

**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Public Meeting held May 18, 2023

Docket Number: M-2023-3040145

**BUREAU OF TECHNICAL UTILITY SERVICES**

**REPORT ON THE QUARTERLY EARNINGS**

**OF JURISDICTIONAL UTILITIES**

**FOR THE YEAR ENDED**

**December 31, 2022**

Gladys Brown Dutrieuille, Chairman  
Stephen M. DeFrank, Vice Chairman  
Ralph V. Yanora  
Kathryn L. Zerfuss  
John F. Coleman, Jr.

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## **Introduction:**

On September 20, 1991, the Commission initiated a rulemaking at L-00910061 pertaining to earnings disclosures by the public utilities subject to its jurisdiction. At that docket, the Commission stated that the submission of accurate, reliable and complete earnings disclosure reports, at regular intervals, is essential to the fulfillment of the broad regulatory oversight responsibilities entrusted to the Commission by the Legislature in the Public Utility Code. The earnings disclosure regulations promulgated by the Commission were adopted October 1, 1992, and published January 23, 1993, at 23 Pa.B. 463. Based upon those regulations, codified at 52 Pa. Code, Chapter 71, a reporting format was developed and distributed to the jurisdictional fixed utilities of Pennsylvania.

All fixed utilities having jurisdictional revenues of \$1,000,000 or more, for a calendar year, are required to file the report by March 31 of each year. Such reports are to be based upon the results of operations for the 12-month period ending December 31 of the prior year. Utilities having more than \$10,000,000 in jurisdictional revenues are also required to file reports for the 12 months ending on March 31, June 30, and September 30 of each year. On November 30, 2004, however, the Pennsylvania General Assembly signed into law Act 183 concerning alternative telecommunications regulation and broadband deployment. As a result of Act 183, the reporting requirements for the PUC jurisdictional telecommunications companies of Pennsylvania have been streamlined at section 3015(e) of the Public Utility Code. A quarterly earnings report is not listed among those reports now required of PUC jurisdictional telecommunications utilities in Pennsylvania and, therefore, this report does not address telephone company earnings.

The reports have been filed for the period ended December 31, 2022.<sup>1</sup> The Finance Staff of the Bureau of Technical Utility Services has reviewed the reports and has prepared this summary report for public release. This report sets forth the achieved return on equity for each company, the last allowed return for that utility, a market return as determined through the analysis of the barometer group data and the most recent returns allowed, per industry, by the Pennsylvania Public Utility Commission and by other regulatory bodies. Where a utility has not filed a report, the reasons for not filing are indicated.

Questions pertaining to the preparation and contents of this Report should be directed to Ms. Erin Laudenslager, Manager - Finance, Bureau of Technical Utility Services, at (717) 705-4364.

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<sup>1</sup> UGI Utilities, Inc. –Electric Division, Columbia Gas of Pennsylvania, Inc., and National Fuel Gas Distribution Corporation have rate filings at Docket Nos. R-2022-3037368, R-2022-3031211, and R-2022-3035730 respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4..

The equity return summaries that follow in Attachment A are, for each quarter;

ACTUAL

1. Based on actual results of operations

and

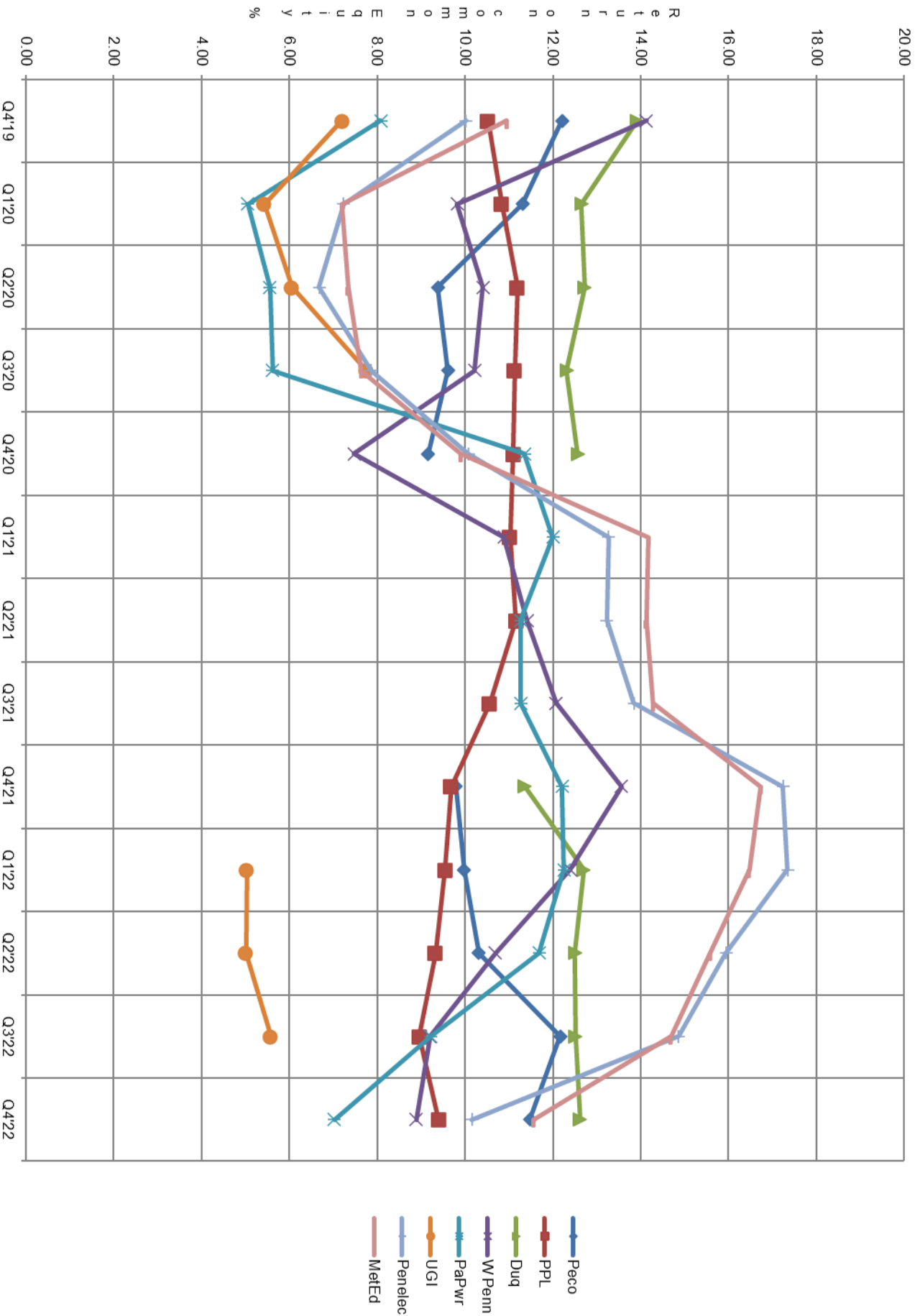
ADJUSTED

2. Based on company proposed pro forma and ratemaking adjustments

**ELECTRIC UTILITIES  
EQUITY RETURNS BY QUARTER**

<b>QTR</b>	<b>END</b>	<b>Peco</b>		<b>PPL</b>		<b>Duq</b>		<b>W Penn</b>		<b>PaPwr</b>		<b>UGI</b>		<b>Penelec</b>		<b>MetEd</b>	
		<b>ACT</b>	<b>ADJ</b>	<b>ACT</b>	<b>ADJ</b>	<b>ACT</b>	<b>ADJ</b>	<b>ACT</b>	<b>ADJ</b>	<b>ACT</b>	<b>ADJ</b>	<b>ACT</b>	<b>ADJ</b>	<b>ACT</b>	<b>ADJ</b>	<b>ACT</b>	<b>ADJ</b>
2017	1	13.01	11.40	9.76	8.49	9.53	8.99					22.86	6.81				
	2	12.98	11.40	10.71	9.70	9.86	9.24	8.23	7.38	7.32	7.97	21.96	6.74	9.23	9.20	9.74	9.35
	3	12.84	10.52	10.15	9.30	9.53	9.23	7.63	7.24	8.32	9.08	16.13	5.22	9.61	9.50	11.37	10.97
	4	12.07	9.11	11.07	10.63			9.47	9.12	8.46	8.19			11.70	10.93	12.58	11.67
2018	1			12.53	11.36			10.35	9.08	9.03	8.08			11.84	9.93	12.77	11.38
	2			11.05	9.49			9.92	8.52	8.79	7.57			11.56	9.39	11.90	10.26
	3			11.19	9.83			11.41	6.74	10.30	5.80			13.97	8.44	14.46	9.62
	4	10.88	7.61	11.10	10.15	12.06	9.39	9.92	6.78	10.64	7.43			13.27	9.31	13.05	7.40
2019	1	12.65	7.93	10.10	8.96	12.58	9.73	9.08	6.62	9.14	7.61	7.05	5.22	12.03	8.07	12.54	7.66
	2	12.34	7.94	10.51	8.95	12.38	9.34	8.02	5.99	8.29	7.10	5.77	3.22	11.42	8.16	11.72	7.21
	3	12.49	7.96	10.61	8.99	13.88	9.33	9.90	7.87	9.28	7.76	6.20	2.04	11.26	8.78	12.25	7.77
	4	12.21	8.50	10.53	10.40	13.92	9.08	14.13	7.07	8.08	6.90	7.20	2.38	10.02	8.54	10.96	9.27
2020	1	11.31	8.35	10.84	11.20	12.66	8.31	9.82	5.54	5.06	6.71	5.43	2.26	7.24	8.74	7.20	8.31
	2	9.38	8.17	11.20	10.81	12.73	8.56	10.41	5.53	5.56	6.55	6.06	2.01	6.68	7.94	7.34	8.04
	3	9.62	8.56	11.14	11.20	12.32	8.08	10.22	5.42	5.62	6.74	7.76	0.41	7.87	8.75	7.64	8.37
	4	9.16	7.64	11.10	11.48	12.57	8.15	7.48	5.65	11.36	7.34			10.08	8.62	9.91	8.64
2021	1			11.03	11.76			10.89	6.64	12.01	7.01			13.27	8.96	14.19	9.44
	2			11.17	11.73			11.42	7.07	11.27	5.94			13.23	8.15	14.13	9.06
	3			10.57	10.65			12.08	7.91	11.27	5.91			13.85	8.67	14.29	9.38
	4	9.79	7.59	9.69	10.57	11.37	11.23	13.57	7.85	12.21	5.42			17.25	8.04	16.74	9.40
2022	1	9.98	6.99	9.55	9.49	12.71	10.91	12.40	6.99	12.26	5.30	5.03	4.93	17.35	7.83	16.48	9.40
	2	10.32	7.19	9.33	9.54	12.51	10.22	10.70	5.78	11.69	5.04	5.01	3.89	15.95	6.93	15.59	8.72
	3	12.17	7.42	8.97	9.14	12.52	9.74	9.21	4.43	9.23	4.35	5.58	0.65	14.87	5.88	14.70	7.57
	4	11.48	6.59	9.41	9.18	12.62	9.54	8.89	4.19	7.03	3.44			10.16	5.07	11.56	7.55

Major Pennsylvania Electric Utilities - Actual Equity Returns by Quarter

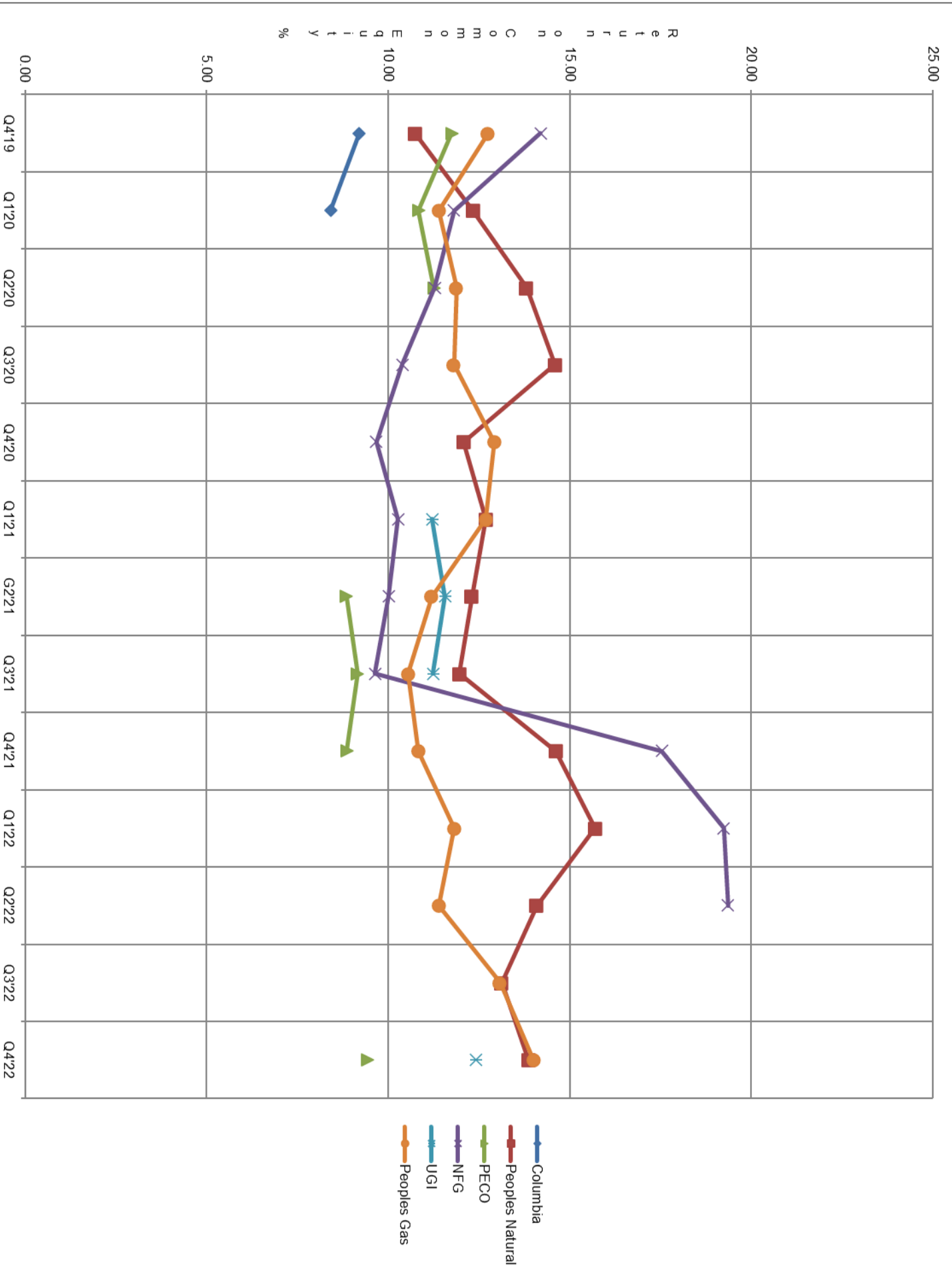


**GAS UTILITIES  
EQUITY RETURNS BY QUARTER**

QTR	END	Columbia		Peoples Natural		PECO		NFG		UGI		Peoples Gas	
		ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ
2017	1	10.52	10.17	9.96	9.27	11.45	12.55	12.84	9.26	21.08	10.09	11.82	12.34
	2	9.15	9.81	9.41	9.71	10.87	12.17	13.33	10.53	19.16	9.44	11.89	13.47
	3	8.15	8.77	6.69	6.40	11.26	10.92	10.92	10.00	13.34	9.03	12.04	13.36
	4	7.76	8.48	9.66	7.27	11.48	9.83	11.58	10.56	11.06	8.62	12.65	11.79
2018	1			11.42	7.00	12.65	9.77	14.40	10.20	12.82	7.90	14.02	10.17
	2			11.03	6.80	12.66	9.05	12.06	9.89	16.75	6.80	12.78	10.15
	3			10.21	7.43	12.54	8.36	12.52	10.12	18.69	8.04	13.03	10.20
	4	11.39	9.81			12.86	8.68	12.24	10.21			13.92	11.13
2019	1	12.76	10.22			13.68	9.06	11.83	10.93			14.10	10.71
	2	12.04	9.92			12.62	8.41	14.56	9.99			13.80	11.66
	3	11.77	9.85			12.40	8.31	14.17	9.75			14.02	11.63
	4	9.21	9.09	10.74	12.26	11.75	6.99	14.20	9.77			12.76	11.20
2020	1	8.42	9.11	12.34	12.34	10.84	7.68	11.82	9.92			11.40	11.07
	2			13.81	12.38	11.26	7.25	11.28	9.05			11.89	11.10
	3			14.60	12.77			10.39	8.25			11.82	11.50
	4			12.09	10.37			9.68	8.12			12.93	12.11
2021	1			12.69	10.43			10.27	8.47	11.22	7.70	12.69	11.76
	2			12.31	10.23	8.85	5.13	10.02	8.47	11.57	8.04	11.20	11.61
	3			11.97	10.27	9.16	5.27	9.64	8.45	11.24	6.97	10.56	11.38
	4			14.62	10.52	8.86	5.79	17.54	8.02			10.84	10.28
2022	1			15.71	10.93			19.24	7.88			11.83	12.09
	2			14.09	11.67			19.36	6.87			11.40	12.19
	3			13.13	10.30							13.08	11.31
	4			13.87	10.56	9.43	5.93			12.42	7.62	14.01	14.19



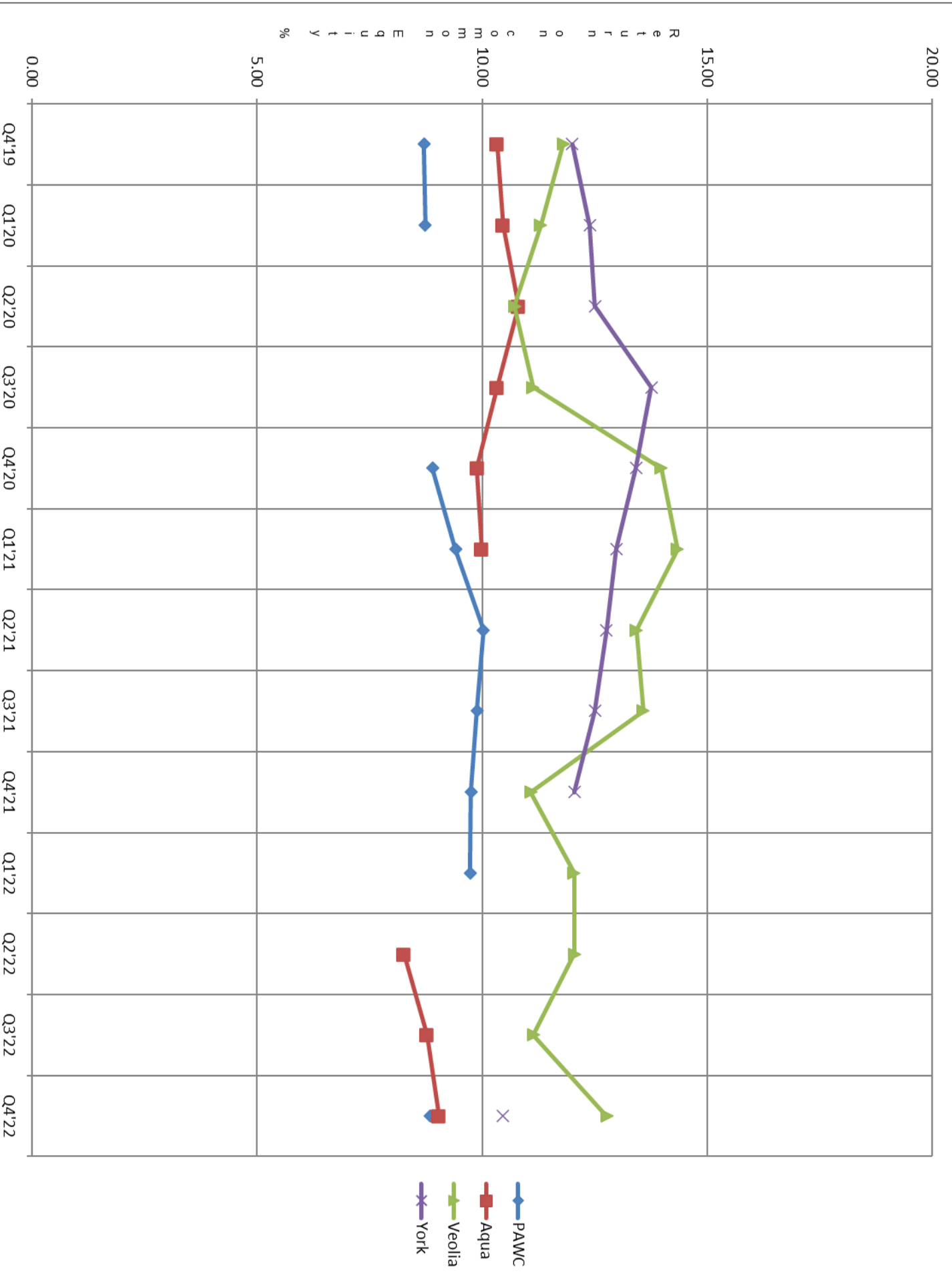
Major Pennsylvania Gas Utilities - Actual Equity Returns by Quarter



**WATER UTILITIES  
EQUITY RETURNS BY QUARTER**

<b>QTR</b>	<b>END</b>	<b>PAWC</b>		<b>Aqua</b>		<b>Veolia</b>		<b>York</b>	
		<b><u>ACT</u></b>	<b><u>ADJ</u></b>	<b><u>ACT</u></b>	<b><u>ADJ</u></b>	<b><u>ACT</u></b>	<b><u>ADJ</u></b>	<b><u>ACT</u></b>	<b><u>ADJ</u></b>
2017	1			11.34	10.04	9.22	9.60	11.61	9.50
	2			10.99	9.22	9.03	9.07	11.60	9.10
	3			10.99	9.23	8.57	8.57	11.60	8.70
	4			11.05	8.63	8.75	8.73	11.30	8.40
2018	1	9.55	8.97	10.94	8.41				
	2	10.27	9.65						
	3	11.03	9.48						
	4	10.08	9.03					10.70	10.30
2019	1	9.82	8.87					11.60	11.60
	2	9.72	8.90	9.84	9.04	10.78	10.36	11.80	11.80
	3	9.13	8.41	10.69	8.84	11.55	11.75	12.00	12.00
	4	8.71	8.09	10.33	8.24	11.80	12.15	12.00	9.80
2020	1	8.74	7.56	10.47	8.31	11.30	11.30	12.39	12.39
	2			10.81	8.57	10.72	10.69	12.51	12.51
	3			10.33	8.55	11.13	10.69	13.76	13.76
	4	8.90	8.15	9.89	8.30	13.98	10.17	13.42	9.94
2021	1	9.41	8.90	9.99	8.38	14.34	10.48	12.98	9.74
	2	10.03	9.28			13.43	9.83	12.76	9.66
	3	9.89	8.65			13.58	9.07	12.51	9.32
	4	9.75	8.05			11.08	9.75	12.05	8.86
2022	1	9.73	7.82			12.04	9.68		
	2			8.26	8.91	12.05	9.79		
	3			8.78	8.85	11.14	9.30		
	4	8.85	8.97	9.04	8.88	12.77	9.49	10.47	10.57

Major Pennsylvania Water Companies - Actual Equity Returns by Quarter



Attachment B includes:

A. Overall Returns on rate base

1. Actual
2. Company proposed pro forma and ratemaking adjustments

and

B. Equity Returns

1. Actual
2. Company proposed pro forma and ratemaking adjustments

Summary of Returns  
For the Year Ended December 31, 2022

COMPANY NAME	<u>OVERALL RETURN</u>		<u>EQUITY RETURN</u>		ROE	YEAR
	ACTUAL	ADJ	ACTUAL	ADJ	AUTH	AUTH
<b>ELECTRIC</b>						
<b><u>\$10,000,000 Revenues</u></b>						
PECO Energy - Electric Operations	7.98	5.26	11.48	6.59	Settled	2021
PPL Electric Utilities Corp.	7.23	7.10	9.41	9.18	Settled	2015
Duquesne Light Company	8.79	7.11	12.62	9.54	Settled	2021
West Penn Power Company	6.70	4.33	8.89	4.19	Settled	2017
Pennsylvania Power Company	5.58	3.77	7.03	3.44	Settled	2017
UGI Utilities, Inc. - Electric Division*					Settled	2021
Pennsylvania Electric Company	7.32	4.65	10.16	5.07	Settled	2017
Metropolitan Edison Company	8.03	5.90	11.56	7.55	Settled	2017
<b><u>Over \$1,000,000 Revenues</u></b>						
Citizens Electric Company	5.04	6.65	5.21	7.04	9.54	2020
Pike County Light & Power Co.	9.48	7.57	15.82	11.54	Settled	2014
Wellsboro Electric Company	9.02	9.02	23.19	23.19	9.31	2020
<b>GAS</b>						
<b><u>\$10,000,000 Revenues</u></b>						
Columbia Gas of PA, Inc.*					Settled	2022
Peoples Natural Gas Company LLC	8.90	7.43	13.87	10.56	Settled	2019
PECO Energy - Gas Operations	6.84	4.88	9.43	5.93	10.24	2021
National Fuel Gas Distribution Co.*					Settled	2006
UGI Utilities, Inc. – Gas Division	8.59	6.17	12.42	7.62	Settled	2020
Peoples Gas Company, LLC	10.09	9.23	14.01	14.19	Settled	2013
<b><u>\$1,000,000 to \$10,000,000 Revenues</u></b>						
North East Heat & Light Co.	7.40	7.40	7.52	7.52	11.00	2008
Valley Energy, Inc.	4.02	4.14	3.83	4.00	9.73	2020
Pike County Light & Power Co.	0.71	3.01	-3.63	1.52	Settled	2014
Leatherstocking Gas Company	-1.83	-1.83	-10.13	-10.13	Settled	2023
<b>WATER</b>						
<b><u>\$10,000,000 Revenues</u></b>						
PA American Water Company	6.81	6.90	8.85	8.97	Settled	2021
Aqua Pennsylvania	6.84	6.72	9.04	8.88	10.00	2022
York Water Company	8.27	8.27	10.47	10.57	Settled	2019
Veolia Water Pennsylvania, Inc.	8.80	7.04	12.77	9.49	Settled	2018
<b><u>\$1,000,000 to \$10,000,000 Revenues</u></b>						
Newtown Artesian Water Co.	11.19	8.00	15.44	9.67	Settled	2019
Columbia Water Company	4.60	4.60	5.31	5.31	Settled	2015
York Water Company- Wastewater	-0.56	1.67	-2.32	1.11	Settled	2019
Veolia Water Bethel, Inc.	10.07	7.42	15.14	10.20	Settled	2012

\* UGI Utilities, Inc. –Electric Division, Columbia Gas of Pennsylvania, Inc., and National Fuel Gas Distribution Corporation have rate filings at Docket Nos. R-2022-3037368, R-2022-3031211, and R-2022-3035730 respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

**ALLOWED RATES OF RETURN ON COMMON EQUITY**

This is a historical chart that shows the most recent rate cases for select companies in electric, gas, and water. A docket number followed by their final return on equity and year is also given.

**ELECTRIC**

**Docket Number**      **ROE (%)**      **Year**

Recent PA PUC Allowed

Duquesne Light Company	R-2021-3024750	Settled	2021
PECO Energy – Electric Operations	R-2021-3024601	Settled	2021
UGI Utilities, Inc. – Electric	R-2021-3023618	Settled	2021
Pennsylvania Electric Company	R-2016-2537352	Settled	2017
Metropolitan Edison Company	R-2016-2537349	Settled	2017
Pennsylvania Power Company	R-2016-2537355	Settled	2017
West Penn Power Company	R-2016-2537359	Settled	2017

Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services. **8.05-10.74**

**GAS**

Recent PA PUC Allowed

Columbia Gas of Pennsylvania, Inc.	R-2022-3031211	Settled	2022
PECO Energy – Gas Operations	R-2022-3030218	Settled	2022
UGI Utilities, Inc. – Gas Division	R-2021-3030218	Settled	2022
Peoples Natural Gas Company	R-2018-3006818	Settled	2019
Peoples Gas Company	R-2013-2355886	Settled	2013

Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services. **8.17-10.65**

**WATER**

Recent PA PUC Allowed

PA American Water	R-2022-3031672	Settled	2022
York Water	R-2022-3031340	Settled	2023
Aqua Pennsylvania	R-2021-3027385	10.00	2022
PA American Water	R-2020-3019369	Settled	2021
Veolia Water f/k/a Suez Water	R-2018-3000834	Settled	2018
Columbia Water	R-2017-2598203	Settled	2017

Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services. **6.76-9.55**

**Distribution System Improvement Charge (DSIC) Eligible Utilities**  
**Return on Equity (ROE) Summary**

	Utility Adjusted ROE <sup>2</sup> (%)	Commission Approved ROE <sup>3</sup> (%)
<b>ELECTRIC</b>		
PECO Energy – Electric Operations	6.59	9.55
PPL Electric Utilities Corp.	9.18	9.55
Duquesne Light Company	9.54	9.55
West Penn Power Company	4.19	9.55
Pennsylvania Power Company	3.44	9.55
Pennsylvania Electric Company	5.07	9.55
Metropolitan Edison Company	7.55	9.55
UGI Utilities, Inc.- Electric Division*		9.55
<b>GAS</b>		
Columbia Gas of PA, Inc.*		10.15
Peoples Natural Gas Company LLC	10.56	10.15
PECO Energy – Gas Operations	5.93	10.15
Peoples Gas Company, LLC	14.19	10.15
UGI Utilities, Inc. – Gas Division	7.62	10.15
<b>WATER</b>		
PA American Water Company	8.97	9.75
PA American – Wastewater	8.97	9.75
AQUA Pennsylvania <sup>4</sup>	8.88	10.00
AQUA Pennsylvania – Wastewater <sup>5</sup>	8.88	10.00
York Water Company	10.57	9.75
Veolia Water Pennsylvania, Inc.	9.49	9.75
Columbia Water Company	5.31	9.75
Newtown Artesian Water	9.67	9.75

\* UGI Utilities, Inc. –Electric Division and Columbia Gas of Pennsylvania, Inc. have rate filings at Docket Nos. R-2022-3037368 and R-2022-3031211, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

2 Each utility lists adjustments on Schedule B of their quarterly financial report.

3 The ROE is approved in a utility's most recent fully litigated base rate proceeding for which a final order was entered not more than two years prior to the effective date of the DSIC. If more than two years have elapsed between the entry of a final order and the DSIC effective date, the ROE is from this report. If the base rate proceeding is settled, without a stipulated ROE, the ROE is from this report.

4 The Commission approved ROE of Aqua Pennsylvania, Inc. includes an additional adjustment of 0.25% for management effectiveness.

5 The Commission approved ROE of Aqua Pennsylvania Wastewater, Inc. includes an additional adjustment of 0.25% for management effectiveness.

## Explanation of Discounted Cash Flow (DCF) and Capital Asset Pricing Model (CAPM)

### Barometer Group Criteria

The criteria used for determining the industry barometer groups used to calculate ROEs in this report are as follows:

- 50% or more of the company's assets must be related to the jurisdictional utility industry;
- The company's stock must be publicly traded and must have at least three years of earnings history;
- Companies targeted by merger and acquisition (M&A) activity will be excluded; companies involved in M&A activity may be excluded;
- Investment information for the company must be available to the Commission from more than one source;
- The barometer group companies must have an investment grade credit rating (S&P BBB- or better, Moody's Baa3 or better); and
- Geographic Regions:
  - EDCs: *Value Line* Investment Survey's East, Central, and West Group Electric Utility companies;
  - NGDCs: *Value Line* Investment Survey's Natural Gas Utility industry group companies;
  - Water/Wastewater: *Value Line* Investment Survey's Water Utility industry group companies.

The barometer group companies are reviewed by staff on a quarterly basis and make any changes to these companies based upon the criteria above.

### ROE Calculations

The Commission consistently uses the DCF model to determine the appropriate cost of equity for utilities. In this report, the DSIC ROE is calculated using two DCF models.

TUS uses the following formula to calculate the current dividend DCF:  $K = D_1/P_0 + G$

TUS uses the following formula to calculate the 52-week average dividend DCF:  $K = D_0/P_a + G$

Definitions:

K	=	Cost of equity
D <sub>1</sub>	=	Dividend expected during the year
	=	$D_0 + \frac{1}{2}g$
D <sub>0</sub>	=	Latest indicated dividend, obtained from Yahoo! Finance
g	=	Expected 5-year dividend growth rate of barometer group obtained from Value Line Investment Survey.
P <sub>0</sub>	=	Current price of the stock, obtained from Yahoo! Finance
P <sub>a</sub>	=	Average of high and low stock price over the latest 52-week period, obtained from Yahoo! Finance
G	=	Average of 5-year expected earnings growth rate forecasts obtained from Value Line, Zacks Investment Survey, and Yahoo! Finance.



The CAPM uses the yield of a risk-free interest-bearing obligation plus a rate of return premium that is proportional to the systematic risk of an investment.

TUS uses the following formula to calculate CAPM:  $K = \beta(R_m - R_f)$

Three components are necessary to calculate the CAPM cost of equity:

- $\beta$  = Beta, a measure of systematic risk for each stock
- $R_f$  = The risk-free rate of return, 10-year U.S. Treasury yields are used for  $R_f$ .  
Yields are taken from the previous two quarters and forecasted next four quarters.
- $R_m$  = Total return of the equity market as determined by the SBBI Yearbook

*The Commission determines the ROE used for DSIC purposes based on the range of reasonableness from the DCF barometer group data, CAPM data, recent ROEs adjudicated by the Commission, and informed judgment.*

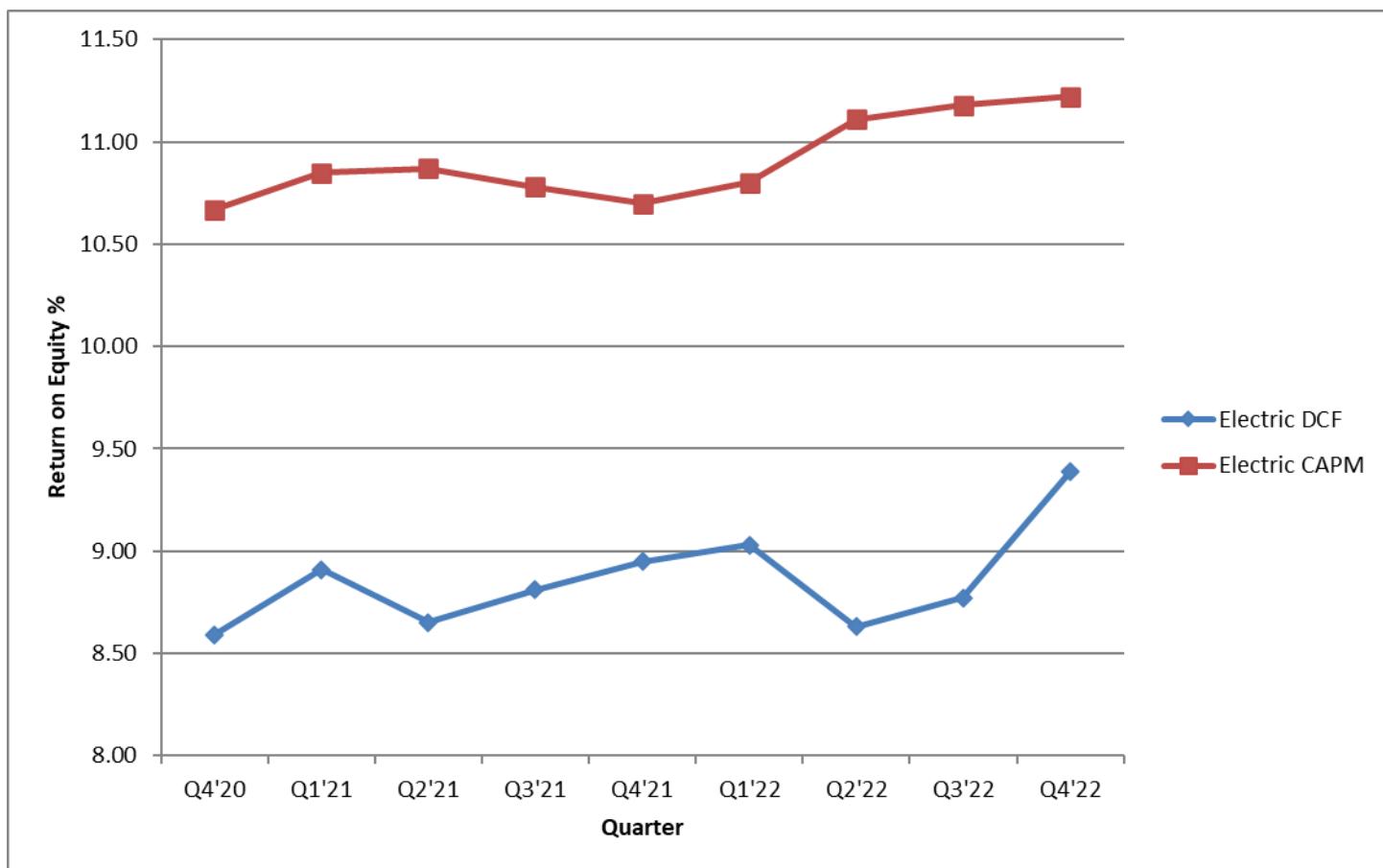
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

<b>Market Based Returns on Common Equity<sup>1</sup></b>				
April 21, 2023				
<b><u>Electric Company Barometer Group</u></b>				
				Cost Rates
				<u>%</u>
(1)	Current DCF:			9.39
(2)	52-Week Average DCF:			<u>9.40</u>
(3)	Overall DCF ((1) + (2)) / 2 :			<u>9.39</u>
(4)	Market Indicated Common Equity Cost Rate Range: @ 1 standard deviation around the mean. <sup>2</sup>			<u>8.05-10.74</u>
(5)	CAPM Check of DCF Reasonableness:			11.22
(6)	Recent Commission Approved ROEs <sup>3</sup> : *None within last two years			*
(7)	Distribution System Improvement Charge (DSIC) Return <sup>4</sup> :			<u>9.55%</u>
<sup>1</sup> As calculated by the Bureau of Technical Utility Services				
<sup>2</sup> Standard Deviation of 58 DCF observations				
<sup>3</sup> Base rate case ROEs within last two years, fully litigated or stipulated for DSIC purposes				
<sup>4</sup> Commission authorized Return on Equity (ROE) for DSIC purposes				
Any questions concerning DSIC should be directed to Marc Hoffer of the Bureau of Technical Utility Services at (717) 787-1869.				

### Historic Electric Industry Barometer Group DCF and CAPM Average ROEs

Electric		
	DCF	CAPM
Q4'20	8.59	10.67
Q1'21	8.91	10.85
Q2'21	8.65	10.87
Q3'21	8.81	10.78
Q4'21	8.95	10.70
Q1'22	9.03	10.80
Q2'22	8.63	11.11
Q3'22	8.77	11.18
Q4'22	9.39	11.22

Chart of Historic Electric Industry DCF and CAPM Average ROEs



Barometer electric companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52-week average DCF. A final average of the two calculations is also shown at the bottom.

Electric Company Barometer Group					
Calculation of a Current Dividend Yield					
	Closing	Latest	Ind. Div.		
	Market	Indicated	Plus 1/2	Current	
	Price (Po)	Dividend	Div. Growth	Dividend	
	<u>4/21/2023</u>	<u>(Do)</u>	<u>Rate (D1)</u>	<u>Yield(D1/Po)</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(%)	(%)
Allete, Inc.	63.80	2.71	2.76	4.32	11.82
Alliant Energy Corp	55.29	1.81	1.86	3.37	9.61
Ameren Corp	89.96	2.52	2.60	2.89	9.69
American Electric Power	93.92	3.32	3.41	3.63	9.32
AVANGRID, Inc.	40.82	1.76	1.77	4.34	8.88
Avista Corp	44.66	1.84	1.88	4.20	9.57
CMS Energy Corp	61.63	1.95	2.01	3.26	10.76
Consolidated Edison	99.04	3.24	3.29	3.32	7.53
Dominion Energy	57.71	2.67	2.68	4.64	9.44
DTE Energy Company	113.69	3.81	3.87	3.40	9.37
Duke Energy Company	98.36	4.02	4.06	4.13	9.79
Edison International	72.93	2.95	3.02	4.15	10.78
Entergy Corp.	108.64	4.28	4.37	4.02	7.32
Eversource Energy	78.84	2.70	2.79	3.54	10.04
Exelon Corporation	43.22	1.44	1.44	3.33	9.83
FirstEnergy Corp	40.61	1.56	1.58	3.90	7.22
Fortis Inc.	44.19	1.68	1.73	3.92	8.70
IDACORP, Inc..	111.32	3.16	3.26	2.93	6.90
NextEra Energy, Inc.	78.99	1.87	1.96	2.49	11.75
NorthWestern Corp	59.27	2.56	2.59	4.36	9.23
OGE Energy Corp	37.62	1.66	1.68	4.48	12.83
Otter Tail Corp	73.99	1.75	1.81	2.45	9.20
PPL Corporation	28.69	0.96	0.94	3.28	8.73
Pinnacle West Capital Corp	80.59	3.46	3.49	4.34	9.32
Portland General Electric Co.	50.56	1.81	1.86	3.68	8.77
Public Service Enterprise Group	64.09	2.28	2.34	3.65	8.01
Southern Company	73.61	2.80	2.85	3.87	9.80
Xcel Energy Inc.	70.44	2.08	2.15	3.05	9.38
Group Average	68.95	2.45	2.50	3.69	9.40
Group Average G				5.70	
<b>DCF</b>				<b>9.39</b>	

Electric Company Barometer Group						
52-week Average Dividend Yield Calculation						
				Latest	Average	
				Indicated	Dividend	
	High	Low	Average (Pa)	Dividend (Do)	Yield (Do/Pa)	DCF
	(\$)	(\$)	(\$)	(\$)	(%)	(%)
Allete, Inc.	67.45	47.77	57.61	2.71	4.70	12.20
Alliant Energy Corp	64.62	47.19	55.91	1.81	3.24	9.47
Ameren Corp	97.53	73.28	85.41	2.52	2.95	9.75
American Electric Power	105.60	80.30	92.95	3.32	3.57	9.26
AVANGRID, Inc.	51.71	37.44	44.58	1.76	3.95	8.48
Avista Corp	45.29	35.72	40.51	1.84	4.54	9.91
CMS Energy Corp	72.19	52.41	62.30	1.95	3.13	10.63
Consolidated Edison	102.21	78.10	90.16	3.24	3.59	7.80
Dominion Energy	86.28	52.03	69.16	2.67	3.86	8.66
DTE Energy Company	137.34	100.64	118.99	3.81	3.20	9.17
Duke Energy Company	115.83	83.76	99.80	4.02	4.03	9.69
Edison International	73.66	54.45	64.06	2.95	4.61	11.24
Entergy Corp.	123.86	94.94	109.40	4.28	3.91	7.21
Eversource Energy	71.59	54.12	62.86	2.45	3.90	9.02
Exelon Corporation	94.41	70.54	82.48	2.70	3.27	9.77
FirstEnergy Corp	49.86	35.19	42.53	1.44	3.39	9.89
Fortis Inc.	46.19	35.32	40.76	1.56	3.83	7.14
Fortis Inc.	50.89	34.76	42.83	1.68	3.92	8.71
IDACORP, Inc..	115.92	93.53	104.73	3.16	3.02	6.98
NextEra Energy, Inc.	91.35	67.22	79.29	1.87	2.36	11.63
NorthWestern Corp	62.95	48.68	55.82	2.56	4.59	9.45
OGE Energy Corp	42.91	33.28	38.10	1.66	4.36	12.71
Otter Tail Corp	82.46	52.60	67.53	1.75	2.59	9.34
PPL Corporation	31.74	23.47	27.61	0.96	3.48	8.93
Pinnacle West Capital Corp	81.63	59.03	70.33	3.46	4.92	9.90
Portland General Electric Co.	56.37	41.58	48.98	1.81	3.70	8.79
Public Service Enterprise Group	74.14	52.51	63.33	2.28	3.60	7.97
Southern Company	80.57	60.71	70.64	2.80	3.96	9.90
Xcel Energy Inc.	77.66	56.89	67.28	2.08	3.09	9.43
Group Average	77.73	57.15	67.44	2.45	3.70	9.41
Group Average G					5.70	
<b>DCF</b>					<b>9.40</b>	
			Average of Current and 52-Week		<b>9.39</b>	

Multiple sources of the Barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

Development of a Representative Dividend Growth Rate for the Barometer Group of Electric Companies						
	5 Year Forecast				Average Earnings Growth	Growth Estimate
	Value Line	Value Line	Zack's	Yahoo		
	DPS (%)	EPS (%)	EPS (%)	EPS (%)		
Allete, Inc.	3.50	6.00	7.80	8.70	7.50	7.50
Alliant Energy Corp	6.00	6.00	6.50	6.20	6.23	6.23
Ameren Corp	6.50	6.50	7.00	6.90	6.80	6.80
American Electric Power	5.50	6.00	5.70	5.35	5.68	5.68
AVANGRID, Inc.	1.50	4.00	4.40	5.20	4.53	4.53
Avista Corp	4.00	3.50	6.30	6.30	5.37	5.37
CMS Energy Corp	6.00	6.50	8.00	8.00	7.50	7.50
Consolidated Edison	3.00	4.50	2.00	6.12	4.21	4.21
Dominion Energy	0.50	4.00	20.00	5.60	9.87	4.80
DTE Energy Company	3.00	4.50	6.00	7.40	5.97	5.97
Duke Energy Company	2.00	5.00	6.20	5.80	5.67	5.67
Edison International	5.00	10.00	2.90	7.00	6.63	6.63
Entergy Corp.	4.00	0.50	2.80	6.60	3.30	3.30
Evergy Inc	7.00	7.50	5.20	2.67	5.12	5.12
Eversource Energy	6.50	6.50	6.30	6.70	6.50	6.50
Exelon Corporation	NA	NA	6.70	6.30	6.50	6.50
FirstEnergy Corp	3.00	3.00	6.40	0.55	3.32	3.32
Fortis Inc.	6.00	5.00	5.60	3.76	4.79	4.79
IDACORP, Inc..	6.50	4.50	3.70	3.70	3.97	3.97
NextEra Energy, Inc.	10.00	10.00	9.00	8.80	9.27	9.27
NorthWestern Corp	2.00	3.50	6.60	4.50	4.87	4.87
OGE Energy Corp	3.00	6.50	10.20	-12.34	1.45	8.35
Otter Tail Corp	7.00	4.50	NA	9.00	6.75	6.75
PPL Corporation	-4.00	3.50	7.40	17.21	9.37	5.45
Pinnacle West Capital Corp	2.00	2.50	5.40	7.05	4.98	4.98
Portland General Electric Co.	5.50	5.00	6.10	4.18	5.09	5.09
Public Service Enterprise Group	5.00	4.50	4.30	4.30	4.37	4.37
Southern Company	3.50	6.50	4.00	7.30	5.93	5.93
Xcel Energy Inc.	6.50	6.00	6.60	6.40	6.33	6.33
Group Average	4.29	5.21	6.40	5.70	5.79	5.72
USE						<b>5.70</b>
Sources:	Value Line Investment Survey April 24, 2023					
	Zacks, April 24, 2023 (www.zacks.com)					
	Yahoo!, April 24, 2023 (http://finance.yahoo.com/)					
	* NA signifies that a forecast was not available					

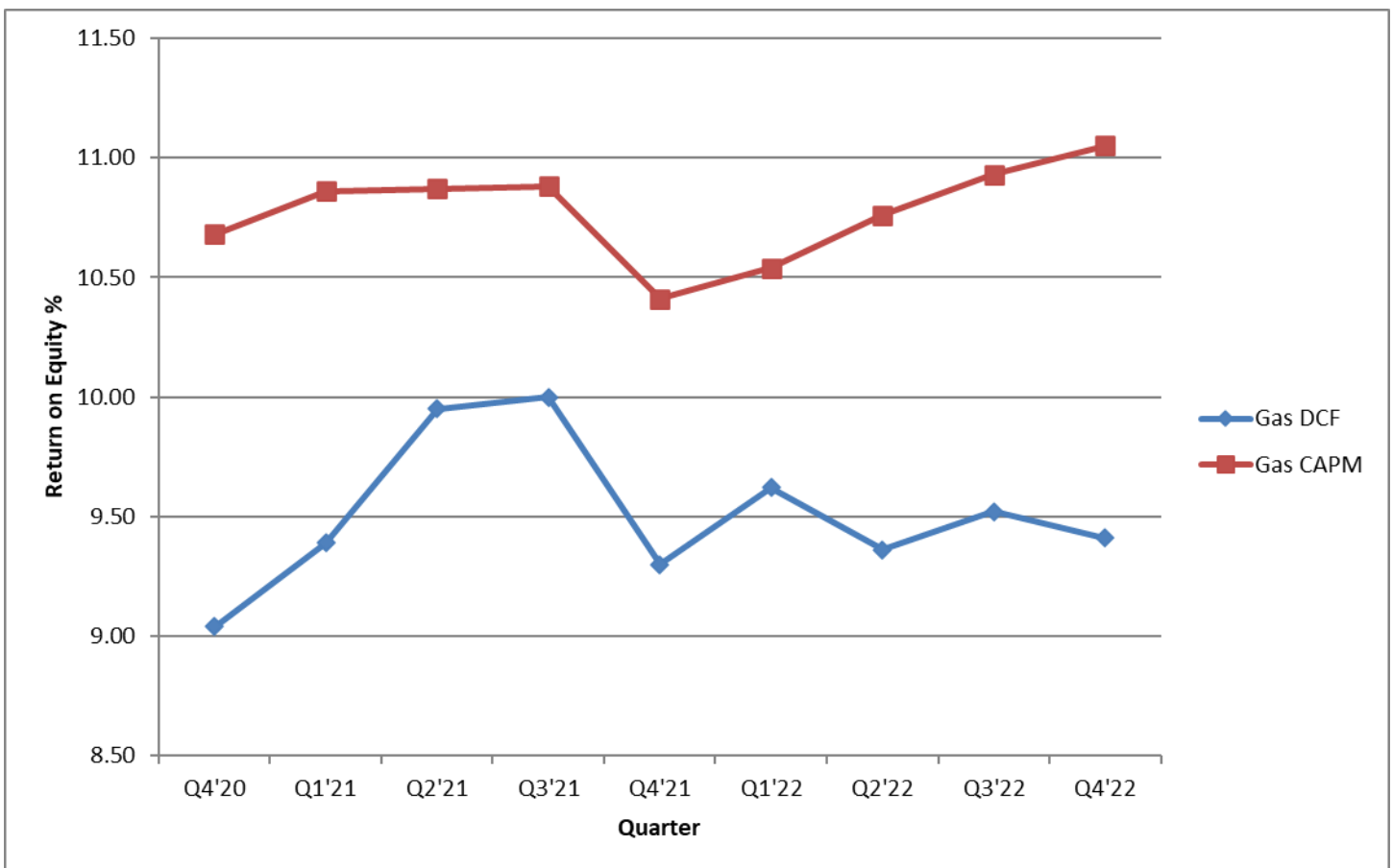
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

<b>Market Based Returns on Common Equity<sup>1</sup></b>				
April 21, 2023				
<b><u>Gas Distribution Company Barometer Group</u></b>				
				Cost Rates
				<u>%</u>
(1)	Current DCF:			9.48
(2)	52-Week Average DCF:			<u>9.34</u>
(3)	Overall DCF ((1) + (2)) / 2 :			<u>9.41</u>
(4)	Market Indicated Common Equity Cost Rate Range: @ 1 standard deviation around the mean. <sup>2</sup>			<u>8.17-10.65</u>
(5)	CAPM Check of DCF Reasonableness:			11.05
(6)	Recent Commission Approved ROEs <sup>3</sup> :			
	**PECO Energy Company			10.24**
	R-2020-3018929			
(7)	Distribution System Improvement Charge (DSIC) Return <sup>4</sup> :			<u>10.15%</u>
<sup>1</sup> As calculated by the Bureau of Technical Utility Services				
<sup>2</sup> Standard Deviation of 16 DCF observations				
<sup>3</sup> Base rate case ROEs within last two years, fully litigated or stipulated for DSIC				
<sup>4</sup> Commission authorized Return on Equity (ROE) for DSIC purposes				
Any questions concerning DSIC should be directed to Marc Hoffer of the Bureau of Technical Utility Services at (717) 787-1869.				

### Historic Gas Industry DCF and CAPM Average ROEs

Gas		
	DCF	CAPM
Q4'20	9.04	10.68
Q1'21	9.39	10.86
Q2'21	9.95	10.87
Q3'21	10.00	10.88
Q4'21	9.30	10.41
Q1'22	9.62	10.54
Q2'22	9.36	10.76
Q3'22	9.52	10.93
Q4'22	9.41	11.05

**Graph of Historic Gas Industry DCF and CAPM Average ROEs**





Barometer gas companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52-week average DCF. A final average of the two calculations is also shown at the bottom.

<b>Gas Company Barometer Group</b>					
<b>Calculation of a Current Dividend Yield</b>					
	Closing	Latest	Ind. Div.		
	Market	Indicated	Plus 1/2	Current	
	Price (Po)	Dividend	Div. Growth	Dividend	
	<u>4/21/2023</u>	<u>(Do)</u>	<u>Rate (D1)</u>	<u>Yield(D1/Po)</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(%)	(%)
Atmos Energy	115.38	2.96	3.07	2.66	10.09
Chesapeake Utilities Corporation	128.77	2.14	2.23	1.73	8.48
New Jersey Resources	53.32	1.56	1.60	3.00	8.67
NiSource Inc.	28.64	1.00	1.02	3.57	11.72
Northwest Natural Gas	47.72	1.94	1.94	4.08	8.61
ONE Gas, Inc.	80.71	2.60	2.67	3.31	8.64
Southwest Gas	57.48	2.48	2.55	4.43	8.93
Spire Inc.	69.91	2.88	2.95	4.22	10.72
Group Average	72.74	2.20	2.25	3.38	9.48
Group Average G				6.10	
<b>DCF</b>				<b>9.48</b>	

<b>Gas Company Barometer Group</b>						
<b>52-week Average Dividend Yield Calculation</b>						
				Latest	Average	
				Indicated	Dividend	
	<u>High</u>	<u>Low</u>	<u>Average (Pa)</u>	<u>Dividend (Do)</u>	<u>Yield (Do/Pa)</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(\$)	(%)	(%)
Atmos Energy	121.92	97.71	109.82	2.96	2.70	10.13
Chesapeake Utilities Corporation	138.49	105.79	122.14	2.14	1.75	8.50
New Jersey Resources	55.84	38.07	46.96	1.56	3.32	8.99
NiSource Inc.	32.08	23.78	27.93	1.00	3.58	11.73
Northwest Natural Gas	55.97	42.37	49.17	1.94	3.95	8.48
ONE Gas, Inc.	89.46	68.86	79.16	2.60	3.28	8.62
Southwest Gas	95.62	56.60	76.11	2.48	3.26	7.76
Spire Inc.	78.86	61.52	70.19	2.88	4.10	10.60
Group Average	83.53	61.84	72.68	2.20	3.24	9.35
Group Average G					6.10	
<b>DCF</b>					<b>9.34</b>	
					<b>9.41</b>	

Multiple sources of the Barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

<b>Development of a Representative Dividend Growth Rate for the Barometer Group of Gas Companies</b>						
<u>5 Yr Forecast</u>						
	Value Line	Value Line	Zack's	Yahoo	Average	Growth
	<u>DPS</u>	<u>EPS</u>	<u>EPS</u>	<u>EPS</u>	<u>Growth</u>	<u>Estimate</u>
	(%)	(%)	(%)	(%)	(%)	(%)
Atmos Energy	7.50	7.00	7.50	7.80	7.43	7.43
Chesapeake Utilities Corporation	8.00	6.50	NA	7.00	6.75	6.75
New Jersey Resources	5.00	5.00	6.00	6.00	5.67	5.67
NiSource Inc.	4.50	9.50	6.80	NA	8.15	8.15
Northwest Natural Gas	0.50	6.50	4.30	2.80	4.53	4.53
ONE Gas, Inc.	5.50	6.00	5.00	5.00	5.33	5.33
Southwest Gas	5.50	10.00	5.00	4.00	6.33	4.50
Spire Inc.	5.00	8.00	5.00	NA	6.50	6.50
Group Average	5.19	7.31	5.66	5.43	6.34	6.11
USE						<b>6.10</b>
Sources:	<u>Value Line Investment Survey April 24, 2023</u>					
	Zacks, April 24, 2023 ( <a href="http://www.zacks.com">www.zacks.com</a> )					
	Yahoo!, April 24, 2023 ( <a href="http://finance.yahoo.com/">http://finance.yahoo.com/</a> )					
	* NA signifies that a forecast was not available					

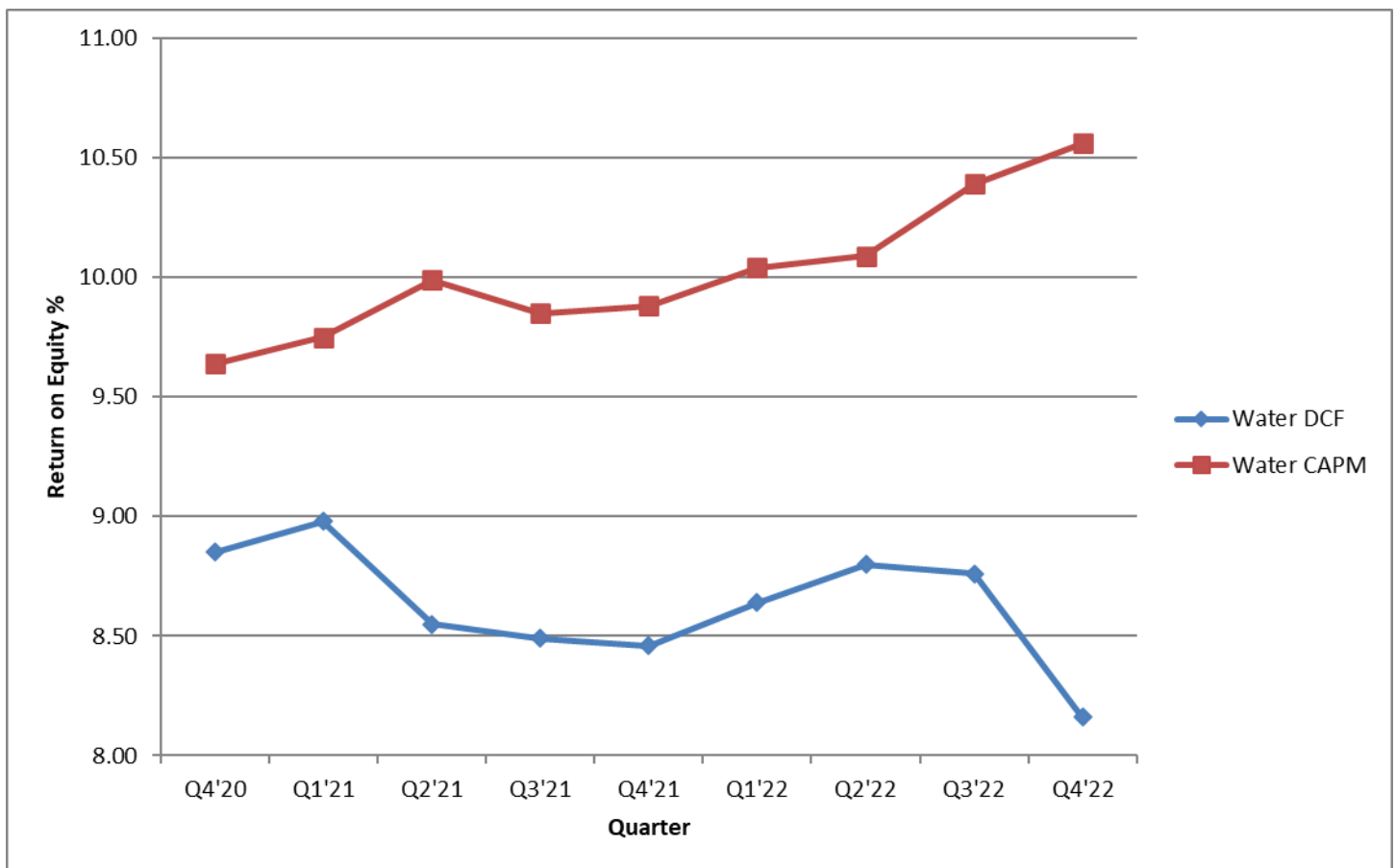
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

<b>Market Based Returns on Common Equity <sup>1</sup></b>			
April 21, 2023			
<b><u>Water Company Barometer Group</u></b>			
			Cost Rates
			<u>%</u>
(1)	Current DCF		8.17
(2)	52-Week Average DCF		8.15
(3)	Average DCF		<u>8.16</u>
(4)	Market Indicated Common Equity Cost Rate Range @ 1 standard deviation around the mean. <sup>2</sup>		<u>6.76-9.55</u>
(5)	CAPM Check of DCF Reasonableness		10.56
(6)	Recent Commission Approved ROEs <sup>3</sup> : *Aqua Pennsylvania, Inc., R-2021-3027385, includes a 0.25% management effectiveness adjustment		10.00*
(7)	Distribution System Improvement Charge (DSIC) Return <sup>4</sup> :		<u>9.75%</u>
<sup>1</sup> As calculated by the Bureau of Technical Utility Services			
<sup>2</sup> Standard Deviation of 12 DCF observations			
<sup>3</sup> ROEs from base rate cases within last two years, fully litigated or stipulated for DSIC purposes			
<sup>4</sup> Commission authorized Return on Equity (ROE) for DSIC purposes			
Any questions concerning DSIC should be directed to Marc Hoffer of the Bureau of Technical Utility Services at (717) 787-1869.			

**Historic Water Industry DCF and CAPM Average ROEs**

Water		
	DCF	CAPM
Q4'20	8.85	9.64
Q1'21	8.98	9.75
Q2'21	8.55	9.99
Q3'21	8.49	9.85
Q4'21	8.46	9.88
Q1'22	8.64	10.04
Q2'22	8.80	10.09
Q3'22	8.76	10.39
Q4'22	8.16	10.56

**Chart of Historic Water Industry DCF and CAPM Average ROEs**



Barometer water companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52-week average DCF. A final average of the two calculations is also shown at the bottom.

Water Company Barometer Group						
Calculation of a Current Dividend Yield						
	Closing	Latest	Ind. Div.			
	Market	Indicated	Plus 1/2	Current		
	Price (Po)	Dividend	Div. Growth	Dividend		
	<u>4/21/2023</u>	<u>(Do)</u>	<u>Rate (D1)</u>	<u>Yield(D1/Po)</u>	<u>Growth</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(%)	(%)	(%)
American States Water Company	91.19	1.59	1.66	1.82	5.45	7.27
American Water Works Co., Inc.	150.93	2.62	2.73	1.81	6.46	8.27
California Water Service Group	58.41	1.04	1.07	1.84	6.50	8.34
Essential Utilities, Inc.	43.69	1.15	1.20	2.74	6.73	9.47
Middlesex Water Company	78.88	1.25	1.29	1.63	4.35	5.98
SJW Group	78.89	1.52	1.56	1.97	7.90	9.87
Group Average	83.67	1.53	1.58	1.97	6.23	8.20
Group Average G				6.20		
<b>DCF</b>				<b>8.17</b>		

52-week High-Low Dividend Yield Calculation							
				Latest	Average		
				Indicated	Dividend		
	<u>High</u>	<u>Low</u>	<u>Average (Pa)</u>	<u>Dividend (Do)</u>	<u>Yield (Do/Pa)</u>	<u>Growth</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(\$)	(%)	(%)	(%)
American States Water Company	100.51	71.22	85.87	1.59	1.85	5.45	7.30
American Water Works Co., Inc.	164.83	122.77	143.80	2.62	1.82	6.46	8.28
California Water Service Group	66.12	48.46	57.29	1.04	1.82	6.50	8.32
Essential Utilities, Inc.	52.43	38.50	45.47	1.15	2.53	6.73	9.26
Middlesex Water Company	96.19	72.64	84.42	1.25	1.48	4.35	5.83
SJW Group	83.88	55.74	69.81	1.52	2.18	7.90	10.08
Group Average	93.99	68.22	81.11	1.53	1.95	6.23	8.18
Group Average G					6.20		
<b>DCF</b>					<b>8.15</b>		
				Average of Current and 52-Week	<b>8.16</b>		

Multiple sources of the Barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

<b>Development of a Representative Dividend Growth Rate for the Barometer Group of Water Companies</b>						
	<u>5 Yr Forecast</u>					
	Value Line	Value Line	Zacks	Yahoo	Average	
	<u>DPS</u>	<u>EPS</u>	<u>EPS</u>	<u>EPS</u>	<u>Growth</u>	<u>Estimate</u>
	(%)	(%)	(%)	(%)	(%)	(%)
American States Water Company	8.50	6.50	NA	4.40	5.45	5.45
American Water Works Co., Inc.	8.50	3.00	8.10	8.28	6.46	6.46
California Water Service Group	6.50	6.50	NA	11.70	9.10	6.50
Essential Utilities, Inc.	8.00	7.50	6.10	6.60	6.73	6.73
Middlesex Water Company	6.00	6.00	NA	2.70	4.35	4.35
SIW Group	5.00	6.00	NA	9.80	7.90	7.90
Group Average	7.08	5.92	7.10	7.25	6.67	6.23
USE						<b>6.20</b>
Sources:	Value Line Investment Survey April 24, 2023					
	Zacks, April 24, 2023 (www.zacks.com)					
	Yahoo!, April 24, 2023 (http://finance.yahoo.com/)					
	* NA signifies that a forecast was not available					