bear little, if any, resemblance to those of  
8 interstate pipeline companies. Mr. Tomicek's proposed ROE methodology overstates  
9 the investor required ROE for APT and should be rejected by the Commission.

10 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

11 A. Yes.

**GAS UTILITIES DOCKET NO. 10580**

**STATEMENT OF INTENT TO  
CHANGE THE RATE CGS AND  
RATE PT RATES OF ATMOS  
PIPELINE-TEXAS**

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§

**BEFORE THE  
RAILROAD COMMISSION  
OF TEXAS**

**DIRECT TESTIMONY**

**OF**

**RICHARD A. BAUDINO**

**ON BEHALF OF**

**ATMOS CITIES STEERING COMMITTEE**

**MARCH 22, 2017**



**DIRECT TESTIMONY OF  
RICHARD A. BAUDINO**

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**ATTACHMENTS**

A	Resume and Testimony Experience
B	Credit Rating Agency Reports (APT Response to ATM RFP No. 1-04)
C	APT Response to ACSC RFI No. 12-01
D	APT Response to TIEC RFI No. 1-09

**EXHIBITS**

RAB-1	Graph of Historical Bond Yields
RAB-2	Gas Utility Proxy Group Average Price, Dividend and Dividend Yield
RAB-3	Gas Utility Proxy Group DCF Growth Rate and Return on Equity
RAB-4	Capital Asset Pricing Model Analysis
RAB-5	Capital Asset Pricing Model Analysis – Historical Market Premium

**WORKPAPERS** – Provided on CD

**GAS UTILITIES DOCKET NO. 10580**

**STATEMENT OF INTENT TO  
CHANGE THE RATE CGS AND  
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**BEFORE THE  
RAILROAD COMMISSION  
OF TEXAS**

**DIRECT TESTIMONY OF  
RICHARD A. BAUDINO**

1

**I. INTRODUCTION AND QUALIFICATIONS**

2

**Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.**

3

A. My name is Richard A. Baudino. I am a Consultant with J. Kennedy and Associates, Inc., an economic consulting firm specializing in utility ratemaking and planning issues. My business address is 570 Colonial Park Drive, Suite 305, Roswell, Georgia.

4

5

6

**Q. ON WHOSE BEHALF ARE YOU PRESENTING TESTIMONY IN THIS PROCEEDING?**

7

8

A. I am presenting testimony on behalf of Atmos Cities Steering Committee (“ACSC”).

9

**Q. PLEASE OUTLINE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.**

10

11

A. See Attachment A.

12

**II. PURPOSE AND SCOPE**

13

**Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

14

A. The purpose of my testimony is to present my recommendations for return on equity (“ROE”), capital structure, and weighted rate of return for Atmos Pipeline–Texas (“APT” or “Company”). I will also respond to the Direct Testimonies filed by APT witnesses John Reed and Robert Hevert.

15

16

17

1 **Q. PLEASE PRESENT YOUR CONCLUSIONS AND RECOMMENDATIONS.**

2 A. My conclusions and recommendations are as follows:

3 1. I recommend a 9.0% ROE for APT in this proceeding. This recommendation  
4 is based on the results of a Discounted Cash Flow (“DCF”) model applied to a  
5 proxy group of gas distribution utilities.

6 2. APT is a low-risk intrastate pipeline supplier of natural gas. The Company  
7 simply is not comparable to interstate pipeline companies, which are much  
8 riskier than APT.

9 3. I recommend a capital structure for APT consisting of 52% common equity  
10 and 48% long-term debt.

11 4. I recommend an overall weighted cost of capital for APT of 7.54%.

12 5. Mr. Hevert’s ROE recommendation of 13.5% for APT is excessive in the  
13 extreme and should be rejected out of hand by the Railroad Commission of  
14 Texas (“Commission”).

15 6. Mr. Hevert’s proposed 59% common equity ratio for APT is also excessive  
16 and should be rejected.

17 7. The analyses presented by Mr. Reed and Mr. Hevert that attempt to show that  
18 APT is as risky, or even riskier, than interstate pipelines are fatally flawed  
19 and, most importantly, completely ignore bond rating agency evaluations of  
20 APT’s operations, which characterize these operations as low risk.

21 **III. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS**

22 **Q. MR. BAUDINO, WHAT HAS THE TREND BEEN IN LONG-TERM  
23 CAPITAL COSTS OVER THE LAST FEW YEARS?**

24 A. Generally speaking, interest rates have declined over the last few years, although they  
25 have increased since the November 2016 election. Exhibit RAB-1 presents a graphic  
26 depiction of the trend in interest rates from January 2008 through February 2017.  
27 The interest rates shown in this exhibit are for the 20-year U.S. Treasury Bond and  
28 the average public utility bond from the Mergent Bond Record. In January 2008, the  
29 average public utility bond yield was 6.08% and the 20-year Treasury Bond yield was

1 4.35%. As of February 2017, the average public utility bond yield was 4.25%,  
2 representing a decline of 183 basis points, or 1.83%, from January 2008. Likewise,  
3 the 20-year Treasury Bond stood at 2.76% in February 2017, a decline of 1.59%  
4 (159 basis points) from January 2008.

5 **Q. WAS THERE A SIGNIFICANT CHANGE IN FEDERAL RESERVE POLICY**  
6 **DURING THE HISTORICAL PERIOD SHOWN IN EXHIBIT RAB-1?**

7 A. Yes. In response to the 2007 financial crisis and severe recession that followed in  
8 December 2007, the Federal Reserve (“Fed”) undertook a series of steps to stabilize  
9 the economy, ease credit conditions, and lower unemployment and interest rates.  
10 These steps are commonly known as Quantitative Easing (“QE”) and were  
11 implemented in three distinct stages: QE1, QE2, and QE3. The Fed’s stated purpose  
12 of QE was “to support the liquidity of financial institutions and foster improved  
13 conditions in financial markets.”<sup>1</sup>

14 QE1 was implemented from November 2008 through approximately March  
15 2010. During this time, the Fed cut its key Federal Funds Rate to nearly 0% and  
16 purchased \$1.25 trillion of mortgage-backed securities and \$175 billion of agency  
17 debt purchases.

18 QE2 was implemented in November 2010 with the Fed announcing that it  
19 would purchase an additional \$600 billion of Treasury securities by the second  
20 quarter of 2011.<sup>2</sup>

21 Beginning in September 2011, the Fed initiated a “maturity extension  
22 program” in which it sold or redeemed \$667 billion of shorter-term Treasury

---

<sup>1</sup> [http://www.federalreserve.gov/monetarypolicy/bst\\_crisisresponse.htm](http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm).

<sup>2</sup> <http://www.federalreserve.gov/newsevents/press/monetary/20101103a.htm>.

1 securities and used the proceeds to buy longer-term Treasury securities. This  
2 program, also known as “Operation Twist,” was designed by the Fed to lower long-  
3 term interest rates and support the economic recovery.

4 QE3 began in September 2012 with the Fed announcing an additional bond  
5 purchasing program of \$40 billion per month of agency mortgage-backed securities.  
6 More recently, the Fed began to pare back its purchases of securities. For example,  
7 on January 29, 2014, the Fed stated that beginning in February 2014 it would reduce  
8 its purchases of long-term Treasury securities to \$35 billion per month. The Fed  
9 continued to reduce these purchases throughout the year and in a press release issued  
10 October 29, 2014, announced that it decided to close this asset purchase program in  
11 October.<sup>3</sup>

12 **Q. HAS THE FED RECENTLY INDICATED ANY IMPORTANT CHANGES TO**  
13 **ITS MONETARY POLICY?**

14 A. Yes. In March 2016, the Fed raised its target range for the federal funds rate to 1/4%  
15 to 1/2% (from 0% to 1/4%). The Fed further increased the target range to 1/2% to  
16 3/4% in a press release dated December 14, 2016, and on March 15, 2017, the Fed  
17 announced a further increase in the target range to 3/4% to 1.0%. In its press release  
18 dated March 15, 2017, the Fed stated:

19 In view of realized and expected labor market conditions and  
20 inflation, the Committee decided to raise the target range for  
21 the federal funds rate to 3/4 to 1 percent. The stance of  
22 monetary policy remains accommodative, thereby supporting  
23 some further strengthening in labor market conditions and a  
24 sustained return to 2 percent inflation.

---

<sup>3</sup> <http://www.federalreserve.gov/newsevents/press/monetary/20141029a.htm>.

1 In determining the timing and size of future adjustments to the  
2 target range for the federal funds rate, the Committee will  
3 assess realized and expected economic conditions relative to its  
4 objectives of maximum employment and 2 percent inflation.  
5 This assessment will take into account a wide range of  
6 information, including measures of labor market conditions,  
7 indicators of inflation pressures and inflation expectations, and  
8 readings on financial and international developments. The  
9 Committee will carefully monitor actual and expected inflation  
10 developments relative to its symmetric inflation goal. The  
11 Committee expects that economic conditions will evolve in a  
12 manner that will warrant gradual increases in the federal funds  
13 rate; the federal funds rate is likely to remain, for some time,  
14 below levels that are expected to prevail in the longer run.  
15 However, the actual path of the federal funds rate will depend  
16 on the economic outlook as informed by incoming data.

17 **Q. WHY IS IT IMPORTANT TO UNDERSTAND THE FED'S ACTIONS SINCE**  
18 **2007?**

19 A. The Fed's monetary policy actions since 2007 were deliberately undertaken to lower  
20 interest rates and support economic recovery. The Fed's actions have been quite  
21 successful in lowering interest rates given that the 20-year Treasury Bond yield in  
22 June 2007 was 5.29% and the public utility bond yield was 6.34%. Although the  
23 Federal Reserve has begun a program of increases in the Federal Funds rate, the U.S.  
24 economy is still in a low interest rate environment. As I will demonstrate later in my  
25 testimony, low interest rates have also significantly lowered investors' required return  
26 on equity for the stocks of regulated utilities.

1 **Q. ARE CURRENT INTEREST RATES INDICATIVE OF INVESTOR**  
2 **EXPECTATIONS REGARDING THE FUTURE DIRECTION OF INTEREST**  
3 **RATES?**

4 A. Yes. Securities markets are efficient and most likely reflect investors' expectations  
5 about future interest rates. As Dr. Roger Morin pointed out in *New Regulatory*  
6 *Finance*:

7 A considerable body of empirical evidence indicates that U.S.  
8 capital markets are efficient with respect to a broad set of  
9 information, including historical and publicly available  
10 information.<sup>4</sup>

11 Despite recent increases in interest rates, including long-term Treasury Bonds and  
12 average utility bonds, the U.S. economy continues to operate in a low interest rate  
13 environment. It is important to realize that investor expectations of higher interest  
14 rates, if any, are already embodied in current securities prices, which include debt  
15 securities and stock prices.

16 The current low interest rate environment favors lower risk regulated utilities.  
17 It would not be advisable for utility regulators to raise ROEs in anticipation of higher  
18 interest rates, the magnitude of which is simply not known.

19 **Q. HOW HAS THE INCREASE IN INTEREST RATES LAST YEAR AFFECTED**  
20 **UTILITY STOCKS?**

21 A. Table 1 below tracks movements in the 20-year Treasury Bond yield, the Mergent  
22 average utility bond yield, and the Dow Jones Utilities Average ("DJUA") from  
23 January 2016 through February 2017.

---

<sup>4</sup> Morin, Roger A. *New Regulatory Finance*, 279, Public Utilities Reports, Inc. (2006).

<b>TABLE 1</b>			
<b>Bond Yields and DJUA</b>			
	<u>20-Year</u> <u>Treasury %</u>	<u>Avg. Utility</u> <u>Bond %</u>	<u>DJUA</u>
<u>2016</u>			
January	2.49	4.62	611.35
February	2.20	4.44	620.70
March	2.28	4.40	668.57
April	2.21	4.16	654.44
May	2.22	4.06	659.44
June	2.02	3.93	716.52
July	1.82	3.70	711.42
August	1.89	3.73	666.87
September	2.02	3.80	668.13
October	2.17	3.90	675.23
November	2.54	4.21	632.67
December	2.84	4.39	645.86
<u>2017</u>			
January	2.75	4.24	668.87
February	2.76	4.25	703.16

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Table 1 shows that the 20-year Treasury Bond yield was higher in February 2017 than it was in January 2016 before the Fed began raising short-term interest rates. However, the yield on the Mergent average public utility bond was substantially lower in February 2017 than in January 2016, although the yield has increased since May 2016. Similarly, the DJUA was substantially higher in February 2017 than it was in January 2016.

After the Fed's announced increase to the Federal Funds rate on March 15, 2017, the DJUA closed at 693.01 on March 16, 2017, and the Moody's average public utility bond yield closed at 4.35%. The conclusion from this data is that even though the Federal Reserve has begun to raise short-term interest rates since March 2016, utility bond yields are still lower and the DJUA is higher than they were at the beginning of 2016.



1 **Q. BRIEFLY DESCRIBE ATMOS ENERGY AND APT'S POSITION WITHIN**  
2 **THAT COMPANY.**

3 A. APT is an operating segment within Atmos Energy that transports natural gas  
4 primarily to serve local distribution companies, including Atmos Mid-Tex.  
5 According to Atmos Energy's 2016 10-K Report, page 6:

6 Our regulated pipeline segment consists of the regulated  
7 pipeline and storage operations of APT. APT is one of the  
8 largest intrastate pipeline operations in Texas with a heavy  
9 concentration in the established natural gas-producing areas of  
10 central, northern and eastern Texas, extending into or near the  
11 major producing areas of the Barnett Shale, the Texas Gulf  
12 Coast and the Delaware and Val Verde Basins of West Texas.  
13 Through it, APT provides transportation and storage services to  
14 our Mid-Tex Division, other third party local distribution  
15 companies, industrial and electric generation customers,  
16 marketers and producers. As part of its pipeline operations,  
17 APT owns and operates five underground storage reservoirs in  
18 Texas. This segment represents approximately 30 percent of  
19 our consolidated operations.

20 Gross profit earned from transportation and storage services for  
21 APT is subject to traditional ratemaking governed by the RRC.  
22 Rates are updated through periodic filings made under Texas'  
23 Gas Reliability Infrastructure Program (GRIP). GRIP allows us  
24 to include in our rate base annually approved capital costs  
25 incurred in the prior calendar year provided that we file a  
26 complete rate case at least once every five years. APT's  
27 existing regulatory mechanisms allow certain transportation  
28 and storage services to be provided under market-based rates.

29 **Q. HAVE YOU REVIEWED REPORTS ISSUED BY BOND RATING**  
30 **AGENCIES THAT EVALUATE THE RISKINESS OF ATMOS ENERGY**  
31 **AND ITS PIPELINE OPERATIONS?**

32 A. Yes. APT provided credit rating agency reports from Standard and Poor's ("S&P"),  
33 Moody's, and Fitch in response to ATM RFP No. 1-04.<sup>5</sup> Atmos Energy currently has

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<sup>5</sup> APT Response to ATM RFP No. 1-04 (Feb. 28, 2017), Attachment B.

1 a credit rating of A from Moody's and A2 from S&P. These are solid investment  
2 grade credit ratings.

3 As an operating segment of Atmos Energy, APT does not have its own credit  
4 ratings. However, credit rating reports from S&P, Moody's, and Fitch discussed and  
5 evaluated the pipeline segment as part of Atmos Energy's overall credit profile. S&P  
6 stated the following in its report on Atmos Energy dated January 6, 2017:

7 Our assessment of Atmos' business risk profile incorporates  
8 the company's regulated, low-operating risk natural gas  
9 transmission and distribution operations that benefit from  
10 generally constructive regulation across various jurisdictions.  
11 Most jurisdictions, but not all, offer infrastructure riders,  
12 weather normalization clauses, formula rates, and other  
13 features that allow Atmos to recover its costs with limited  
14 regulatory lag.

15 S&P also noted that the "recent sale of unregulated gas marketing operations  
16 reduces business risk."

17 Moody's stated the following in its report on Atmos Energy dated  
18 December 14, 2016:

19 Atmos' core business consists primarily of regulated low risk  
20 local distribution company (LDC) operations in eight states and  
21 a tariff-based pipeline in Texas (mostly serving its affiliate  
22 Mid-Tex). Atmos benefits from having constructive rate  
23 making mechanisms, which further reduce uncertainty and  
24 provide greater transparency.

25 Moody's specifically cited Atmos Energy's "low business risk natural gas  
26 utility and pipeline operations" as a credit strength for the Company.

27 Finally, Fitch noted in its April 12, 2016, report on Atmos Energy that the  
28 "5,600 mile Texas intrastate pipeline system has an authorized ROE of 11.8% and  
29 benefits from annual GRIP filings, which allow for the recovery of capex in a timely  
30 manner." I have included the entirety of these three reports in Attachment B.

1 **Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF MR. KARL**  
2 **NALEPA, WITNESS FOR ACSC THIS PROCEEDING?**

3 A. Yes. I reviewed Mr. Nalepa's testimony and his testimony with respect to APT's  
4 risk.

5 **Q. PLEASE PROVIDE YOUR OPINION WITH RESPECT TO MR. NALEPA'S**  
6 **DISCUSSION OF APT'S RISK PROFILE.**

7 A. I completely agree with Mr. Nalepa's discussion of APT's risk profile. Two aspects  
8 of his discussion particularly stand out: the Gas Reliability Infrastructure Program  
9 ("GRIP") and Rider REV. These two regulatory mechanisms have provided a boon  
10 to the Company since they were approved by the Commission. According to  
11 Mr. Nalepa, GRIP has enabled the Company to forego rate cases and increase its base  
12 revenues by \$178 million. Rider REV has substantially stabilized the fluctuations in  
13 interruptible revenues, which allows APT to surcharge or credit its City Gate Service  
14 ("CGS") and Pipeline Transportation ("PT") customers 75% of the difference  
15 between the level of Other Revenues set in GUD No. 10000 and the actual amount of  
16 Other Revenues. Mr. Nalepa stated that Rider REV filings have enabled APT to  
17 surcharge CGS and PT customers a net total of \$15.7 million.

18 Taken together, GRIP and Rider REV have without a doubt substantially  
19 reduced APT's business risk.

20 **Q. IN ITS ORDER IN GUD NO. 10000, THE COMMISSION FOUND IT**  
21 **REASONABLE TO USE INTERSTATE PIPELINE COMPANIES AS THE**  
22 **BASIS FOR THE ROE FOR APT. DO YOU RECOMMEND THAT THE**  
23 **COMMISSION REEVALUATE THE BASIS FOR DETERMINING THE ROE**  
24 **IN THIS PROCEEDING?**

1 A. Yes. APT’s pipeline operations are far less risky than those of the interstate  
 2 pipelines. Objective measures of risk bear out this fact. Table 1 below presents  
 3 several commonly used measures of riskiness for Atmos Energy and the interstate  
 4 pipeline companies contained in Mr. Hevert’s proxy group. These measures include  
 5 the Safety Rank from Value Line and credit ratings from Moody’s and S&P.

**TABLE 2**  
**Comparison of Risk Measures**  
**Atmos Energy and Hevert Pipeline Group**

	<u>Value Line</u> <u>Safety Rank</u>	<u>Moody's</u> <u>Rating</u>	<u>S&amp;P</u> <u>Rating</u>
Boardwalk Pipeline Partners, L.P.	4	Baa3	BBB-
Energy Transfer Partners, LP	4	Baa3	BBB-
EnLinkMidstream Partners, LP	3	Ba2	BBB-
Kinder Morgan, Inc.	3	Baa3	BBB-
Spectra Energy Partners, LP	3	Baa2	BBB+
TC Pipelines, LP	3	Baa2	BBB-
Atmos Energy	1	A2	A

6  
 7 Value Line’s Safety Rank scores the total riskiness of a stock. According to  
 8 Value Line’s web site, the Safety Rank “measures the total risk of a stock relative to  
 9 the other stocks in the Value Line universe.” A Safety Rank of 1 is the highest  
 10 ranking, indicating stocks that are the safest, most stable, and least risky. A Safety  
 11 Rank of 4 is below average, which includes stocks that are riskier and less stable. A  
 12 Safety Rank of 3 is average.

13 Let us now compare the Safety Ranks of Atmos Energy and Mr. Hevert’s  
 14 pipeline group. Atmos Energy has a top Safety Rank of 1, putting it in the category  
 15 of the safest, least risky stocks that Value Line follows. Mr. Hevert’s pipeline group

1 has Safety Ranks of 3 and 4, clearly indicating that the pipeline group is far riskier  
2 and less stable than Atmos Energy.

3 Turning to credit ratings, Atmos Energy has a strong investment grade credit  
4 rating of A/A2 from S&P and Moody's. The Hevert pipeline group has far weaker  
5 credit ratings. Five of the six companies in the Hevert pipeline group have BBB-  
6 S&P ratings, which place them at rock bottom of the investment grade category.  
7 EnLink Midstream Partners is rated below investment grade by Moody's at Ba2,  
8 which is considered a speculative investment and very high risk.

9 **Q. WHAT IS YOUR CONCLUSION WITH RESPECT TO THE RELATIVE**  
10 **RISK OF APT'S OPERATIONS COMPARED TO MR. HEVERT'S**  
11 **INTERSTATE PIPELINE GROUP?**

12 A. The objective analyses performed by Value Line, S&P, and Moody's provide  
13 overwhelming and conclusive proof that the pipeline group relied upon by Mr. Hevert  
14 is far riskier than the low risk transmission business of APT and of Atmos Energy  
15 overall. Furthermore, the Commission-approved regulatory mechanisms of GRIP and  
16 Rider REV have reduced revenue and earnings fluctuations for APT.

17 Moody's and S&P both stated that APT is a low risk regulated pipeline  
18 operation. None of the rating agencies cited Atmos Energy's pipeline operations as  
19 increasing the risk of the Company.

20 **Q. DID YOU REVIEW THE DIRECT TESTIMONIES OF MR. REED AND**  
21 **MR. HEVERT WITH RESPECT TO APT'S RISK?**

22 A. Yes. Both Mr. Reed and Mr. Hevert spent considerable portions of their direct  
23 testimonies attempting to make the case that APT was not only comparable to  
24 interstate pipeline companies, but also that the Company was even more risky due to

1 its fluctuating interruptible revenues, as well as other factors. I will discuss their  
2 arguments in more detail in Section V of my Direct Testimony. However, it is  
3 important to note here that neither Mr. Hevert nor Mr. Reed made any mention of the  
4 credit rating agency reports that clearly stated the view that Atmos Energy's regulated  
5 pipeline operation was low risk. Neither did they discuss the fact that Rider REV  
6 eliminates 75% of the difference between actual Other Revenues and the level set in  
7 GUD No. 10000. Neither witness mentioned the beneficial effect of the GRIP on  
8 APT.

9 **Q. SHOULD THE COMMISSION RECONSIDER ITS USE OF INTERSTATE**  
10 **PIPELINE COMPANIES TO ESTIMATE THE COST OF EQUITY FOR**  
11 **APT?**

12 A. Yes. Interstate pipeline companies are far riskier than APT. Using a group of  
13 interstate pipeline companies to estimate the ROE for APT will undoubtedly greatly  
14 overstate the ROE for a low risk pipeline operation such as APT.

15 **Q. WHAT COMPANIES SHOULD THE COMMISSION USE TO ESTIMATE**  
16 **THE ROE FOR APT IN THIS CASE?**

17 A. I recommend that the Commission use gas distribution companies as a basis to  
18 estimate the ROE for APT in this case. Atmos Energy's low risk distribution and  
19 pipeline operations have resulted in A/A credit ratings and the highest Value Line  
20 Safety Rank of 1. It is reasonable in this case to use gas distribution companies as a  
21 proxy for APT's low risk transmission operations.

1                    **IV.        DETERMINATION OF FAIR RATE OF RETURN**

2    **Q.        PLEASE DESCRIBE THE METHODS YOU EMPLOYED IN ESTIMATING**  
3    **A FAIR RATE OF RETURN FOR ATMOS PIPELINE–TEXAS.**

4    A.        I employed a DCF analysis using a group of eight regulated gas distribution utilities.  
5            My DCF analysis is my standard constant growth form of the model that employs  
6            four different growth rate forecasts from the Value Line Investment Survey, First  
7            Call/IBES, and Zacks. I also employed Capital Asset Pricing Model (“CAPM”)  
8            analyses using both historical and forward-looking data. Although I did not rely on  
9            the CAPM for my recommended ROE for APT, the results from the CAPM tend to  
10           support the reasonableness of my recommendation.

11   **Q.        WHAT ARE THE MAIN GUIDELINES TO WHICH YOU ADHERE IN**  
12   **ESTIMATING THE COST OF EQUITY FOR A FIRM?**

13   A.        The estimated cost of equity should be comparable to the returns of other firms with  
14            similar risk structures and should be sufficient for the firm to attract capital. These  
15            are the basic standards set out by the United States Supreme Court in *Federal Power*  
16            *Comm’n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) and *Bluefield W.W. &*  
17            *Improv. Co. v. Public Service Comm’n*, 262 U.S. 679 (1922).

18            From an economist’s perspective, the notion of “opportunity cost” plays a  
19            vital role in estimating the return on equity. One measures the opportunity cost of an  
20            investment equal to what one would have obtained in the next best alternative. For  
21            example, let us suppose that an investor decides to purchase the stock of a publicly  
22            traded electric utility. That investor made the decision based on the expectation of  
23            dividend payments and perhaps some appreciation in the stock’s value over time;  
24            however, that investor’s opportunity cost is measured by what she or he could have

1 invested in as the next best alternative. That alternative could have been another  
2 utility stock, a utility bond, a mutual fund, a money market fund, or any other number  
3 of investment vehicles.

4 The key determinant in deciding whether to invest, however, is based on  
5 comparative levels of risk. Our hypothetical investor would not invest in a particular  
6 electric company stock if it offered a return lower than other investments of similar  
7 risk. The opportunity cost simply would not justify such an investment. Thus, the  
8 task for the rate of return analyst is to estimate a return that is equal to the return  
9 being offered by other risk-comparable firms.

10 **Q. WHAT ARE THE MAJOR TYPES OF RISK FACED BY UTILITY**  
11 **COMPANIES?**

12 A. In general, risk associated with the holding of common stock can be separated into  
13 three major categories: business risk, financial risk, and liquidity risk. Business risk  
14 refers to risks inherent in the operation of the business. Volatility of the firm's sales,  
15 long-term demand for its product(s), the amount of operating leverage, and quality of  
16 management are all factors that affect business risk. The quality of regulation at the  
17 state and federal levels also plays an important role in business risk for regulated  
18 utility companies.

19 Financial risk refers to the impact on a firm's future cash flows from the use  
20 of debt in the capital structure. Interest payments to bondholders represent a prior  
21 call on the firm's cash flows and must be met before income is available to the  
22 common shareholders. Additional debt means additional variability in the firm's  
23 earnings, leading to additional risk.



1           Liquidity risk refers to the ability of an investor to quickly sell an investment  
2 without a substantial price concession. The easier it is for an investor to sell an  
3 investment for cash, the lower the liquidity risk will be. Stock markets, such as the  
4 New York and American Stock Exchanges, help ease liquidity risk substantially.  
5 Investors who own stocks that are traded in these markets know on a daily basis what  
6 the market prices of their investments are and that they can sell these investments  
7 fairly quickly. Many electric utility stocks are traded on the New York Stock  
8 Exchange and are considered liquid investments.

9 **Q. ARE THERE ANY SOURCES AVAILABLE TO INVESTORS THAT**  
10 **QUANTIFY THE TOTAL RISK OF A COMPANY?**

11 A. Bond and credit ratings are tools that investors use to assess the risk comparability of  
12 firms. Bond rating agencies such as Moody's and S&P perform detailed analyses of  
13 factors that contribute to the risk of an investment. The result of their analyses is a  
14 bond and/or credit rating that reflect these risks.

15 **A. Discounted Cash Flow ("DCF") Model**

16 **Q. PLEASE DESCRIBE THE BASIC DCF APPROACH.**

17 A. The basic DCF approach is rooted in valuation theory. It is based on the premise that  
18 the value of a financial asset is determined by its ability to generate future net cash  
19 flows. In the case of a common stock, those future cash flows generally take the form  
20 of dividends and appreciation in stock price. The value of the stock to investors is the  
21 discounted present value of future cash flows. The general equation then is:

$$V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \dots + \frac{R}{(1+r)^n}$$

1                   Where:       V = asset value  
 2                                   R = yearly cash flows  
 3                                   r = discount rate

4                   This is no different from determining the value of any asset from an economic point  
 5                   of view; however, the commonly employed DCF model makes certain simplifying  
 6                   assumptions. One is that the stream of income from the equity share is assumed to be  
 7                   perpetual; that is, there is no salvage or residual value at the end of some maturity  
 8                   date (as is the case with a bond). Another important assumption is that financial  
 9                   markets are reasonably efficient; that is, they correctly evaluate the cash flows  
 10                   relative to the appropriate discount rate, thus rendering the stock price efficient  
 11                   relative to other alternatives. Finally, the model I typically employ also assumes a  
 12                   constant growth rate in dividends. The fundamental relationship employed in the  
 13                   DCF method is described by the formula:

$$k = D_1/P_0 + g$$

14                   Where:       D<sub>1</sub> = the next period dividend  
 15                                   P<sub>0</sub> = current stock price  
 16                                   g = expected growth rate  
 17                                   k = investor-required return

18                   Under the formula, it is apparent that “k” must reflect the investors’ expected return.  
 19                   Use of the DCF method to determine an investor-required return is complicated by  
 20                   the need to express investors’ expectations relative to dividends, earnings, and book  
 21                   value over an infinite time horizon. Financial theory suggests that stockholders  
 22                   purchase common stock on the assumption that there will be some change in the rate  
 23                   of dividend payments over time. We assume that the rate of growth in dividends is  
 24                   constant over the assumed time horizon, but the model could easily handle varying

1 growth rates if we knew what they were. Finally, the relevant time frame is  
2 prospective rather than retrospective.

3 **Q. WHAT WAS YOUR FIRST STEP IN CONDUCTING YOUR DCF ANALYSIS**  
4 **FOR APT?**

5 A. My first step was to construct a proxy group of companies with a risk profile that is  
6 reasonably similar to APT. Since APT is an operating segment of Atmos Energy, it  
7 does not have publicly traded stock. Thus, one cannot estimate a DCF cost of equity  
8 on the Company directly. It is necessary to use a group of companies that are  
9 similarly situated and have reasonably similar risk profiles to APT.

10 **Q. PLEASE DESCRIBE YOUR APPROACH FOR SELECTING THE PROXY**  
11 **GROUP COMPANIES.**

12 A. I chose a group of regulated gas distribution companies from the Natural Gas Utility  
13 Group in the Value Line Investment Survey. I described earlier in my Direct  
14 Testimony why gas pipeline companies should not be used as a proxy to estimate the  
15 investor required ROE for a low risk gas transmission utility such as APT. Therefore,  
16 a proxy group of gas distribution companies with similarly low business risk profiles  
17 may be used as a reasonable proxy group for APT.

18 The gas distribution companies in the proxy group all have long-term  
19 dividend and earnings growth forecasts from Value Line, Zacks, and First Call/IBES,  
20 and are not involved in merger activities. Table 3 presents the proxy group and each  
21 company's Value Line Safety Rank.

<b>TABLE 3</b>	
<b>GAS UTILITY PROXY GROUP</b>	
	<u>Safety Rank</u>
Atmos Energy	1
Chesapeake Util.	2
New Jersey Resources	1
Northwest Natural Gas	1
South Jersey Industries	2
Southwest Gas	3
Spire Inc.	2
UGI Corp.	2
 Average	 1.8
Source: Value Line Investment Survey	

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6

The average Safety Rank of the group, which includes Atmos Energy, is 1.8 and is greater than Atmos Energy's Safety Rank. Even though the Safety Rank of the gas utility proxy group is somewhat higher than the low risk transmission and distribution operations of Atmos Energy, it provides a reasonable basis for estimating the investor required ROE for APT in this proceeding.

7 **Q.**

**WHAT WAS YOUR FIRST STEP IN DETERMINING THE DCF RETURN ON EQUITY FOR THE PROXY GROUP?**

8

9 **A.**

I first determined the current dividend yield,  $D_1/P_0$ , from the basic equation. My general practice is to use six months as the most reasonable period over which to estimate the dividend yield. The six-month period I used covered the months from September 2016 through February 2017. I obtained historical prices and dividends from Yahoo! Finance. The annualized dividend divided by the average monthly price represents the average dividend yield for each month in the period.

10

11

12

13

14

1                   The resulting average dividend yield for the proxy group is 2.69%. These  
2 calculations are shown in Exhibit RAB-2.

3 **Q. DID RISING INTEREST RATES AFFECT THE DIVIDEND YIELD OF THE**  
4 **GROUP OVER THE SIX-MONTH PERIOD YOU EXAMINED?**

5 A. Rising interest rates did not cause the dividend yield of the gas proxy group to rise  
6 much over the six-month period in my analysis. In fact, monthly dividend yields  
7 declined from 2.69% in September 2016 to 2.59% in February 2017.

8 **Q. HAVING ESTABLISHED THE AVERAGE DIVIDEND YIELD, HOW DID**  
9 **YOU DETERMINE THE INVESTORS' EXPECTED GROWTH RATE FOR**  
10 **THE GAS UTILITY PROXY GROUP?**

11 A. The investors' expected growth rate, in theory, correctly forecasts the constant rate of  
12 growth in dividends. The dividend growth rate is a function of earnings growth and  
13 the payout ratio, neither of which is known precisely for the future. We refer to a  
14 perpetual growth rate since the DCF model has no arbitrary cut-off point. We must  
15 estimate the investors' expected growth rate because there is no way to know with  
16 absolute certainty what investors expect the growth rate to be in the short term, much  
17 less in perpetuity.

18                   For my analysis in this proceeding, I used three major sources of analysts'  
19 forecasts for growth. These sources are The Value Line Investment Survey, Zacks,  
20 and First Call/IBES. This is the method I typically use for estimating growth for my  
21 DCF calculations.

1 **Q. PLEASE BRIEFLY DESCRIBE VALUE LINE, ZACKS, AND FIRST**  
2 **CALL/IBES.**

3 A. The Value Line Investment Survey is a widely used and respected source of investor  
4 information that covers approximately 1,700 companies in its Standard Edition and  
5 several thousand in its Plus Edition. It is updated quarterly and probably represents  
6 the most comprehensive of all investment information services. It provides both  
7 historical and forecasted information on a number of important data elements. Value  
8 Line neither participates in financial markets as a broker nor works for the utility  
9 industry in any capacity of which I am aware.

10 Zacks gathers opinions from a variety of analysts on earnings growth forecasts  
11 for numerous firms including regulated electric utilities. The estimates of the analysts  
12 responding are combined to produce consensus average estimates of earnings growth.  
13 I obtained Zacks' earnings growth forecasts from its website.

14 Like Zacks, First Call/IBES also compiles and reports consensus analysts'  
15 forecasts of earnings growth. I obtained these forecasts from Yahoo! Finance.

16 **Q. WHY DID YOU RELY ON ANALYSTS' FORECASTS IN YOUR ANALYSIS?**

17 A. Return on equity analysis is a forward-looking process. Five-year or ten-year  
18 historical growth rates may not accurately represent investor expectations for  
19 dividend growth. Analysts' forecasts for earnings and dividend growth provide better  
20 proxies for the expected growth component in the DCF model than historical growth  
21 rates. Analysts' forecasts are also widely available to investors and one can  
22 reasonably assume that they influence investor expectations.

1 **Q. PLEASE EXPLAIN HOW YOU USED ANALYSTS' DIVIDEND AND**  
2 **EARNINGS GROWTH FORECASTS IN YOUR CONSTANT GROWTH DCF**  
3 **ANALYSIS.**

4 Q. In the top table, DCF Growth Rate Analysis, of Exhibit RAB-3, Columns (1) through  
5 (5) show the forecasted dividend, earnings, and retention growth rates from Value  
6 Line and the earnings growth forecasts from First Call/IBES and Zacks. In my  
7 analysis, I used four of these growth rates: dividend and earnings growth from Value  
8 Line, and earnings growth from Zacks and First Call/IBES. It is important to include  
9 dividend growth forecasts in the DCF model since the model calls for forecasted cash  
10 flows. Value Line is the only source of which I am aware that forecasts dividend  
11 growth; my approach gives this forecast equal weight with the three earnings growth  
12 forecasts.

13 **Q. HOW DID YOU PROCEED TO DETERMINE THE DCF RETURN OF**  
14 **EQUITY FOR THE COMPARISON GROUP?**

15 A. To estimate the expected dividend yield ( $D_1$ ), the current dividend yield must be  
16 moved forward in time to account for dividend increases over the next twelve months.  
17 I estimated the expected dividend yield by multiplying the current dividend yield by  
18 one plus one-half the expected growth rate.

19 The lower section of Exhibit RAB-3 presents my standard method of  
20 calculating dividend yields, growth rates, and return on equity for the comparison  
21 group of companies. The DCF Return on Equity Calculation section shows the  
22 application of each of four growth rates I used in my analysis to the current group  
23 dividend yield of 2.69% to calculate the expected dividend yield. I then added the  
24 expected growth rates to the expected dividend yield. In evaluating investor expected

1 growth rates, I use both the average and the median values for the group under  
2 consideration.

3 **Q. WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF**  
4 **MODEL?**

5 A. For the average growth rates in Method 1, the results range from 7.44% to 9.01%.  
6 Using the median growth rates in Method 2, the results range from 7.50% to 9.02%.  
7 At this time, the lowest ROE results from using dividend growth are overly  
8 conservative. Thus, I excluded those results from the DCF ROE averages in Methods  
9 1 and 2. Averaging the ROE calculations using earnings growth, Method 1 results in  
10 a gas utility proxy group ROE of 8.68% and Method 2 results in a ROE of 8.85%.

11 **B. Capital Asset Pricing Model (“CAPM”)**

12 **Q. BRIEFLY SUMMARIZE THE CAPM APPROACH.**

13 A. The theory underlying the CAPM approach is that investors, through diversified  
14 portfolios, may combine assets to minimize the total risk of the portfolio.  
15 Diversification allows investors to diversify away all risks specific to a particular  
16 company and be left only with market risk that affects all companies. Thus, the  
17 CAPM theory identifies two types of risks for a security: company-specific risk and  
18 market risk. Company-specific risk includes such events as strikes, management  
19 errors, marketing failures, lawsuits, and other events that are unique to a particular  
20 firm. Market risk includes inflation, business cycles, war, variations in interest rates,  
21 and changes in consumer confidence. Market risk tends to affect all stocks and  
22 cannot be diversified away. The idea behind the CAPM is that diversified investors  
23 are rewarded with returns based on market risk.



1           Within the CAPM framework, the expected return on a security is equal to the  
2 risk-free rate of return plus a risk premium that is proportional to the security's  
3 market, or non-diversifiable, risk. Beta is the factor that reflects the inherent market  
4 risk of a security and measures the volatility of a particular security relative to the  
5 overall market for securities. For example, a stock with a beta of 1.0 indicates that if  
6 the market rises by 15%, that stock will also rise by 15%. This stock moves in  
7 tandem with movements in the overall market. Stocks with a beta of 0.5 will only  
8 rise or fall 50% as much as the overall market. So, with an increase in the market of  
9 15%, this stock will only rise 7.5%. Stocks with betas greater than 1.0 will rise and  
10 fall more than the overall market. Thus, beta is the measure of the relative risk of  
11 individual securities vis-à-vis the market.

12           Based on the foregoing discussion, the equation for determining the return for  
13 a security in the CAPM framework is:

$$K = Rf + \beta(MRP)$$

14           Where:        *K*     = *Required Return on equity*  
15                        *Rf*    = *Risk-free rate*  
16                        *MRP* = *Market risk premium*  
17                        *β*     = *Beta*

18           This equation tells us about the risk/return relationship posited by the CAPM.  
19 Investors are risk averse and will only accept higher risk if they expect to receive  
20 higher returns. These returns can be determined in relation to a stock's beta and the  
21 market risk premium. The general level of risk aversion in the economy determines  
22 the market risk premium. If the risk-free rate of return is 3.0% and the required return  
23 on the total market is 15%, then the risk premium is 12%. Any stock's required  
24 return can be determined by multiplying its beta by the market risk premium. Stocks  
25 with betas greater than 1.0 are considered riskier than the overall market and will

1 have higher required returns. Conversely, stocks with betas less than 1.0 will have  
2 required returns lower than the market as a whole.

3 **Q. IN GENERAL, ARE THERE CONCERNS REGARDING THE USE OF THE**  
4 **CAPM IN ESTIMATING THE RETURN ON EQUITY?**

5 A. Yes. There is some controversy surrounding the use of the CAPM.<sup>6</sup> There is  
6 evidence that beta is not the primary factor in determining the risk of a security. For  
7 example, Value Line's "Safety Rank" is a measure of total risk, not its calculated beta  
8 coefficient. Beta coefficients usually describe only a small amount of total  
9 investment risk.

10 There is also substantial judgment involved in estimating the required market  
11 return. In theory, the CAPM requires an estimate of the return on the total market for  
12 investments, including stocks, bonds, real estate, etc. It is nearly impossible for the  
13 analyst to estimate such a broad-based return. Often in utility cases, a market return  
14 is estimated using the S&P 500 or the return on Value Line's stock market composite.  
15 However, these are limited sources of information with respect to estimating the  
16 investor's required return for all investments. In practice, the total market return  
17 estimate faces significant limitations to its estimation and, ultimately, its usefulness in  
18 quantifying the investor required ROE.

19 In the final analysis, a considerable amount of judgment must be employed in  
20 determining the risk-free rate and market return portions of the CAPM equation. The  
21 analyst's application of judgment can significantly influence the results obtained from  
22 the CAPM. My past experience with the CAPM indicates that it is prudent to use a

---

<sup>6</sup> For a more complete discussion of some of the controversy surrounding the use of the CAPM, refer to *A Random Walk Down Wall Street* by Burton Malkiel, pp. 206-211, 2007 edition.

1 wide variety of data in estimating investor-required returns. Of course, the range of  
2 results may also be wide, indicating the difficulty in obtaining a reliable estimate  
3 from the CAPM.

4 **Q. HOW DID YOU ESTIMATE THE MARKET RETURN PORTION OF THE**  
5 **CAPM?**

6 A. The first source I used was the Value Line Investment Analyzer, Plus Edition, for  
7 February 14, 2017. This edition covers several thousand stocks. The Value Line  
8 Investment Analyzer provides a summary statistical report detailing, among other  
9 things, forecasted growth rates for earnings and book value for the companies Value  
10 Line follows as well as the projected total annual return over the next 3 to 5 years.  
11 I present these growth rates and Value Line's projected annual return on page 2 of  
12 Exhibit RAB-4. I included median earnings and book value growth rates. The  
13 estimated market returns using Value Line's market data range from 9.50% to 9.85%.  
14 The average of these market returns is 9.67%.

15 **Q. WHY DID YOU USE MEDIAN GROWTH RATE ESTIMATES RATHER**  
16 **THAN THE AVERAGE GROWTH RATE ESTIMATES FOR THE VALUE**  
17 **LINE COMPANIES?**

18 A. Using median growth rates is likely a more accurate method of estimating the central  
19 tendency of Value Line's large data set compared to the average growth rates.  
20 Average earnings and book value growth rates may be unduly influenced by very  
21 high or very low 3 to 5-year growth rates that are unsustainable in the long run. For  
22 example, Value Line's Statistical Summary shows both the highest and lowest value  
23 for earnings and book value growth forecasts. For earnings growth, Value Line  
24 showed the highest earnings growth forecast to be 140.4% and the lowest growth rate

1 to be -30.5%. The highest book value growth rate was 72.5% and the lowest  
2 was -33%. None of these levels of growth is compatible with long-run growth  
3 prospects for the market as a whole. The median growth rate is not influenced by  
4 such extremes because it represents the middle value of a very wide range of earnings  
5 growth rates.

6 **Q. PLEASE CONTINUE WITH YOUR MARKET RETURN ANALYSIS.**

7 A. I also considered a supplemental check to the Value Line projected market return  
8 estimates. Duff and Phelps publishes a study of historical returns on the stock market  
9 in its *2016 SBBI Yearbook*. Some analysts employ this historical data to estimate the  
10 market risk premium of stocks over the risk-free rate. The assumption is that a risk  
11 premium calculated over a long period of time is reflective of investor expectations  
12 going forward. Exhibit RAB-5 presents the calculation of the market returns using  
13 the historical data.

14 **Q. PLEASE EXPLAIN HOW THIS HISTORICAL RISK PREMIUM IS**  
15 **CALCULATED.**

16 A. Exhibit RAB-5 shows both the geometric and arithmetic average of yearly historical  
17 stock market returns over the historical period from 1926–2015. The average annual  
18 income return for 20-year Treasury Bond is subtracted from these historical stocks  
19 returns to obtain the historical market risk premium of stock returns over long-term  
20 Treasury Bond income returns. The historical market risk premium range is 5.0% to  
21 7.0%.

1 **Q. DID YOU ADD AN ADDITIONAL MEASURE OF THE HISTORICAL RISK**  
2 **PREMIUM IN THIS CASE?**

3 A. Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and  
4 Dr. Peng Chen indicating that the historical risk premium of stock returns over long-  
5 term government bond returns has been significantly influenced upward by  
6 substantial growth in the price/earnings (“P/E”) ratio for stocks from 1980 through  
7 2001.<sup>7</sup> Duff and Phelps noted that this growth in the P/E ratio for stocks was  
8 subtracted out of the historical risk premium because “it is not believed that P/E will  
9 continue to increase in the future.” The adjusted historical arithmetic market risk  
10 premium is 6.03%, which I have also included in Exhibit RAB-5. This risk premium  
11 estimate falls near the middle of the market risk premium range.

12 **Q. HOW DID YOU DETERMINE THE RISK FREE RATE?**

13 A. I used the average yields on the 20-year Treasury Bond and five-year Treasury note  
14 over the six-month period from September 2016 through February 2017. This was  
15 the latest available data from the Federal Reserve’s Selected Interest Rates (Daily)  
16 H.15 web site during the preparation of my Direct Testimony. The 20-year Treasury  
17 Bond is often used by rate of return analysts as the risk-free rate, but it contains a  
18 significant amount of interest rate risk. The five-year Treasury note carries less  
19 interest rate risk than the 20-year bond and is more stable than three-month Treasury  
20 bills. Therefore, I have employed both securities as proxies for the risk-free rate of  
21 return. This approach provides a reasonable range over which the CAPM return on  
22 equity may be estimated.

---

<sup>7</sup> 2016 *SBBJ Yearbook*, Duff and Phelps, pp. 10-28 through 10-30.

1 **Q. HOW DID YOU DETERMINE THE VALUE FOR BETA?**

2 A. I obtained the betas for the companies in the gas utility proxy group from the most  
3 recent Value Line reports. The average of the Value Line betas for the comparison  
4 group is 0.75.

5 **Q. PLEASE SUMMARIZE THE CAPM RESULTS.**

6 A. For my forward-looking CAPM return on equity estimates, the CAPM results are  
7 7.66% – 7.88%. Using historical risk premiums, the CAPM results are 6.26% –  
8 7.76%.

9 **C. Conclusions and Recommendations**

10 **Q. PLEASE SUMMARIZE THE COST OF EQUITY RESULTS FOR YOUR DCF**  
11 **AND CAPM ANALYSES.**

12 A. Table 4 below summarizes my return on equity results using the DCF and CAPM for  
13 my comparison group of companies.

<b>TABLE 4</b>	
<b>ATMOS PIPELINE TEXAS</b>	
<b>ROE RESULTS SUMMARY</b>	
<u>DCF Results:</u>	
Average Growth Rates	
- High	9.01%
- Low	7.44%
- Average w/ Earnings Growth	8.68%
Median Growth Rates	
- High	9.02%
- Low	7.50%
- Average w/ Earnings Growth	8.85%
<u>CAPM:</u>	
- 5-Year Treasury Bond	7.66%
- 20-Year Treasury Bond	7.88%
- Historical Returns	6.26% - 7.76%

14

1 **Q. WHAT IS YOUR RECOMMENDED RETURN ON EQUITY FOR APT?**

2 A. I recommend that the Commission adopt a 9.0% return on equity for APT. My  
3 recommendation is consistent with the top of the range of DCF estimates using  
4 projected earnings growth for the gas utility proxy group. In today's low interest rate  
5 environment, it would be reasonable for the Commission to authorize a ROE for APT  
6 in the range of 8.70% – 8.90% based on my DCF results. However, 9.0% is certainly  
7 a reasonable allowed ROE for APT considering recent increases in short-term interest  
8 rates by the Federal Reserve and in long-term interest rates generally.

9 **Q. WHAT IS YOUR RECOMMENDED WEIGHTED COST OF CAPITAL?**

10 A. My weighted cost of capital recommendation is 7.54%, which is shown on Table 5  
11 below. It is based on an adjusted equity ratio of 52.0%, an adjusted long-term debt  
12 ratio of 48.0%, and my recommended ROE of 9.0%.

	Percentage	Cost	Wtd. Cost
Long-term Debt	48.00%	5.95%	2.86%
Common Equity	52.00%	9.00%	4.68%
Total	100.00%		7.54%

13

14 **Q. PLEASE EXPLAIN WHY YOU ADJUSTED THE COMPANY'S COMMON**  
15 **EQUITY RATIO.**

16 A. The Company's requested common equity ratio of 59% is grossly excessive,  
17 unreasonable, and should be rejected by the Commission.

1 **Q. IS THE COMPANY'S REQUESTED COMMON EQUITY RATIO**  
2 **CONSISTENT WITH ITS COMMON EQUITY RATIOS OVER THE LAST**  
3 **TEN YEARS?**

4 A. It certainly is not. Table 6 below shows Atmos Energy's common equity ratios  
5 excluding short-term debt from 2011 through 2015. The percentages are based on  
6 data from APT's response to ACSC RFI No. 12-01 and are based on 12-month  
7 average balances of long-term debt and shareholders' equity for the fiscal years  
8 ending September.<sup>8</sup> The 2016 value is the Company's requested common equity ratio  
9 in this case. I have also included Value Line's projected common equity ratio from  
10 its March 3, 2017, report for Atmos Energy.

2011	51.8%
2012	51.8%
2013	51.9%
2014	54.6%
2015	56.2%
2016	59.8%
2020 - 2022	55.0%

11  
12 Table 6 clearly shows how excessive the Company's requested common equity ratio  
13 is compared to the five years of prior experience. Value Line is also forecasting a  
14 lower common equity ratio for Atmos Energy 3 to 5 years from now.

---

<sup>8</sup> APT Response to ACSC RFI No. 12-01 (Mar. 15, 2017), Attachment C.



1 **Q. HOW DOES APT'S REQUESTED COMMON EQUITY RATIO COMPARE**  
2 **WITH THE COMMON EQUITY RATIOS OF THE GAS UTILITY PROXY**  
3 **GROUP?**

4 A. APT's requested common equity ratio far exceeds the average common equity ratio  
5 of the group, which is shown in Table 7 below.

Atmos Energy	61.3%
Chesapeake Util.	75.0%
New Jersey Resources	52.3%
Northwest Natural Gas	57.0%
South Jersey Industries	61.0%
Southwest Gas	51.0%
Spire Inc.	49.1%
UGI Corp.	43.0%
WGL Holdings	56.1%
Average	56.2%
Avg. Excl. Chesapeake	53.9%
Source: Value Line Investment Survey	

6  
7 I note that the group average is affected by the highly unrepresentative 75% common  
8 equity ratio for Chesapeake Utilities. Excluding Chesapeake Utilities results in a  
9 group common equity ratio of 53.9%, reasonably close to the 52% I recommend for  
10 APT.

11 **Q. HOW DO YOU RECOMMEND THAT THE COMMISSION ADJUST THE**  
12 **COMPANY'S COMMON EQUITY RATIO TO 52%?**

13 A. I recommend the Commission base the 52% equity ratio on APT's common equity  
14 ratio including short-term debt as contained in Schedule G. APT showed that the  
15 13-month average common equity ratio for the fiscal year ending September 2016

1 was 51.9%. This is a reasonable common equity ratio for APT and is consistent with  
2 the common equity ratios for the gas utility proxy group.

3 **Q. WHY IS IT REASONABLE TO BASE YOUR RECOMMENDATION ON A**  
4 **CONSOLIDATED CAPITAL STRUCTURE THAT CONTAINS SHORT-**  
5 **TERM DEBT?**

6 A. Although the Commission does not use short-term debt in its allowed capital  
7 structure, the fact is that Atmos Energy has consistently used short-term debt over  
8 many years to finance its operations. In this era of low interest rates, it makes sense  
9 that a utility would engage in debt financing to lower its overall cost of capital.  
10 Although I am not recommending that the Commission explicitly include short-term  
11 debt, 48% is a very reasonable proxy for total debt financing for Atmos.

12 **Q. TAKEN TOGETHER, WOULD MR. HEVERT'S RECOMMENDED ROE OF**  
13 **13.5% AND COMMON EQUITY RATIO OF 59.8% RESULT IN ECONOMIC**  
14 **HARM TO TEXAS RATEPAYERS?**

15 A. Yes, most definitely. It is important to realize that the rate of return on common  
16 equity must be grossed-up for income taxes in the Company's revenue requirement  
17 calculation. In practical terms, using a 35% income tax rate results in a tax gross-up  
18 factor for the cost of equity of 1.54. This is the factor that must be applied to the  
19 ROE in order for the Company to pay income taxes associated with its return on  
20 equity.

21 *Mr. Hevert's ROE of 13.5%, when grossed-up for income taxes, becomes a*  
22 *pre-tax ROE of 20.79%.* Making matters even worse, Mr. Hevert also recommends a  
23 59.8% common equity ratio. Thus, nearly 60% of APT's proposed capital structure is  
24 comprised of capital that requires a pre-tax return of 20.79%. Since the debt return is

1 not taxable, its pre-tax return is 5.95%. *Mr. Hevert's recommended pre-tax ROE is*  
2 *350% greater than the Company's long-term debt return.*

3 It is quite clear that Mr. Hevert's recommended cost of capital is too  
4 expensive for Texas ratepayers to support and would result in an economically  
5 harmful increase in rates. If the return on equity and the weighted cost of capital is  
6 set at an excessive level, then economic wealth will be transferred from Texas  
7 ratepayers to Atmos Energy and its shareholders. I have demonstrated that  
8 Mr. Hevert's recommended common equity ratio and ROE are far too high. I  
9 strongly recommend that the Commission reject APT's proposed cost of capital and  
10 adopt my recommended capital structure and ROE in this proceeding.

11 **V. RESPONSE TO APT TESTIMONY**

12 **Q. HAVE YOU REVIEWED THE DIRECT TESTIMONIES OF MR. ROBERT**  
13 **HEVERT AND MR. JOHN REED?**

14 A. Yes.

15 **Q. PLEASE SUMMARIZE MR. HEVERT'S TESTIMONY AND APPROACH TO**  
16 **RETURN ON EQUITY.**

17 A. Mr. Hevert employed three methods to estimate the investor required rate of return  
18 for APT: (1) the constant growth DCF model, (2) the bond yield plus risk premium  
19 model, and (3) the CAPM. Mr. Hevert employed a group of proxy companies that  
20 consisted of interstate pipeline companies as the basis for his analyses.

21 For his constant growth DCF approach, he used Value Line, First Call, and  
22 Zacks for the investor expected growth rate. For the interstate pipeline group,  
23 Mr. Hevert's mean growth rate ROE results ranged from 15.19% to 15.49%.

1 In his bond yield plus risk premium method, Mr. Hevert used his pipeline  
2 group and a group of natural gas utilities to estimate the risk premiums. These  
3 approaches used by Mr. Hevert resulted in a range of ROE estimates from 9.96% –  
4 10.30% for the natural gas utility group and 12.78% – 13.03% for the gas pipeline  
5 group.

6 Using betas from his gas pipeline group, Mr. Hevert's ROE results for the  
7 CAPM ranged from 13.53% to 16.86%.

8 Based on the results of his analyses and judgment, Mr. Hevert recommended a  
9 ROE for APT of 13.5%. Mr. Hevert also discussed APT's business risk as explained  
10 in the Direct Testimonies of Mr. Gordon and Mr. Reed. Mr. Hevert concluded that  
11 risks associated with APT's lack of geographic diversity, more intense competition,  
12 and bypass risk increased the Company's business risk relative to the interstate  
13 pipeline group he developed. He further concluded on page 51 of his Direct  
14 Testimony that "investors require a higher return to compensate for this increased  
15 business risk."

16 **Q. PLEASE SUMMARIZE MR. REED'S DISCUSSION OF APT'S RISK**  
17 **PROFILE.**

18 A. Mr. Reed presented his discussion of APT's risk profile on pages 23 through 30 of his  
19 Direct Testimony. The so-called key risks identified and discussed by Mr. Reed were  
20 included on pages 23 through 24 of his Direct Testimony and are as follows:

- 21 • APT is "very regional and is highly subject to the general economic  
22 conditions in Texas as well as the extremely competitive market in the  
23 region."

- 1 • APT faces various risks of “building, operating, and maintaining a safe
- 2 pipeline system in compliance with applicable state and federal regulation.”
- 3 • APT also faces “operational performance risk related to its firm service
- 4 customers.”
- 5 • APT faces financial risk “from a variety of factors.”
- 6 • APT faces “competition from other pipelines for the provision of interruptible
- 7 service and does so in a pricing environment that makes its capacity less
- 8 attractive than it was in the past.”

9 Mr. Reed concluded on page 30 of his Direct Testimony that APT “is at the  
10 higher end of the risk spectrum of the companies in the proxy group chosen by APT  
11 witness Hevert for his return on equity analysis...”

12 Mr. Reed also discussed financial and ROE considerations beginning on  
13 page 30 of his Direct Testimony. In this section Mr. Reed compared APT to the  
14 interstate pipeline group constructed by Mr. Hevert and concluded that APT was at  
15 the higher end of the risk spectrum of Mr. Hevert’s pipeline group.

16 **A. Hevert and Reed Comparative Risk Analyses**

17 **Q. WHAT ARE YOUR CONCLUSIONS AND RECOMMENDATIONS WITH**  
18 **RESPECT TO THE CONCLUSIONS BY MR. REED AND MR. HEVERT**  
19 **THAT APT IS RISKIER THAN THE INTERSTATE PIPELINE PROXY**  
20 **GROUP USED BY MR. HEVERT?**

21 **A.** The APT risk profile analyses performed by Mr. Hevert and Mr. Reed should be  
22 rejected by the Commission.

23 First and most important, neither Mr. Hevert nor Mr. Reed made any mention  
24 whatsoever of the credit rating agency reports that clearly described Atmos Energy’s

1 gas pipeline operations as low risk. In fact, in his response to Texas Industrial Energy  
2 Consumers (“TIEC”) Question No. 1-09, part (a), Mr. Hevert responded as follows:

3 “Mr. Hevert did not consider any credit rating reports in developing his  
4 testimony in this proceeding.”<sup>9</sup>

5 On page 34 of his Direct Testimony, lines 11 through 21, Mr. Reed cited four  
6 key factors used by Moody’s in rating utility securities. He also cited S&P’s  
7 discussion of regulatory advantage on page 35 of his Direct Testimony. However,  
8 Mr. Reed failed to cite any Moody’s or S&P reports on Atmos Energy that expressly  
9 considered the business risk of Atmos Energy’s distribution and pipeline operations,  
10 which were described by both credit rating agencies as low risk.

11 The fact that neither Mr. Hevert nor Mr. Reed even considered the Atmos  
12 Energy credit reports completely undercuts their discussion and conclusions  
13 regarding APT’s alleged higher risk. I clearly showed earlier in my Direct Testimony  
14 that if one objectively evaluates the statements by the credit rating agencies regarding  
15 Atmos Energy, APT’s pipeline operations are viewed as low risk.

16 In addition, both Mr. Hevert and Mr. Reed failed to consider two major risk  
17 mitigating factors: GRIP and Rider REV. As described earlier in my Direct  
18 Testimony and in the Direct Testimony of Mr. Nalepa, these regulatory mechanisms  
19 shield APT from a substantial amount of business risk related to investment in rate  
20 base and fluctuations in Other Revenues.

21 Both Mr. Hevert’s and Mr. Reed’s assertions about APT’s higher risk  
22 essentially run counter to the objective risk analyses performed by Moody’s, S&P,  
23 and Fitch, and ignore the risk mitigating regulatory mechanisms of GRIP and Rider

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<sup>9</sup> APT Response to TIEC RFI No. 1-09 (Mar. 16, 2017), Attachment D.

1 REV. I strongly recommend that the Commission reject their credit profile testimony  
2 out of hand.

3 **Q. ARE THE CREDIT RATINGS OF MR. HEVERT'S PIPELINE GROUP**  
4 **CONSISTENT WITH PLACING APT AT THE HIGHER END OF THE RISK**  
5 **SPECTRUM OF THAT GROUP AS MR. REED RECOMMENDED?**

6 A. Absolutely not. The high end of the risk spectrum in Mr. Hevert's group is EnLink  
7 Midstream Partners, LP, which has a Moody's rating of Ba2. This is a speculative,  
8 non-investment grade bond rating and is in no way indicative of the low risk pipeline  
9 operations of APT. Mr. Reed failed to provide any comparative analysis of the credit  
10 ratings of the companies in Mr. Hevert's interstate pipeline group to support his  
11 conclusions on the risk of APT vis-à-vis the interstate pipeline group.

12 **Q. WHAT ARE THE IMPLICATIONS OF YOUR CONCLUSIONS**  
13 **REGARDING THE FATALLY FLAWED RISK PROFILE ANALYSES**  
14 **PROFFERED BY MR. HEVERT AND MR. REED?**

15 A. Frankly, the fatal flaws in their risk profile analyses render Mr. Hevert's ROE  
16 analyses useless for the purposes of estimating the investor required ROE for APT in  
17 this proceeding. The interstate pipeline proxy group he used is in no way applicable  
18 to APT's low risk pipeline operations. The Commission simply cannot rely on any of  
19 his analyses or conclusions, for doing so would run the real risk of greatly overstating  
20 the ROE and the revenue requirement for APT.

1           **B.       Constant Growth DCF Analyses**

2           **Q.       IS IT POSSIBLE TO PERFORM A MEANINGFUL DCF ANALYSIS ON**  
3           **MR. HEVERT’S INTERSTATE PIPELINE GROUP?**

4           A.       No. Many of the forecasted earnings growth for the companies in this group are  
5           unsustainably high and not at all reflective of long run earnings and dividend growth.  
6           For example, according to Mr. Hevert’s Exhibit RBH-1, Boardwalk Partners has  
7           earnings growth rates ranging from 15% to 20%, Energy Transfer Partners has a  
8           forecasted growth rate of 15%, and Kinder Morgan has a forecasted growth rate of  
9           13%. None of these growth rates are indicative of the low risk pipeline operations of  
10          APT. This is supported by the lower growth rates for the gas utility proxy group in  
11          Exhibit RAB-3.

12                       Including these excessive growth rates resulted in DCF ROE estimates that  
13          are unreasonable on their face. Mr. Hevert’s mean DCF ROE estimates in the 15%  
14          range further underscore the fact that his interstate pipeline group cannot be used to  
15          estimate the investor required return for APT. A ROE of over 15% is wildly  
16          inconsistent with APT’s low business risk operations.

17          **Q.       DID YOU EXAMINE THE ALLOWED GAS DISTRIBUTION UTILITY**  
18          **RETURNS PRESENTED IN MR. HEVERT’S EXHIBIT RBH-3?**

19          A.       Yes. Mr. Hevert’s Exhibit RBH-3 presented allowed ROEs for gas distribution  
20          utilities from 1980 through November 2016. The average allowed ROE for 2016 was  
21          9.49%. These allowed ROEs further elucidate how excessive Mr. Hevert’s  
22          recommended ROE is for APT’s low risk pipeline operations.



1 **Q. IN ADDITION TO THE INAPPLICABILITY OF THE INTERSTATE**  
2 **PIPELINE GROUP TO APT, SHOULD ANY OF THE COMPANIES IN**  
3 **MR. HEVERT'S GROUP BE EXCLUDED?**

4 A. Yes. Energy Transfer Partners, LP should be excluded because it is being acquired  
5 by Sonoco. Companies that are subject to merger activities are not appropriate  
6 candidates for inclusion in a proxy group. This is because the merger or acquisition  
7 will affect the company's stock price and perhaps its earnings growth forecasts.  
8 Indeed, Value Line suspended ETP's Timeliness ranking in anticipation of the  
9 merger.

10 **C. CAPM**

11 **Q. BRIEFLY SUMMARIZE THE MAIN ELEMENTS OF MR. HEVERT'S**  
12 **CAPM APPROACH.**

13 A. On page 49 of his Direct Testimony, Mr. Hevert testified that he used a projected  
14 30-year Treasury Bond yield as the risk-free rate. Mr. Hevert did not consider any  
15 shorter maturity bonds, such as the 5-year Treasury note.

16 Mr. Hevert then calculated ex-ante measures of total market returns using data  
17 from Bloomberg and Value Line. Total market returns from these two sources were  
18 13.09% using Bloomberg data and a 13.99% return using Value Line data.

19 Mr. Hevert used two different estimates for beta from Bloomberg and Value  
20 Line for the companies in his interstate pipeline proxy group.

21 **Q. IS IT APPROPRIATE TO USE FORECASTED OR PROJECTED BOND**  
22 **YIELDS IN THE CAPM?**

23 A. Definitely not. Current interest rates and bond yields embody all of the relevant  
24 market data and expectations of investors, including expectations of changing future

1 interest rates. The forecasted bond yield used by Mr. Hevert is speculative at best and  
2 may never come to pass. Current interest rates provide tangible and verifiable market  
3 evidence of investor return requirements today, and these are the interest rates and  
4 bond yields that should be used in both the CAPM and in the bond yield plus risk  
5 premium analyses. To the extent that investors give forecasted interest rates any  
6 weight at all, they are already incorporated in current securities prices.

7 **Q. SHOULD MR. HEVERT HAVE CONSIDERED SHORTER-TERM**  
8 **TREASURY YIELDS IN HIS CAPM ANALYSES?**

9 A. Yes. In theory, the risk-free rate should have no interest rate risk. 30-year Treasury  
10 Bonds do tend to face this risk, which is the risk that interest rates could rise in the  
11 future and lead to a capital loss for the bondholder. Typically, the longer the duration  
12 of the bond, the greater the interest rate risk. The 5-year Treasury note has much less  
13 interest rate risk than 20-year or 30-year Treasury Bonds and may be considered one  
14 reasonable proxy for a risk-free security.

15 **Q. PLEASE COMMENT ON MR. HEVERT'S USE OF BLOOMBERG AND**  
16 **VALUE LINE EARNINGS GROWTH ESTIMATES FOR THE S&P 500.**

17 A. Mr. Hevert used earnings growth estimates from these two sources to estimate the  
18 expected market return for his CAPM. According to the data contained in Exhibit  
19 RBH-4, the average Value Line growth rate is 10.13% and the average Bloomberg  
20 growth rate is 9.88%. The data I presented in my CAPM analyses show a much  
21 lower market risk premium based on the Value Line summary statistics, which is a  
22 much larger sample than the S&P 500 used by Mr. Hevert. In fact, the total expected  
23 market return in my CAPM analyses is less than 10%, significantly lower than the  
24 13% – 13.9% total return range used by Mr. Hevert.

1 **Q. WOULD USING THE BETAS FROM THE INTERSTATE PIPELINE GROUP**  
2 **OVERSTATE MR. HEVERT'S CAPM ANALYSES?**

3 A. Yes. The average betas used by Mr. Hevert were 1.042 – 1.233. Betas of this  
4 magnitude indicate companies that are above average risk, that is, they are riskier  
5 than the overall market. Clearly, APT's low risk pipeline operations are less risky,  
6 not more risky than the overall market. This is supported by the much lower average  
7 beta from my gas utility proxy group of 0.75 and Atmos Energy's beta of 0.70, both  
8 of which are lower than the average market beta of 1.0.

9 **D. Bond Yield Plus Risk Premium**

10 **Q. PLEASE SUMMARIZE MR. HEVERT'S RISK PREMIUM APPROACH.**

11 A. Mr. Hevert developed two sets of historical risk premiums using Commission-  
12 allowed returns for regulated gas distribution and pipeline utility companies and  
13 30-year Treasury Bond yields. He used regression analysis to estimate the value of  
14 the inverse relationship between interest rates and risk premiums during that period.  
15 Applying the regression coefficients to the average risk premium and using the  
16 current and projected 30-year Treasury yields I discussed earlier, Mr. Hevert's risk  
17 premium ROE estimate range for gas distribution companies is 9.95% – 10.30%. For  
18 interstate pipelines, Mr. Hevert's ROE range is 12.78% – 13.03%.

19 **Q. PLEASE RESPOND TO MR. HEVERT'S RISK PREMIUM ANALYSIS.**

20 A. First, the bond yield plus risk premium approach is imprecise and can only provide  
21 very general guidance on the current authorized ROE for a regulated electric utility.  
22 Risk premiums can change substantially over time. As such, this approach is a "blunt  
23 instrument," if you will, for estimating the ROE in regulated proceedings. In my  
24 view, a properly formulated DCF model using current stock prices and growth

1 forecasts is far more reliable and accurate than the bond yield plus risk premium  
2 approach, which relies on a historical risk premium analysis over a certain period of  
3 time.

4 Second, I recommend that the Commission reject the use of the forecasted  
5 Treasury Bond yield for the same reasons I described in my response to Mr. Hevert's  
6 CAPM approach.

7 Finally, using allowed returns on interstate pipelines is guaranteed to overstate  
8 the ROE for APT's low risk pipeline operations. If the Commission considers bond  
9 yield plus risk premium analyses at all, it should first reject this analysis as it applies  
10 to interstate pipelines for all of the reasons I discussed earlier in my testimony.

11 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

12 A. Yes.

## **RESUME OF RICHARD A. BAUDINO**

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### **EDUCATION**

#### **New Mexico State University, M.A.**

Major in Economics  
Minor in Statistics

#### **New Mexico State University, B.A.**

Economics  
English

Thirty-two years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

### **REGULATORY TESTIMONY**

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies  
Electric, Gas, and Water Utility Cost Allocation and Rate Design  
Revenue Requirements  
Gas and Electric industry restructuring and competition  
Fuel cost auditing  
Ratemaking Treatment of Generating Plant Sale/Leasebacks

## RESUME OF RICHARD A. BAUDINO

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### EXPERIENCE

**1989 to**

**Present:** **Kennedy and Associates: Consultant** - Responsible for consulting assignments in the area of revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

**1982 to**

**1989:** **New Mexico Public Service Commission Staff: Utility Economist** - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

### CLIENTS SERVED

#### Regulatory Commissions

Louisiana Public Service Commission  
Georgia Public Service Commission  
New Mexico Public Service Commission

#### Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System	Large Power Intervenors (Minnesota)
Air Products and Chemicals, Inc.	Tyson Foods
Arkansas Electric Energy Consumers	West Virginia Energy Users Group
Arkansas Gas Consumers	The Commercial Group
AK Steel	Wisconsin Industrial Energy Group
Armco Steel Company, L.P.	South Florida Hospital and Health Care Assn.
Assn. of Business Advocating Tariff Equity	PP&L Industrial Customer Alliance
Atmos Cities Steering Committee	Philadelphia Area Industrial Energy Users Gp.
CF&I Steel, L.P.	West Penn Power Intervenors
Cities of Midland, McAllen, and Colorado City	Duquesne Industrial Intervenors
Climax Molybdenum Company	Met-Ed Industrial Users Gp.
Cripple Creek & Victor Gold Mining Co.	Penelec Industrial Customer Alliance
General Electric Company	Penn Power Users Group
Holcim (U.S.) Inc.	Columbia Industrial Intervenors
IBM Corporation	U.S. Steel & Univ. of Pittsburg Medical Ctr.
Industrial Energy Consumers	Multiple Intervenors
Kentucky Industrial Utility Consumers	Maine Office of Public Advocate
Kentucky Office of the Attorney General	Missouri Office of Public Counsel
Lexington-Fayette Urban County Government	University of Massachusetts - Amherst
Large Electric Consumers Organization	WCF Hospital Utility Alliance
Newport Steel	West Travis County Public Utility Agency
Northwest Arkansas Gas Consumers	Steering Committee of Cities Served by Oncor
Maryland Energy Group	Utah Office of Consumer Services
Occidental Chemical	Healthcare Council of the National Capital Area
PSI Industrial Group	Vermont Department of Public Service

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2017**

<b>Date</b>	<b>Case</b>	<b>Jurisdict.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jornada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2017**

<b>Date</b>	<b>Case</b>	<b>Jurisdiction</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.



**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2017**

<b>Date</b>	<b>Case</b>	<b>Jurisdict.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2017**

<b>Date</b>	<b>Case</b>	<b>Jurisdict.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343- 000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042 -000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co., Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2017**

<b>Date</b>	<b>Case</b>	<b>Jurisdict.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania-American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenors	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Cost of debt.

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10/99	R-00994782	PA	Peoples Industrial Intervenor	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenor	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenor	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD & United States	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

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11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and HealthCare Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

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03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T Users Group	WV	West Virginia Energy	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

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07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation

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<b>Date</b>	<b>Case</b>	<b>Jurisdict.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
03/10	09-1352-	WV E-42T	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR- 09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E- GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009- 2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010- 2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010- 2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010- 2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010- 2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010- 2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699- E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design
04/11	R-2010- 2214415	PA	Central Pen Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011- 2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate



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<b>Date</b>	<b>Case</b>	<b>Jurisdict.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Corning Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co.	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

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08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

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2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital

**GUD No. 10580**  
**Atmos Pipeline - Texas**  
**ATM RFP Set No. 1**  
**Question No. 1-04**  
**Page 1 of 1**

**REQUEST:**

Please produce copies of credit reports for Atmos Energy and/or APT from the major credit rating agencies (S&P, Moody's, and Fitch) published since January 1, 2015.

**RESPONSE:**

Please see Attachment 1.

**ATTACHMENT:**

ATTACHMENT 1 - Atmos Pipeline - Texas, ATM-RFP\_1-04\_Att1 - Rating Agency Reports.pdf, 69 Pages.



**CREDIT OPINION**  
14 December 2016

Update

Rate this Research >>

**RATINGS**

**Atmos Energy Corporation**

Domicile	Dallas, Texas, United States
Long Term Rating	A2
Type	Senior Unsecured - Dom Curr
Outlook	Stable

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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# Atmos Energy Corporation

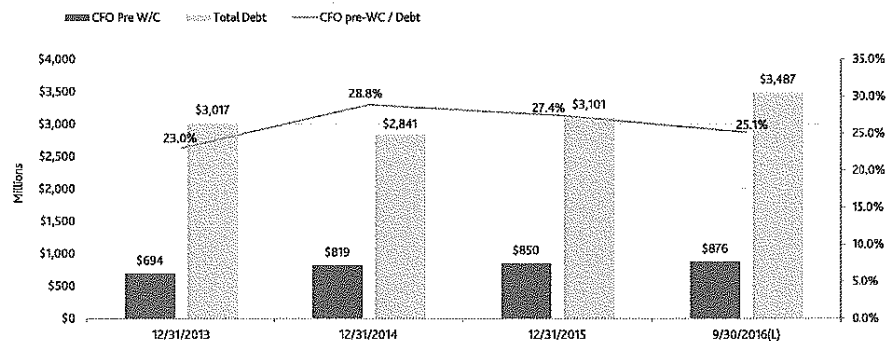
Regulated local gas distribution company

## Summary Rating Rationale

Atmos Energy Corporation's (Atmos) A2 rating is supported by its low risk natural gas distribution (LDC) and pipeline operations in the regulatory jurisdictions that are generally constructive. Atmos's rating factors in its good operating history, and a conservative management approach. The rating also reflects the company's stable and consistent financial profile and key credit metrics such as the cash flow from operations pre-working capital (CFO pre-WC) to debt ranging around the mid-20%.

Exhibit 1

Historical CFO Pre-WC, Total Debt and CFO Pre-WC to Debt



Source:

## Credit Strengths

- » Diverse array of generally supportive regulatory jurisdictions
- » Low business risk natural gas utility and pipeline operations
- » Consistent financial performance with stable credit metrics

## Credit Challenges

- » Large capital expenditure program

## Rating Outlook

Atmos' stable rating outlook reflects its supportive regulatory environments, low risk regulated activities that produce consistent financial performance and our expectation that the company will maintain adequate liquidity resources. The outlook also incorporates our

view that its credit metrics will be maintained around current levels, such as CFO pre-WC to debt ranging around the mid-20%.

### Factors that Could Lead to an Upgrade

- » A rating upgrade could be considered if the regulatory environments in which Atmos operates become more credit-supportive, particularly in states where Atmos has had some less than favorable regulatory outcomes. Also, a rating upgrade could be considered if Atmos is able to further strengthen its financial profile and credit metrics, including CFO pre-WC to debt above high 20% range, on a sustained basis.

### Factors that Could Lead to a Downgrade

- » A rating downgrade could be considered if Atmos' regulatory jurisdictions become less credit supportive resulting in increased regulatory lag or negatively affecting cost recovery. Its rating could also be downgraded if financial metrics deteriorate and remain weak for the rating, such as CFO pre-WC to debt below 22% on a sustained basis. In addition, merger and acquisition activity or other strategic activities that result in higher financial and business risks could also affect the rating negatively.

### Key Indicators

Exhibit 2

KEY INDICATORS [1]					
Atmos Energy Corporation					
	9/30/2012	9/30/2013	9/30/2014	9/30/2015	9/30/2016
CFO pre-WC + Interest / Interest	5.0x	6.0x	7.0x	7.9x	8.2x
CFO pre-WC / Debt	22.1%	23.0%	28.8%	27.4%	25.1%
CFO pre-WC – Dividends / Debt	17.6%	18.8%	23.7%	22.3%	20.1%
Debt / Capitalization	45.5%	44.6%	39.4%	40.3%	40.9%

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.  
Source: Moody's Financial Metrics™

### Detailed Rating Considerations

- Diversified generally supportive regulatory jurisdictions

Atmos has operations in eight states under a diverse array of generally credit supportive regulatory jurisdictions, where the company has opportunities to recover its costs and earn reasonable returns on a timely basis. Approximately 70% of Atmos' asset base is located in Texas, where we view the regulatory environment to be constructive. Texas has a regulatory framework, which supports and provides incentives to invest in system reliability and safety while reducing recovery lag. Texas has advanced pipeline safety regulations that exceed federal standards and benefits from a strong economy. The regulatory environment in Louisiana and Mississippi, where Atmos has its two next largest operations, also have credit supportive regulatory frameworks.

Atmos rate increases and rate design improvements have successfully increased and stabilized regulated margins. Atmos has addressed much of its regulatory lag through numerous and continual rate filings that have led to regular rate adjustments, outside of base rate cases, for relatively small amounts spread over its many jurisdictions. Formula and infrastructure mechanisms increase the certainty of obtaining timely rate relief while reducing the company's exposure to an adverse rate decision. As a result, over 90% of the company's annual capital spending begins to earn a return within 6 months, a credit positive. Because of the active use of formula and infrastructure mechanisms, rate increase requests through general rate cases are minimal. In fiscal year ending 2016, Atmos completed 19 filings which resulted in annualized increase in operating income of \$119 million. Atmos anticipates remaining consistent with this amount of filings for 2017, with expected annualized increases between \$90 million and \$110 million.

- Low business risk natural gas utility and pipeline operations

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Atmos' core business consists primarily of regulated low risk local distribution company (LDC) operations in eight states and a tariff-based pipeline in Texas (mostly serving its affiliate Mid-Tex). Atmos benefits from having constructive rate making mechanisms, which further reduce uncertainty and provide greater transparency. For example, Atmos utilizes weather normalization adjustments (WNA), which mitigate the risks and costs the company may encounter due to weather that is above or below normal. This adjustment allows Atmos to either increase or decrease customers' bills to offset the effect of gas usage due to abnormal weather. Another example includes Atmos' Purchased Gas Adjustment mechanism (PGA), which allows the company to pass through purchased gas costs to its customers, insulating the company from gas price fluctuation risks. Other mechanisms approved for Atmos include annual adjustment mechanisms in half of their states (mainly its larger service territories) and infrastructure enhancement mechanisms in 7 out of the 8 states. These mechanisms result in greater transparency in cash flows and accelerated recovery of capital spending, all credit positive.

Gas marketing, which accounted for less than 5% of Atmos' net income, has historically been Atmos' riskiest business segment, as it is exposed to commodity price, basis, counterparty, and other risks. In October 2016, Atmos announced an agreement to sell all of its equity interest in Atmos Energy Marketing (AEM, not rated) to a subsidiary company of CenterPoint Energy Inc. (CNP, Baa1 Stable) in a \$40 million all-cash deal. The net proceeds from the sale will be redeployed to fund infrastructure investment in regulated businesses. Once completed, this sale will fully exit Atmos from the non-regulated marketing business. We view divestiture of the non-regulated business as credit positive. The sale removes commodity exposure related to the gas marketing segment and allows Atmos to focus on the regulated business going forward, given their sizeable capex program over the next three years. The transaction is expected to close in the first quarter 2017.

- Large capital expenditure planned over the next 4 years

In fiscal 2016, Atmos invested \$1.1 billion with approximately 83% of that spending related to system safety and reliability, which included system integrity, pipeline integrity, system improvements, and expansion. With the robust capital expenditure in 2016, Atmos' rate base is estimated around \$6 billion. Regulatory pipeline gross profit increased in 2016 primarily due to an increase in revenue from the Gas Reliability Infrastructure Program (GRIP) filings approved in fiscal 2015 and 2016. Also, the 2014 rate design change related to the Rate Stabilization Clause (RSC) in Louisiana allows for deferred asset treatment on infrastructure spending, thus reduced associated regulatory lag in a previously lagging regulatory environment.

In 2017, Atmos expects to invest between \$1.1 billion and \$1.25 billion in consolidated capex, \$900 - \$950 million of which will be related to safety and reliability. The company plans to utilize a combination of its regulatory mechanisms to recover costs associated with an escalated capital expenditure program through 2020. Such mechanisms include the Gas Reliability Infrastructure Program (GRIP) and Rule 8.209 in Texas, and the Rate Stabilization Clause (RSC) in Louisiana, all which allow for timely recovery of capital invested in infrastructure safety and reliability.

Atmos is expected to invest between \$1 billion and \$1.4 billion annually from 2017 through 2020. The company plans to fund this large capex plan with a balance of internally generated cash flows, long-term debt and equity issuance to maintain their current capital structure.

- Consistent financial performance with stable credit metrics

Over the years, Atmos has been accruing sufficient rate increases to sustain a modest but steady improvement in its credit metrics. During fiscal year 2016, Atmos completed 19 regulatory proceedings, resulting in increases of \$81.8 million annual operating income (\$119 million including interim rate changes).

Atmos' cash flow from operations before working capital changes (CFO pre-WC) has been in the \$780 - \$850 million range in the last three years. In the last twelve months (LTM) ended 30 September 2016, it has generated CFO pre-WC of about \$880 million, up from approximately \$850 million in fiscal year 2015, resulting in CFO pre-WC to debt of 25%. Based on the robust capital investments with shorter regulatory lag, we expect the company's CFO pre-WC to be in the range of around \$900 million to \$1 billion over the next few years. The improvement in the CFO also includes the benefit from higher deferred income taxes. We expect Atmos to maintain key credit metrics consistent with the mid A range under the Low Business Risk scale in our regulated utilities rating methodology grid. For example, we expect CFO pre-WC to debt and CFO pre-WC minus dividends to debt to remain around the mid-20% and low-20% range, respectively.

## Liquidity Analysis

We expect Atmos to maintain a good liquidity profile over the next 12 months.

As of 30 September 2016, Atmos had approximately \$47.5 million of cash on hand. For the LTM ended 30 September 2016, Atmos had capital spending of about \$1.1 billion, primarily on reliability and safety, paid dividends of \$175 million and reported cash from operations of \$795 million.

On 5 October 2016, Atmos Energy amended its existing \$1.25 billion revolving credit agreement to increase the committed loan to \$1.5 billion, expiring September 2021. The amended facility retains the \$250 million accordion feature, which, if utilized, would increase borrowing capacity to \$1.75 billion. As of 30 September 2016, including outstanding letters of credit, Atmos had \$829 million of outstanding borrowings on the credit facility. The credit facility has a financial covenant stating that Atmos must maintain a total debt to capitalization ratio under 70%. Atmos was comfortably in compliance with the covenant at 30 September 2016, with a debt to capitalization ratio of 50%.

Atmos Energy Marketing (AEM) maintains two 364-day bilateral credit facilities: a \$25 million unsecured facility and a \$15 million revolving credit facility. Due to outstanding letters of credit, the total amount available under these bilateral credit facilities was \$32.8 million at 30 September 2016. We note that both facilities will terminate with the completion of the sale.

Atmos' next significant debt maturity is \$250 million of senior unsecured notes due in 2017 and another \$450 million maturing in 2019.

## Corporate Profile

Atmos Energy Corporation (Atmos, A2 senior unsecured, Stable), headquartered in Dallas, Texas, is primarily a regulated natural gas distribution and pipeline businesses, with a small non-regulated natural gas marketing businesses. Atmos serves over 3.1 million customers with operations in eight states (Texas, Louisiana, Mississippi, Tennessee, Kansas, Colorado, Kentucky and Virginia).

Atmos' largest segment, its regulated natural gas local distribution company (LDC), accounted for approximately 65% of consolidated net income in 2016. The company's regulated pipeline and storage operations consists of approximately 5,400 miles of intra-state pipeline in Texas. The Atmos Pipeline Texas (APT) division is one of the largest intra-state pipeline operations in the state and transports natural gas to Atmos' Mid-Tex Division and other third parties, as well as managing five natural gas reservoirs. APT accounted for 30% of net income in 2016. Atmos' third segment, natural gas management, transmission, storage and other services, only accounted for 5% of net income in 2016.



## Rating Methodology and Scorecard Factors

Exhibit 3

Rating Factors			Moody's 12-18 Month Forward View As of Date Published [3]	
Atmos Energy Corporation				
Regulated Electric and Gas Utilities Industry Grid [1][2]				
	Current FY 9/30/2016		Measure	Score
<b>Factor 1 : Regulatory Framework (25%)</b>				
a) Legislative and Judicial Underpinnings of the Regulatory Framework	A	A	A	A
b) Consistency and Predictability of Regulation	Aa	Aa	Aa	Aa
<b>Factor 2 : Ability to Recover Costs and Earn Returns (25%)</b>				
a) Timeliness of Recovery of Operating and Capital Costs	A	A	A	A
b) Sufficiency of Rates and Returns	Baa	Baa	Baa	Baa
<b>Factor 3 : Diversification (10%)</b>				
a) Market Position	A	A	A	A
b) Generation and Fuel Diversity	N/A	N/A	N/A	N/A
<b>Factor 4 : Financial Strength (40%)</b>				
a) CFO pre-WC + Interest / Interest (3 Year Avg)	7.7x	Aa	7.0x - 8.0x	Aa
b) CFO pre-WC / Debt (3 Year Avg)	27.0%	A	25% - 27%	A
c) CFO pre-WC - Dividends / Debt (3 Year Avg)	21.9%	A	20% - 23%	A
d) Debt / Capitalization (3 Year Avg)	40.2%	A	38% - 40%	Aa
<b>Rating:</b>				
Grid-Indicated Rating Before Notching Adjustment		A2		A1
HoldCo Structural Subordination Notching	0	0	0	0
a) Indicated Rating from Grid		A2		A1
b) Actual Rating Assigned		A2		A2

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

[2] As of 9/30/2016(L).

[3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.

Source: Moody's Financial Metrics™

## Ratings

Exhibit 4

Category	Moody's Rating
<b>ATMOS ENERGY CORPORATION</b>	
Outlook	Stable
Senior Unsecured	A2

Source: Moody's Investors Service

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REPORT NUMBER 1052281

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# S&P Global Ratings

## Research

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### Summary:

## Atmos Energy Corp.

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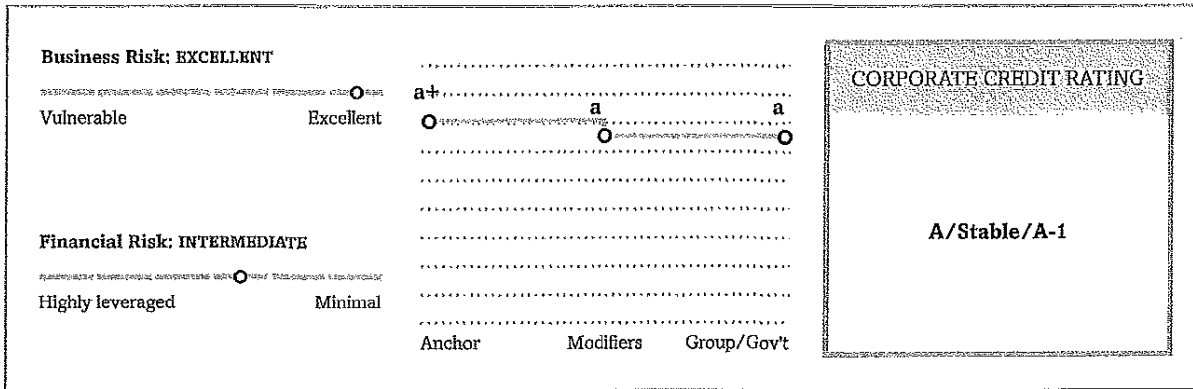
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Summary:

# Atmos Energy Corp.



## Rationale

Business Risk: Excellent	Financial Risk: Intermediate
<ul style="list-style-type: none"> <li>Regulated natural gas transmission and distribution operations with low operating risk.</li> <li>Operations in jurisdictions with generally constructive regulatory frameworks.</li> <li>Large service territory benefits from operating and regulatory diversity.</li> <li>Recent sale of unregulated gas marketing operations reduces business risk.</li> </ul>	<ul style="list-style-type: none"> <li>Robust credit-protection measures.</li> <li>Generally conservative financial policies.</li> <li>Elevated capital spending program necessitates ongoing balanced funding and timely cost recovery to support the credit profile.</li> </ul>

*Summary: Atmos Energy Corp.*

### Outlook: Stable

S&P Global Ratings' rating outlook on Atmos Energy Corp. is stable. Under our base-case scenario, we expect that Atmos will continue to effectively manage regulatory risk resulting in funds from operations (FFO) to debt that declines to 25% from 27%, while debt to EBITDA consistently remains under 3.5x over the next few years. The stable outlook also reflects our expectation that the company will continue to execute its low business risk regulated utility strategy.

#### Downside scenario

We could lower the ratings if the financial profile weakens due to Atmos' inability to recover invested capital in a timely manner or due to the use of incremental debt, such that FFO to debt consistently averages below 23%.

#### Upside scenario

We could raise the ratings by one notch if the company's financial performance improves, with FFO to debt that reliably exceeds 30%, reflecting the timely recovery of infrastructure investments and deferred tax benefits that reduce the company's current taxes.

## Our Base-Case Scenario

Assumptions	Key Metrics			
<ul style="list-style-type: none"> <li>Gross margin growth of about 5% - 6% per year driven by investment recovery mechanisms used throughout Atmos' service territory;</li> <li>Elevated capital spending plan of about \$1 billion to \$1.5 billion annually over the next few years; and</li> <li>Common dividends of about \$200 million annually.</li> </ul>	2015A	2016E	2017E	
	FFO/debt (%)	27.7	26-28	25-27
	Debt/EBITDA (x)	3.1	3.0-3.5	3.0-3.5

A--Actual. E—Estimate. FFO—Funds from operations.

## Business Risk: Excellent

Our assessment of Atmos' business risk profile incorporates the company's regulated, low-operating-risk natural gas transmission and distribution operations that benefit from generally constructive regulation across various jurisdictions. Most jurisdictions, but not all, offer infrastructure riders, weather normalization clauses, formula rates, and other features that allow Atmos to recover its costs with limited regulatory lag. Our assessment of business risk also accounts for Atmos' large customer base of more than 3.2 million customers across eight states, although the Texas operations represent about 70% of total operating income.

Atmos' recent sale of its unregulated gas marketing business transformed the company into a fully regulated gas utility which incrementally reduced business risk.

*Summary: Atmos Energy Corp.*

## Financial Risk: Intermediate

Under our base-case scenario, we expect that Atmos' financial risk profile will continue to benefit from timely recovery of invested capital, with FFO to debt of 25%–27% and debt to EBITDA of about 3.0x through 2018. We anticipate that Atmos will preserve its balanced capital structure over time at levels that are in line with the regulatory-approved capital structures that are allowed throughout its jurisdictions, further supporting its overall credit profile.

We assess Atmos' financial risk profile as intermediate using the medial volatility financial ratio benchmarks.

## Liquidity: Adequate

Atmos' liquidity is adequate to cover its needs over the next 12 to 18 months. We project the company's liquidity sources to exceed uses by 1.1x or more, the minimum threshold required for an adequate designation under our criteria, and that the company will also meet our other requirements for such a designation. Atmos' liquidity benefits from stable cash flow generation, ample availability under the revolving credit facilities, and manageable debt maturities over the next few years. The short-term rating on Atmos is 'A-1'.

Atmos has a \$1.5 billion revolving credit facility, maturing in September 2020. The facility backstops the company's commercial paper program.

Principal Liquidity Sources	Principal Liquidity Uses
<ul style="list-style-type: none"> <li>• Cash on hand of about \$100 million</li> <li>• Revolving credit facility of \$1.25 billion; and</li> <li>• FFO of about \$1 billion in 2017.</li> </ul>	<ul style="list-style-type: none"> <li>• Debt maturities of about \$1.1 billion in 2017, including outstanding commercial paper;</li> <li>• Maintenance capital spending of about \$800 million in 2017; and</li> <li>• Dividends of about \$200 million annually.</li> </ul>

## Other Credit Considerations

We assess the comparable ratings analysis modifier as negative, resulting in a one-notch negative adjustment to the rating, which captures FFO to debt that trends toward the lower end of the intermediate category.

## Group Influence

Atmos is subject to our group rating methodology criteria. We view Atmos as the parent that is also the driver of the group credit profile. As a result, Atmos' group and stand-alone credit profiles are the same at 'a', leading to an issuer credit rating of 'A'.

*Summary: Atmos Energy Corp.*

## Ratings Score Snapshot

### Corporate Credit Rating

A/Stable/A-1

### Business risk: Excellent

- **Country risk:** Very low
- **Industry risk:** Very low
- **Competitive position:** Strong

### Financial risk: Intermediate

- **Cash flow/Leverage:** Intermediate

Anchor: a+

### Modifiers

- **Diversification/Portfolio effect:** Neutral (no impact)
- **Capital structure:** Neutral (no impact)
- **Financial policy:** Neutral (no impact)
- **Liquidity:** Adequate (no impact)
- **Management and governance:** Satisfactory (no impact)
- **Comparable rating analysis:** Negative (-1 notch)

Stand-alone credit profile : a

- **Group credit profile:** a

## Issue Ratings

We rate Atmos' senior unsecured debt obligations at the same level as our issuer credit rating on the company given the absence of more senior obligations in its capital structure.

We rate Atmos' commercial paper program 'A-1', reflecting the issuer credit rating and our assessment of its liquidity as adequate.

## Related Criteria And Research

### Related Criteria

- Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013
- Corporate Methodology, Nov. 19, 2013
- Corporate Methodology: Ratios And Adjustments, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013