COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF ELECTRONIC APPLICATION OF KENTUCKY UTILITIES COMPANY FOR AN ADJUSTMENT OF ITS ELECTRIC RATES, AND APPROVAL OF CERTAIN REGULATORY AND ACCOUNTING TREATMENTS)	Case No. 2025-00113
IN THE MATTER OF ELECTRONIC APPLICATION OF LOUISVILLE GAS AND ELECTRIC COMPANY FOR AN ADJUSTMENT OF ITS ELECTRIC AND GAS RATES, AND APPROVAL OF CERTAIN REGULATORY AND ACCOUNTING TREATMENTS	Case No. 2025-00114

Direct Testimony and Exhibits of

Michael P. Gorman

On behalf of

United States Department of Defense and all other Federal Executive Agencies

August 29, 2025

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Direct Testimony of Michael P. Gorman

1		I. INTRODUCTION AND SUMMARY
2	Q	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
3	A	Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140,
4		Chesterfield, MO 63017.
5	Q	WHAT IS YOUR OCCUPATION?
6	A	I am a consultant in the field of public utility regulation and a Managing Principal with
7		the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory
8		consultants.
9	Q	ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?
10	A	I am appearing in this proceeding on behalf of the United States Department of Defense
11		and all other Federal Executive Agencies ("DoD/FEA"). The DoD/FEA takes service
12		from Kentucky Utilities Company ("KU") and Louisville Gas and Electric Company
13		("LGE") (collectively, "KU/LGE" or "Companies") on several electric and gas rate
14		schedules.
15	Q	PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
16		EXPERIENCE.
17	A	This information is included in Appendix A to my testimony.

1	Q	HAVE YOU BEEN INVOLVED WITH PRIOR PROCEEDINGS BEFORE THE
2		COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE
3		COMMISSION ("COMMISSION" OR "KPSC")?
4	A	Yes. I have been involved in prior proceedings before the Commonwealth of Kentucky
5		before the Public Service Commission and have presented testimony in some of those
6		proceedings.
7	Q	WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?
8	A	My testimony will address adjustments to KU/LGE's proposed overall rate of return,
9		including return on equity and capital structure, embedded debt cost of KU/LGE, and
10		analysis of KU/LGE's testimony on these subjects.
11	Q	DOES THE FACT THAT YOU DID NOT ADDRESS EVERY ISSUE RAISED
12		IN KU/LGE'S TESTIMONY MEAN THAT YOU AGREE WITH KU/LGE'S
13		TESTIMONY ON THOSE ISSUES?
14	A	No. It merely reflects that I did not choose to address all those issues. It should not be
15		read as an endorsement of, or agreement with, KU/LGE's position on such issues. In
16		addition, other parties may offer reasonable adjustments to KU/LGE's revenue

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requirement that I have not addressed in my direct testimony.

1 Q PLEASE SUMMARIZE YOUR RECOMMENDATIONS AND CONCLUSIONS

2 **ON RETURN ON EQUITY.**

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I recommend the Commission award a return on common equity in the range of 9.20% to 9.80%, with a point estimate of 9.50%. This return on equity reflects KU/LGE's current market cost of equity. I recommend the Commission approve a return on equity that provides fair compensation based on KU/LGE's investment risk and charges customers no more than necessary to fairly compensate KU/LGE and to maintain its financial integrity and credit standing.

9 Q ARE YOU PROPOSING ANY ADJUSTMENTS TO KU/LGE'S PROPOSED 10 RATEMAKING CAPITAL STRUCTURES?

No; however, I do note that the utilities are proposing a ratemaking capital structure that contain more common equity than necessary to support the utilities' credit rating and financial integrity. Proposing ratemaking capital structures with excessive common equity weight of total capital unnecessarily increase the utilities' cost of capital and inflate revenue requirements and rates to above a just and reasonable level. I will recognize the overweight of common equity in forming my recommended return on equity in this case.

1 Q WHAT IS YOUR RECOMMENDED RATE OF RETURN TO BE USED TO SET **RATES FOR KU/LGE?** 2 As shown on my Exhibit MPG-1, my recommended overall rate of return is 7.33% for 3 Α KU and 7.36% for LGE, which reflects my proposed return on equity and the 4 5 Companies' proposed capital structures. 6 The Companies' proposed capital structures are consistent with their actual historical capital structures and the ones approved by the Commission in the last 7

9 Q WILL YOU ALSO RESPOND TO THE COMPANY'S REQUESTED RETURN 10 ON EQUITY?

A Yes. KU/LGE witness Mr. D'Ascendis recommends an equity return in the range of 10.29%% to 11.84% and a return on equity of 10.95%. Mr. D'Ascendis' recommended return on equity for KU/LGE substantially exceeds a fair return and would unjustifiably inflate KU/LGE's rates above a just and reasonable level.

II. RATE OF RETURN MARKET EVIDENCE

16 Q PLEASE DESCRIBE THIS SECTION OF YOUR TESTIMONY.

In this section, I will provide observable market evidence and credit metrics to assess
the reasonableness of rate of return positions and a detailed analysis to demonstrate that
my recommended rate of return will support KU/LGE's financial integrity and access

regulatory proceedings.

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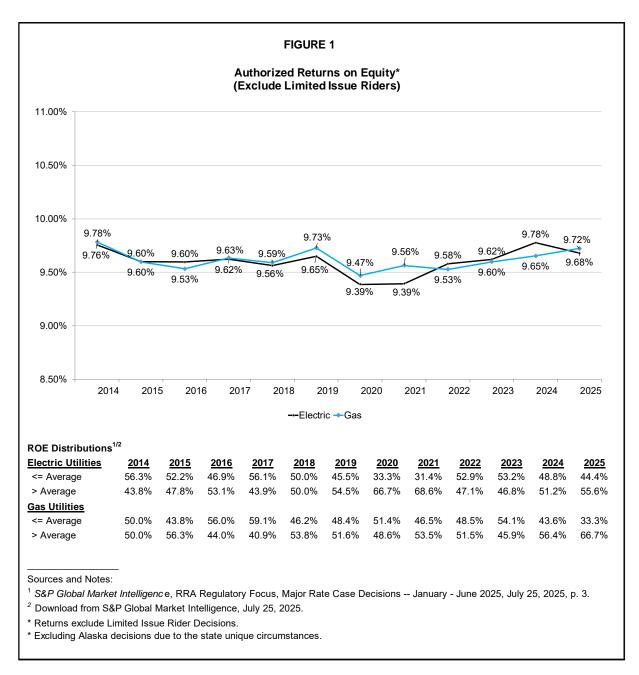
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¹D'Ascendis Direct Testimony at 4.

- to capital. I also comment on market-based models used to estimate the current market-required rate of return that investors demand to assume the risk of an investment similar to KU/LGE's.
- 4 II.A. Utility Industry Authorized Returns on
- 5 Equity, Access to Capital, and Credit Strength
- 6 Q PLEASE DESCRIBE THE OBSERVABLE EVIDENCE ON TRENDS IN
 7 AUTHORIZED RETURNS ON EQUITY FOR REGULATED UTILITIES.
- 8 Α Authorized returns on equity are an important part of how utilities produce revenues 9 and cash flows adequate to support their credit standing and to maintain their financial integrity, which supports their access to capital under reasonable terms and prices. 10 11 Observable data, including data on industry authorized returns on equity, trends and outlooks on credit standing, and the ability of utilities to attract capital to fund large 12 13 investments, provides clear evidence that industry authorized returns on equity have been judged by market participants to be fair and reasonable. With this as background, 14 it is significant to observe that average authorized returns on equity for regulated utilities 15 have ranged from 9.39% to 9.72% for the period from 2014 through the first quarter of 16 2025, and that between 2020 and 2025, authorized returns on equity have averaged 17 around 9.60%. These returns are summarized in Figure 1. 18



The distribution of the industry averages is also important in assessing the reasonableness of authorized return on equities in the current market. As shown in Figure 1, in 2024 and the first quarter of 2025, the average returns on equity awarded to electric utilities were about 9.78% and 9.72%, respectively, and about half the electric authorized equity returns were above and below the industry average return.

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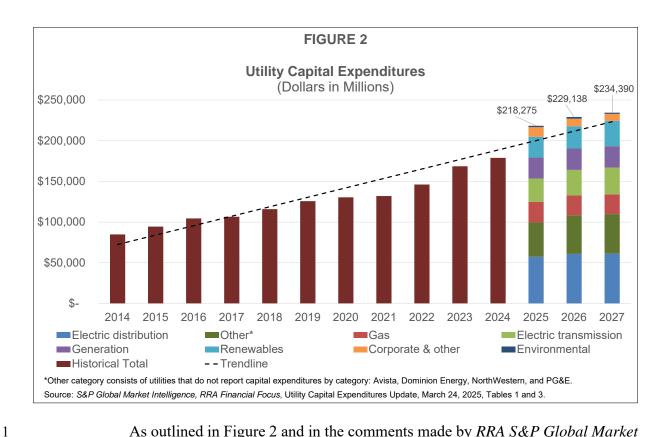
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I	Q	HAVE UTILITIES BEEN ABLE TO ACCESS EXTERNAL CAPITAL TO
2		SUPPORT CAPITAL EXPENDITURE PROGRAMS?
3	A	Yes. Utilities have enjoyed robust access to capital markets under favorable terms and
4		costs. This access to capital is in recognition of the returns that regulatory commissions
5		have found to be fair and reasonable. The Regulatory Research Associates' ("RRA's")
6		March 26, 2025, Utility Capital Expenditures Report, RRA Financial Focus, made
7		several relevant comments about utility investments generally:
8 9 10 11 12 13		• Projected capital expenditures for 2025 among the 47 energy utilities in Regulatory Research Associates' representative sample of publicly traded, US-based utilities are forecast to reach over \$212 billion. This represents a 22% increase from the \$173 billion spent in 2024, a 29% increase compared with the nearly \$164 billion spent in 2023, and a nearly 50% hike compared to the \$146 billion invested in 2022.
14 15		• Aggregate energy utility investments are projected to hit new highs of \$222 billion in 2026, \$228 billion in 2027 and \$208 billion in 2028.
16		* * *
17 18 19 20		• While the aggregate energy capex forecast for 2029 drops to \$153 billion, the level is rather likely to rise significantly over time as utility companies solidify their future project plans throughout the remainder of 2025 and in the years ahead. ²
21		As shown in Figure 2 below, capital expenditures for regulated utilities have
22		increased considerably over 2024 and into 2025, and forecasted capital expenditures
23		remain elevated through the end of 2027.

 $^{^2}$ S&P Global Market Intelligence, RRA Financial Focus: "Energy Utility Capex Predicted to Top \$1 trillion from 2025 through 2029, March 26, 2025, at 1.



As outlined in Figure 2 and in the comments made by RRA S&P Global Market Intelligence, capital investments for the utility industry continue to stay at elevated levels, and these capital expenditures are expected to fuel utilities' profit growth into the foreseeable future. This is clear evidence that the capital investments are enhancing shareholder value and are attracting both equity and debt capital to the utility industry in a manner that is allowing utilities to fund their elevated capital plans.

Q HAVE REGULATED UTILITY EQUITY SECURITIES' VALUATIONS SUPPORTED ACCESS TO EQUITY CAPITAL?

A Yes. Utility valuation metrics continue to demonstrate that utilities can sell new stock at robust market prices, which illustrates that utilities can access equity capital under reasonable terms and conditions and at relatively low cost.

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As shown on my Exhibit MPG-2, utility valuation metrics show robust valuation of utility securities more recently compared to the historical period stretching back to 2002. Specifically, *The Value Line Investment Survey* ("Value Line") tracks and projects various valuation metrics related to regulated utility securities, as well as certain non-regulated companies followed by Value Line. These valuation metrics are considered by market participants in assessing the investment risk characteristics of individual company stocks and industries and are used by market participants to derive their required rates of return for making investments. All of these valuation metrics for utility stocks indicate robust valuations of utility stocks, which in turn supports my finding that utilities' cost of capital is low by historical comparison and utilities are producing competitive returns.

For example, the *Value Line* electric utility industry price-to-earnings ratio of 17.87x for 2025 aligns with the 24-year average price-to-earnings ratio. (Exhibit MPG-2, page 1). A consistently strong price-to-earnings ratio indicates stock prices valuations are stable, which supports utilities' access to external equity markets.

The market price-to-cash flow for electric utilities is currently 8.33x, and the market-to-book ratio is 1.80x. These valuation metrics align with the historical average valuation metrics, and indicate utilities continue to have access to equity capital markets.

Q PLEASE DESCRIBE GENERAL UTILITY STOCK PRICE PERFORMANCE

2 **OVER THE LAST SEVERAL YEARS.**

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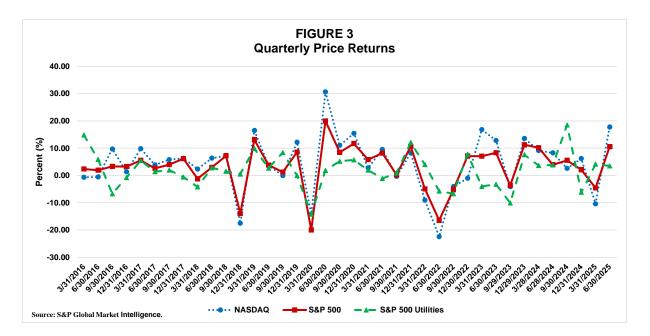
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3 A Figure 3 below shows the utility stock price performance compared to the overall market.



Over the last several years, the Standard & Poor's ("S&P") Utility index has tracked the overall market performance, but it exhibited much less volatility relative to the other market indices.

8 Q HAVE REGULATED UTILITIES MAINTAINED INVESTMENT GRADE 9 CREDIT STRENGTH AND FINANCIAL INTEGRITY?

Yes. Credit ratings are reasonable assessments of the utility industry's financial integrity because they indicate the utility's credit strength, which, in turn, provides strong evidence of the utility's ability to attract the capital necessary to make infrastructure investments under reasonable terms and prices. Trends in credit ratings

are an indication of whether regulatory decisions have supported utilities' ability to generate adequate revenue to recover their costs, produce adequate cash flows, and maintain strong credit. The primary drivers in these regulatory decisions are the Commissions' awarded returns on equity and development of depreciation rates.

As shown in Table 1 below, electric utilities' credit standing has remained very robust through the Tax Cuts and Jobs Act (2017) changes and impacts on cash flow starting around 2018, through the COVID-19 pandemic, and into the present. As shown below in Table 1, from approximately 2016 through the first quarter of 2025, over 80% of the regulated electric utility industry has a bond rating of BBB+ or stronger.

					Т	ABLE 1						
S&P Ratings by Category <u>Electric Utility Subsidiaries</u>												
Description	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
A or higher	13%	13%	10%	10%	8%	14%	14%	10%	10%	11%	9%	7%
A-	26%	34%	43%	52%	54%	54%	53%	37%	37%	37%	33%	35%
BBB+	28%	24%	32%	21%	22%	18%	19%	35%	36%	37%	45%	41%
BBB	23%	18%	4%	7%	13%	12%	3%	16%	16%	15%	12%	13%
BBB-	11%	11%	11%	11%	2%	1%	1%	0%	0%	0%	0%	1%
Below BBB-	0%	0%	0%	0%	0%	0%	<u>10%</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>	2%	3%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: S&P CAPITAL IQ and Market Intelligence, downloaded 6/9/2025.

Note: Subsidiary ratings used.

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1 Q HOW SHOULD THE COMMISSION USE THIS MARKET INFORMATION IN

2 ASSESSING A FAIR RETURN FOR KU/LGE?

Observable market evidence is quite clear that capital market costs are relatively low. As authorized returns have fluctuated around the mid-9% range over the past five years, utilities continue to have access to large amounts of external capital while still funding large capital programs. Furthermore, utilities' investment-grade credit ratings are stable and have improved due, in part, to supportive regulatory treatment. The Commission should carefully weigh all this important observable market evidence in assessing a fair return on equity for KU/LGE.

III.B. Federal Reserve's Impact on Cost of Capital

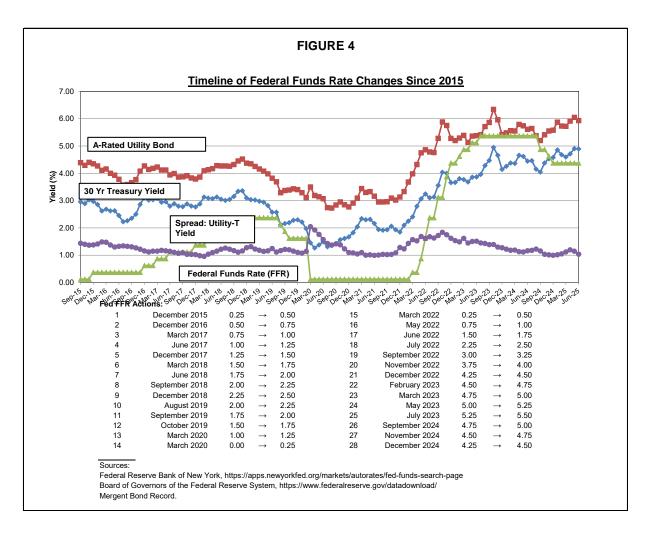
- 11 Q ARE THE MONETARY POLICY DECISIONS AND ACTIONS OF THE
 12 FEDERAL RESERVE ("FED") AND OF THE FEDERAL RESERVE
 13 SYSTEM'S FEDERAL OPEN MARKET COMMITTEE ("FOMC") KNOWN
 14 TO MARKET PARTICIPANTS, AND IS IT REASONABLE TO BELIEVE
 15 THOSE DECISIONS AND ACTIONS ARE REFLECTED IN THE MARKET'S
- 16 VALUATION OF BOTH DEBT AND EQUITY SECURITIES?
- Yes. The Fed has been transparent in its efforts to support the economy to achieve maximum employment and to manage long-term inflation to around a 2% level. In a June 18, 2025 press release, the Fed noted that economic activity has been expanding at a solid pace, while labor market conditions remain solid, and the unemployment rate

remains low	. Meanwhile,	inflation	is still	slightly	elevated.	The	Fed	noted	that
uncertainty a	bout the econor	mic outloc	ok has o	liminishe	d but remai	ins ele	vate	d.	

In its December 2024 meeting, the Committee lowered the target federal funds rate to a range of 4.25%-4.50%, and the Fed decided to maintain the current target rate in its June meeting. The Committee also stated that it will continue to closely monitor economic activity before making any adjustments aimed at achieving the target 2% inflation rate. The Fed noted that it will continue reducing its holdings of Treasury securities, agency debt securities and agency mortgage-backed securities. In its June 18, 2025 press release, the Fed reiterated its strong commitment to returning inflation toward the 2% target.³

The trend in the Fed's monetary actions on the FFR is shown in Figure 4.

³ Federal Reserve Press Release, Federal Reserve Issues FOMC Statement, June 18, 2025.



As shown in Figure 4 above, the FFR is currently in the 4.25% to 4.50% range and continues to remain higher than the rate prior to the economic effects of the worldwide pandemic starting around March/April of 2020.

Q DO INDEPENDENT ECONOMISTS' OUTLOOKS FOR FUTURE INTEREST

RATES REFLECT THE FED'S CURRENT MONETARY POLICY?

Yes. *Blue Chip Financial Forecast* tracked consensus economist that expected the Fed would reduce Federal Fund interest rates throughout 2025. That consensus economist outlook proved to be correct as illustrated in Figure 4 above.

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These consensus economists' outlooks and projections of short-term FFR levels and of the U.S. economic outlook includes an expectation that inflation and interest rates will continue to decline in 2025, as illustrated below in Table 2.

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TABLE 2												
	Blue Chip Financial Forecasts											
Projected Fed	eral F	unds R							nd GD	P Price	e Inde	<u>K</u>
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Publication Date	<u>2024</u>	<u>2024</u>	<u>2024</u>	<u>2024</u>	<u>2025</u>	<u>2025</u>	<u>2025</u>	<u>2025</u>	<u>2026</u>	<u>2026</u>	<u>2026</u>	<u>2026</u>
Federal Funds Rate												
Jul-24		5.3	5.3	5.0	4.7	4.4	4.1	3.9				
Aug-24		5.3	5.3	5.0	4.7	4.4	4.1	3.9				
Sep-24		5.3	5.2	4.8	4.4	4.0	3.8	3.6				
Oct-24			5.3	4.6	4.1	3.8	3.5	3.3	3.3			
Nov-24			5.3	4.6	4.1	3.8	3.5	3.3	3.2			
Dec-24			5.3	4.6	4.2	3.9	3.7	3.6	3.5			
Jan-25				4.7	4.3	4.1	3.9	3.8	3.7	3.5		
Feb-25				4.7	4.3	4.2	4.0	3.9	3.8	3.6		
Mar-25				4.7	4.4	4.3	4.1	4.0	3.9	3.8		
Apr-25					4.3	4.3	4.2	4.0	3.8	3.7	3.6	
May-25					4.3	4.3	4.1	3.9	3.6	3.4	3.3	
Jun-25					4.3	4.3	4.2	3.9	3.7	3.5	3.4	
Jul-25						4.3	4.3	4.1	3.8	3.6	3.4	3.3
T-Bond, 30 yr.												
Jul-24		4.6	4.5	4.4	4.4	4.3	4.3	4.2				
Aug-24		4.6	4.5	4.4	4.4	4.3	4.3	4.3				
Sep-24		4.6	4.2	4.2	4.1	4.1	4.1	4.1				
Oct-24		4.0	4.2	4.1	4.0	4.0	4.0	4.1	4.0			
Nov-24			4.2	4.3	4.2	4.2	4.2	4.2	4.2			
Dec-24			4.2	4.5	4.5	4.4	4.4	4.4	4.4			
Jan-25			7.2	4.5	4.6	4.5	4.5	4.5	4.5	4.4		
Feb-25				4.5	4.7	4.7	4.7	4.7	4.6	4.6		
Mar-25				4.5	4.7	4.7	4.7	4.6	4.6	4.6		
Apr-25				4.0	4.7	4.6	4.6	4.5	4.5	4.5	4.5	
May-25					4.7	4.6	4.5	4.5	4.4	4.4	4.4	
Jun-25					4.7	4.8	4.7	4.6	4.6	4.6	4.5	
Jul-25					4.1	4.8	4.8	4.7	4.7	4.7	4.6	4.6
						4.0	4.0	4.1	4.7	4.7	4.0	4.0
GDP Price Index												
Jul-24		2.8	2.3	2.3	2.4	2.2	2.2	2.1				
Aug-24		2.3	2.3	2.3	2.3	2.2	2.2	2.1				
Sep-24		2.5	2.2	2.2	2.3	2.2	2.2	2.1				
Oct-24			2.2	2.0	2.2	2.2	2.1	2.1	2.1			
Nov-24			1.8	2.1	2.2	2.1	2.1	2.1	2.2			
Dec-24			1.8	2.2	2.3	2.2	2.2	2.3	2.3			
Jan-25				2.2	2.3	2.4	2.4	2.5	2.6	2.1		
Feb-25				2.2	2.5	2.5	2.5	2.5	2.5	2.1		
Mar-25				2.4	2.7	2.5	2.5	2.5	2.5	2.2		
Apr-25					2.7	2.7	2.7	2.5	2.5	2.1	2.2	
May-25					3.7	3.4	3.2	2.9	2.6	2.3	2.3	
Jun-25					3.7	2.9	3.4	2.8	2.6	2.2	2.3	
Jul-25						2.9	3.3	2.9	2.6	2.2	2.2	2.2
Source and Note:												
Blue Chip Financial	Forec	asts, J	uly 20	24 thro	ugh Ju	ly 2025	5.					
Actual Yields in Bol		-,-	,		5							

2025-00113 & 2025-00114 DoD/FEA's Direct Testimony of Michael P. Gorman Moreover, the current outlook for long-term interest rates in the intermediate to longer-term is also impacted by the Fed's current actions and the expectation that eventually the Fed's monetary actions will return to more normal levels. Long-term interest rate projections are illustrated in Table 3.

Description Actual 2-Year Projected* 5- to 10-Year Projected 2019 3.01% 3.50% Q2 2.78% 3.17% 3.6% - 3.8% Q3 2.30% 2.70% Q4 2.30% 2.50% 3.2% - 3.7% 2020 1.88% 2.57% 2.22 Q1 1.88% 2.57% 2.8% - 3.6% Q2 1.38% 1.90% 3.0% - 3.8% Q3 1.36% 1.87% 2.8% - 3.6% Q4 1.62% 1.97% 2.8% - 3.6% 2021 2.07% 2.23% 2.8% - 3.6% Q2 2.26% 2.77% 3.5% - 3.9% Q3 1.93% 2.63% 3.4% - 3.8% Q4 1.95% 2.70% 3.4% - 3.8% Q2 2.25% 2.87% 3.8% - 3.9% Q3 3.26% 3.63% 3.63% 3.8% - 3.9% Q3 3.26% 3.63% 3.8% - 3.9% 3.8% - 3.9% Q2 3.80% 3.70%	TABLE 3					
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*Average of all 3 reports in Quarter.

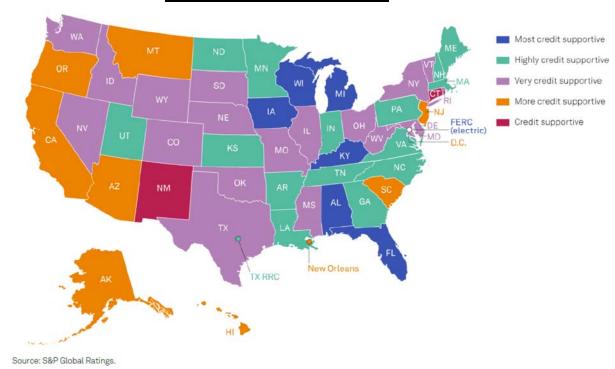
III.C. Utility Industry Credit Outlook

2	Q	PLEASE DESCRIBE THE CREDIT RATING OUTLOOK FOR REGULATED
3		UTILITIES.
4	A	In S&P's, Industry Credit Outlook 2025, (dated January 14, 2025), it comments that
5		North American regulated utilities' credit quality remains under pressure. In that report,
6		it makes the following points:
7 8		 Credit quality remains pressured due to natural disaster risks to infrastructure and record levels of capital spending.
9 10 11		2. S&P's outlook reflects its expectation of continued large capital spending, with consistent access to capital markets supported by continued supportive utility regulatory treatment.
12 13		3. The expectation that utilities will manage credit metrics by funding large capital spending with balanced amounts of debt and equity funding; and
14 15 16		4. Managing regulatory risk is especially highlighted during the large capital spending periods because utilities must prioritize rate affordability and the impacts on customer bills through this period.
17		S&P notes that around 71% of the industry has stable credit rating outlooks,
18		and the industry median credit rating remains in the BBB+ category.
19		S&P emphasizes the importance of effective "management of customer bill."
20		From that standpoint, the credit rating agency provides a clear description of its
21		assessment of regulatory treatment of utilities across the various jurisdictions. S&P's

regulatory risk rating of U.S. jurisdictions is illustrated below.

⁴ S&P Global, *Ratings Industry Credit Outlook 2025: North American Regulated Utilities*, January 14, 2025, at 11.

FIGURE 5
Regulatory Assessment by State⁵



As outlined in Figure 5 above, the KPSC's jurisdiction is noted as "Most Credit Supportive." The Commission's rating reflects confidence from the investment community that the approved regulatory mechanisms support utilities' ability to fully recover their cost of service, under efficient and economic management.

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⁵ *Id*. at 9.

1 0 HAVE CREDIT RATING AGENCIES STATED CONCERNS ABOUT RATE AFFORDABILITY AS A CREDIT RISK TO UTILITIES? 2 3 Α Yes. Credit rating agencies have been emphasizing rate affordability, maintaining adequate financial coverage of debt obligations, and supporting utilities' overall 4 5 investment grade bond ratings. 6 Even though Moody's Investor Services ("Moody's") credit outlook for electric and gas utilities' is now "stable," the credit rating agency is concerned with the 7 8 increased pricing pressures on customers. Specifically, Moody's stated the following: 9 As power supply ramps up to meet rising load forecasts, the potential for higher electricity prices may leave US regulated utilities with greater 10 credit exposure to social risk. Although natural gas prices have declined 11 12 from their recent peak in 2022 and interest rates have stabilized and appear likely to fall, electricity prices will continue to rise in some 13 regions to pay for elevated utility investments to upgrade aging 14 infrastructure and harden networks to withstand extreme weather events. 15 Over the longer term, rising baseload power demand from the 16 proliferation of data centers, growing industrial needs and electrification 17 18 will apply further upward pressure on electricity prices. 19 Affordability is a key credit consideration and social risk for regulated 20 electric and gas utilities because their rates are subject to a public regulatory process that can sometimes lead to adverse outcomes if 21 regulators feel that customers have become too burdened...⁶ 22 23 24

Similarly, Fitch Ratings ("Fitch") opined that the regulated electric and gas utilities' outlook is deteriorating due to elevated capital expenditures, which puts pressure on credit metrics. Fitch also notes the bill affordability concerns for ratepayers, generally, and regulators' ability to balance the rate requests with increasing customer bills.

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⁶ *Moody's Investors Service Outlook*: "Regulated Electric and Gas Utilities – US, "Potential for higher energy costs spurs efforts to address affordability concerns," September 11, 2024, at 1 (emphasis added).

Specifically, Fitch states:

Fitch Ratings' deteriorating outlook for the North American Utilities, Power & Gas sector reflects continuing return on equity headwinds and elevated capex that are putting pressure on credit metrics in the high-cost funding environment. Bill affordability concerns for ratepayers continue to persist despite the pull back in natural gas prices and inflationary pressures.⁷

As outlined by Moody's, S&P and Fitch above, credit analysts are focusing on rate affordability as an important factor needed to support strong credit standing. This is simply because customers must be able to afford to pay their utility bills for utilities to maintain their financial integrity and strong investment grade credit standing. For this reason, the Commission should carefully assess the reasonableness of cost of service in this proceeding, including an appropriate overall rate of return and a return on equity that represents fair compensation but also maintains competitive, just and reasonable rates.

II.D. KU/LGE's Investment Risk

- 17 Q PLEASE DESCRIBE THE MARKET'S ASSESSMENT OF KU'S AND LGE'S
- **INVESTMENT RISK.**
- 19 A The market's assessment of each utilities investment risk is described by credit rating 20 analysts' reports.

⁷ Fitch Ratings, *North American Utilities, Power & Gas Outlook 2024* December 6, 2023, at 1 (emphasis added).

1	KU Investment Risk
2	KU is rated A- with a "Stable" outlook from S&P and A3 with a "Stable"
3	outlook from Moody's.
4	S&P makes the following statements about KU's credit risk assessment:
5	Outlook
6 7 8	The stable rating outlook on KU reflects that of its ultimate parent, PPL Corp., which we base on our expectation that PPL Corp.'s business risk profile will not weaken, and the parent's consolidated financial measures
9 10	will remain stable. Specifically, we expect PPL Corp.'s FFO to debt will be in the 16%-18% range through the outlook period.
11	* * *
12	Business Risk
13	KU's business risk profile is based on our assessment of the company's
14	regulated vertically integrated electric utility operations under
15	Kentucky's generally constructive regulatory framework, which
16	provides for the timely recovery of approved capital expenditures. KU
17	has moderate scale, with 573,000 customers and limited geographic
18	diversity, because it operates almost entirely in Kentucky. It generates
19	about 60%-65% revenues from residential and commercial customers,
20	which can insulate the company from fluctuations in electricity demand
21	and supports relatively stable operating cash flow.
22	The company has generation capacity of about 4,800 MW, including
23	sizable coal-fired capacity. KU has been upgrading coal units to comply
24	with environmental regulations. It can recover the costs for these
25	upgrades through an environmental cost-recovery mechanism, which
26	limits regulatory lag and supports the credit profile. Under KPSC
27	regulation, the company benefits from other recovery mechanisms such
28	as a pass-through fuel cost and a purchased-power cost-recovery rider.
29	These mechanisms help stabilize the company's operating cash flow.
30	Moreover, KU's low-cost generation and efficient operations contribute
31	to competitive rates for customers.
32	* * *
33	Financial Risk
34	Under our base-case scenario, we project that KU's adjusted FFO to debt
35	will average about 18% over the next two years. Over the next few years,

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1	we expect KU's credit measures will benefit from the use of regulatory
2	mechanisms to recover invested capital cost. We expect continued
3	capital spending averaging close to \$1 billion each in 2025 and 2026,
4	which, when combined with the utility's dividend, will result in negative
5	discretionary cash flow. We expect the deficit will be partially funded
6	with debt. We expect debt leverage will be relatively modest for a
7	regulated utility as indicated by debt to EBITDA in the 4.0x-4.5x range
8	over the next few years. Bolstering the financial risk profile
9	determination is the supplemental ratio of adjusted FFO cash interest
10	coverage averaging about 5.5x.
11	We assess KU's financial risk profile using our medial volatility
12	financial benchmarks, reflecting lower-risk regulated utility operations
13	and effective management of regulatory risk. These benchmarks are
14	more relaxed than those used for typical corporate issuers. ⁸
15	LGE's Investment Risk
16	LGE is rated A- with a "Stable" outlook from S&P and A3 with a "Stable
17	outlook from Moody's.
18	S&P makes the following assertions about KU's credit risk assessment:
19	Outlook
20	The stable outlook on LG&E reflects our stable outlook on its ultimate
21	parent, PPL Corp. We base this on our expectation that the parent's
22	business risk profile will not weaken and consolidated financial
23	measures will remain stable. Specifically, we expect PPL Corp.'s FFO
24	to debt will remain in the 16%-18% range through 2025.
25	* * *
26	Business Risk
27	Our assessment of LG&E's business risk profile primarily reflects the
28	company's regulated operations, which comprise vertically integrated
29	electric and natural gas distribution utilities, as well as Kentucky's
30	generally constructive regulatory framework.
	

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 $^{^8} Standard \& Poor's Ratings Direct @:$ Full Analysis: "Kentucky Utilities Company," January 24, 2025, (emphasize added).

The company has about 2,800 MW of generation capacity, including sizable coal-fired generation that contributes nearly 70% of its total generation capacity. There is greater operating risk from these generation assets than LG&E's transmission and distribution operations. The company has been upgrading its coal-fired generation plants to comply with environmental regulations. While the capital costs for these upgrades continue, they have diminished over time and now account for about 10% of the total \$6.4 billion capex amount (2024-2027). LG&E can recover these costs through the environmental cost-recovery mechanism, which limits the company's regulatory lag and supports its credit profile. The company is regulated by the KPSC and benefits from other mechanisms, such as a gas line tracker and a pass-through fuel cost mechanism, which help stabilize its operating cash flow. Moreover, LG&E's low-cost generation and efficient operations contribute to the overall competitive rates the company offers its customers.

Financial Risk

Under our base-case scenario, we assume LG&E's FFO to debt (S&P Global Ratings'-adjusted) will be in the 19%-22% range through 2026. We expect stability because the company benefits from recovery mechanisms, such as the environmental cost rider, as well as formulaic transmission rates and forward test years for rate cases. LG&E's ongoing discretionary cash flow deficits because of its heightened capital spending, which we expect it will fund at least partially with debt, offset these strengths. We anticipate the company's debt to EBITDA will be in the 3.5x-4.0x range through 2026. LG&E's supplemental FFO cash interest coverage ratio, which we expect will be in the range of 6.0x-6.5x through 2026, further bolsters the financial risk profile.

We assess LG&E's financial risk profile using our medial volatility financial benchmarks, reflecting lower risk regulated utility operations and effective management of regulatory risk. These benchmarks are more relaxed than those used for typical corporate issuers.⁹

⁹Standard & Poor's RatingsDirect®: Full Analysis: "Louisville Gas & Electric Company," January 24, 2025, (emphasize added).

1 II.E. KU/LGE's Proposed Capital Structure

2 Q WHAT IS KU/LGE'S PROPOSED CAPITAL STRUCTURE?

- 3 A KU and LGE's proposed capital structures is sponsored by its witness Julissa Burgos
- 4 and shown in Table 4 below.

TABLE 4

<u>KU/LGE's Proposed Capital Structure</u>
(December 31, 2026)

Description	<u>KU</u>	LGE
Short-Term Debt	2.55%	1.71%
Long-Term Debt	44.60%	45.36%
Common Equity	52.86%	52.93%
Total	100.00%	100.00%

Source: Schedule J-1.1/J-1.2.

- 5 Q ARE KU/LGE'S PROPOSED RATEMAKING CAPITAL STRUCTURE
- 6 WEIGHTS OF COMMON EQUITY AND DEBT GENERALLY CONSISTENT
- 7 WITH THE INDUSTRY AUTHORIZED RATEMAKING CAPITAL
- 8 STRUCTURES?
- 9 A No. KU/LGE's proposed ratemaking capital structures contain a higher percentage of
- 10 common equity to total capital than the industry average and median capital structure
- that is approved for setting rates. The industry average and median authorized
- ratemaking capital structure equity ratio over the last 10 years is shown in Table 1
- below.

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TABLE 5

<u>Trends in State Authorized Common Equity Ratios</u>
(Industry)

		Elec	tric ¹	Natura	ıl Gas¹
<u>Line</u>	<u>Year</u>	Average	Median	Average	Median
	(1)	(2)	(3)	(4)	(5)
1	2013	50.12%	51.03%	51.16%	50.43%
2	2014	50.28%	50.00%	51.90%	51.99%
3	2015	49.89%	50.47%	49.79%	50.33%
1	2016	49.70%	49.99%	51.85%	51.35%
2	2017	50.02%	49.85%	51.13%	51.76%
3	2018	50.60%	50.23%	51.56%	51.51%
4	2019	51.55%	51.37%	52.81%	52.42%
5	2020	50.93%	51.17%	52.34%	52.00%
6	2021	51.01%	52.00%	51.90%	52.00%
7	2022	51.57%	51.92%	51.65%	52.00%
8	2023	51.59%	52.27%	52.45%	52.00%
9	2024	51.07%	52.10%	52.25%	52.40%
10	2025	50.53%	51.12%	50.13%	49.75%
44	A	FO C00/	E4 040/	E4 C40/	E4 E20/
11	Average	50.68%	51.04%	51.61%	51.53%
12	Median	50.60%	51.12%	51.85%	51.99%

Source and Notes:

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As shown above in Table 5, the industry average and median common equity ratios for electric utilities over the last 10 years have been consistently around 50.0% - 52.0%. KU/LGE's proposed ratemaking capital structure of almost 53% contain more equity than typically approved for setting rates.

¹ S&P Global Market Intelligence, data through March 31, 2025.

⁻ Excludes Arkansas, Florida, Indiana and Michigan because they include non-investor capital.

Q	DOES SETTING RATES USING A RATEMAKING CAPITAL STRUCTURE
	WITH AN UNNECESSARILY LARGE COMMON EQUITY RATIO OF
	TOTAL CAPITAL IMPACT A UTILITY'S ABILITY TO KEEP RATES
	AFFORDABLE?

Yes. Common equity is the most expensive form of capital and is subject to income tax expense. Therefore, the revenue requirement cost to customers of a capital structure with a 9.5% return on equity and a 21% tax rate would be approximately 12.0%. In contrast, the marginal cost of debt right now for a Baa utility is around 5.5%. As such, utility common equity capital is more than twice (12.0% vs. 5.5%) as expensive as debt capital.

A utility must finance with a balance of debt and equity in order to produce a capital structure that minimizes its cost of capital while preserving its financial integrity and access to capital. A financial structure too heavily financed with debt would reflect excessive financial risk and would erode the utility's credit standing, likely impairing its access to capital under certain market conditions. Conversely, a capital structure too heavily weighted with common equity reflects too little financial risk and will increase the utility's overall rate of return with little to no benefit to retail customers. Therefore, a capital structure should reflect a reasonable balance of debt and equity in order to minimize the utility's cost of capital, preserve its access to capital markets under reasonable terms and prices, and support its financial integrity.

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¹⁰ 9.5% x (1/(1 - 21%)).

1 Q WHAT CAPITAL STRUCTURE DO YOU RECOMMEND THE COMMISSION

2 APPROVE FOR SETTING KU/LGE'S RATES IN THIS PROCEEDING?

3 I find the Companies' proposed ratemaking capital structure contains common equity Α ratios that are greater than necessary to support the utilities' financial integrity and credit 4 5 standing. This will be discussed in more detail below concerning my financial integrity 6 study for these utilities. However, that the Companies' proposed ratemaking capital 7 structure contains above industry average common equity ratios implies that these utilities are being operated with below industry average financial risk. Consequently, I 8 9 will consider the higher cost to customers to lower KU/LGE's financial risk 10 recommending my authorized return on equity.

II.F. Embedded Cost of Debt

12 Q WHAT IS KU'S EMBEDDED COST OF SHORT-TERM AND LONG-TERM

DEBT?

- 14 A KU's embedded costs of short-term and long-term debt are 4.46% and 4.93%, as
- developed on Schedule J-2 and J-3 and discussed in the direct testimony of Ms. Burgos.
- I have used the Company's proposed costs of short-term and long-term debt in the
- development of my overall rate of return.

1	Q	WHAT IS LGE'S EMBEDDED COST OF SHORT-TERM AND LONG-TERM	
2		DEBT?	
3	A	LGE's embedded costs of short-term and long-term debt are 4.46% and 4.95%, as	
4		developed on Schedule J-2 and J-3 and discussed in the direct testimony of Ms. Burgos.	
5		I have used the Company's proposed costs of short-term and long-term debt in the	
6		development of my overall rate of return.	
7		III. RETURN ON EQUITY	
8	Q	PLEASE DESCRIBE WHAT IS MEANT BY A "UTILITY'S COST OF	
9		COMMON EQUITY."	
10	A	A utility's cost of common equity is the expected return that investors require on an	
11		investment in the utility. Investors expect to earn their required return from receiving	
12		dividends and through stock price appreciation.	
13	Q	PLEASE DESCRIBE THE FRAMEWORK FOR DETERMINING A	
14		REGULATED UTILITY'S COST OF COMMON EQUITY.	
15	A	In general, determining a fair cost of common equity for a regulated utility has been	
16		framed by two hallmark decisions of the U.S. Supreme Court: Bluefield Water Works	
17		& Improvement Co. v. Pub. Serv. Comm'n of W. Va., 262 U.S. 679 (1923) and Fed.	
18		Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944). In these decisions, the	
19		U.S. Supreme Court found that just compensation depends on many circumstances and	
20		must be determined by fair and enlightened judgments based on relevant facts. The	

U.S. Supreme Court found that a utility is entitled to such rates as were permitted to
earn a return on its property devoted to the convenience of the public that is generally
consistent with the same returns available in other investments of corresponding risk.
The Court continued that the utility has no constitutional rights to profits, such as those
realized or anticipated in highly profitable enterprises or speculative ventures, and
defined the ratepayer/investor balance as follows:

The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under <u>efficient</u> and <u>economical management</u>, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.¹¹

As such, a fair rate of return is based on the expectation that the utility's costs reflect efficient and economical management, and the return will support its credit standing and access to capital without being in excess of this level. From these standards, rates to customers will be just and reasonable, and, under economic management, compensation to the utility will be fair and support its financial integrity and credit standing.

¹¹ Bluefield, 262 U.S. 679, 693 (1923), emphasis added.

III.A. Risk Proxy Group

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2	Q	PLEASE DESCRIBE HOW YOU IDENTIFIED A PROXY UTILITY GROUP
3		THAT COULD BE USED TO ESTIMATE KU/LGE'S CURRENT MARKET
4		COST OF EQUITY.

A To estimate the return on equity for the Utilities, Mr. D'Ascendis relied on an electric proxy group for KU and a combination of electric and gas groups for LGE. I relied on the same proxy groups developed by KU/LGE witness Mr. D'Ascendis with one exception. I excluded TXNM Energy because it entered into an agreement to be acquired by Blackstone Energy for \$11.5 billion. I believe my proxy groups have reasonably comparable total investment risk to KU/LGE.

Q PLEASE DESCRIBE WHY YOU BELIEVE YOUR ELECTRIC PROXY GROUP IS REASONABLY COMPARABLE IN INVESTMENT RISK TO KU/LGE.

My electric proxy group is shown in Exhibit MPG-3. The electric proxy group has an average credit rating from S&P of BBB+, which is a notch lower than KU/LGE's credit rating of A- from S&P. The proxy group has an average Moody's credit rating of Baa2, which is two notches lower than KU/LGE's credit rating of A3 from Moody.¹²

The proxy group has an average common equity ratio of 39.2% from S&P (including short-term debt) and a 43.2% equity ratio from *Value Line* (excluding short-term debt). The Companies' proposed ratemaking capital structure equity ratio of

¹² Burgos Direct Testimony at 5.

^{2025-00113 &}amp; 2025-00114 DoD/FEA's Direct Testimony of Michael P. Gorman

- 52.9% is higher than the average proxy group common equity ratio. I believe my electric proxy group will produce conservative return on equity estimates.
- Q PLEASE DESCRIBE WHY YOU BELIEVE YOUR GAS PROXY GROUP IS
 REASONABLY COMPARABLE IN INVESTMENT RISK TO LGE.
- My gas proxy group is also shown in Exhibit MPG-3. The gas proxy group has an average credit rating from S&P of BBB+, which is a notch lower than LGE's credit rating of A- from S&P. The proxy group has an average Moody's credit rating of A3, which is identical to LGE's credit rating from Moody.¹³

The proxy group has an average common equity ratio of 42.9% from S&P (including short-term debt) and a 48.7% equity ratio from *Value Line* (excluding short-term debt). The Companies' proposed ratemaking capital structure equity ratio of 52.9% is higher than the average proxy group common equity ratio. I believe my gas proxy group will produce conservative return on equity estimates.

- 14 Q PLEASE DESCRIBE WHY YOU BELIEVE YOUR COMBINATION PROXY
 15 GROUP IS REASONABLY COMPARABLE IN INVESTMENT RISK TO
 16 KU/LGE.
- 17 A My combination proxy group is also shown in Exhibit MPG-3. The combination proxy 18 group has an average credit rating from S&P of BBB+, which is a notch lower than 19 KU/LGE's credit rating of A- from S&P. The proxy group has an average Moody's

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¹³ Burgos Direct Testimony at 5.

^{2025-00113 &}amp; 2025-00114 DoD/FEA's Direct Testimony of Michael P. Gorman

credit rating of Baa1, which is also a notch lower than KU/LGE's credit rating of A3 from Moody. 14

The proxy group has an average common equity ratio of 40.4% from S&P (including short-term debt) and a 45.0% equity ratio from *Value Line* (excluding short-term debt). The Companies' proposed ratemaking capital structure equity ratio of 52.9% is higher than the average proxy group common equity ratio. I believe my combination proxy group will produce conservative return on equity estimates.

8 III.B. Discounted Cash Flow ("DCF") Model

9 Q PLEASE DESCRIBE THE DCF MODEL.

10 A The DCF model posits that a stock price is valued by summing the present value of
11 expected future cash flows discounted at the investor's required rate of return or cost of
12 capital. This model is expressed mathematically as follows:

13
$$P_0 = \frac{D_1}{(1+K)^1} + \frac{D_2}{(1+K)^2} \cdot \dots \cdot \frac{D_{\infty}}{(1+K)^{\infty}}$$
 (Equation 1)

15 $P_0 = Current stock price$

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16 $D = Dividends in periods 1 - \infty$

K = Investor's required return

This model can be rearranged to estimate the discount rate or investor-required return, known as "K." If it is reasonable to assume that earnings and dividends will grow at a constant rate, then Equation 1 can be rearranged as follows:

¹⁴ Burgos Direct Testimony at 5.

1		$K = D_1/P_0 + G$	(Equation 2)
2 3 4 5		$K = Investor$'s required retur $D_1 = Dividend$ in first year $P_0 = Current$ stock price $G = Expected$ constant divide	
6		Equation 2 is referred to as the	e annual "constant growth" DCF model.
7	Q	PLEASE DESCRIBE THE INPU	TS TO YOUR CONSTANT GROWTH DCF
8		MODEL.	
9	A	As shown in Equation 2 above, the D	OCF model requires a current stock price, expected
10		dividend, and expected growth rate i	n dividends.
11	Q	WHAT STOCK PRICE DID YOU	USE IN YOUR CONSTANT GROWTH DCF
12		MODEL?	
13	A	I relied on the average of the weekl	y high and low stock prices of the utilities in the
14		proxy group over a 13-week period e	nding on July 18, 2025. An average stock price is
15		less susceptible to market price va	priations than a price at a single point in time.
16		Therefore, an average stock price	minimizes the impact of aberrant market price
17		movements, which may not reflect the	ne stock's long-term value.
18		A 13-week average stock pr	ice reflects a period that is still short enough to
19		contain data that reasonably reflects	current market expectations, but the period is not

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so short as to be susceptible to market price variations that may not reflect the stock's

long-term value. In my judgment, a 13-week average stock price is a reasonable balance

Į.	between	the	need	to	reflect	current	market	expectations	and	the	need	to	capture
2	sufficient	t data	a to sn	ทดด	th out a	herrant i	market n	novements.					

WHAT DIVIDEND DID YOU USE IN YOUR CONSTANT GROWTH DCF

MODEL?

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I used the most recently paid quarterly dividend, as reported in *Value Line*. This dividend was annualized (multiplied by 4) and adjusted for next year's growth to produce the D₁ factor for use in Equation 2 above. In other words, I calculate D₁ by multiplying the annualized dividend (D₀) by (1+G).

9 Q WHAT DIVIDEND GROWTH RATES DID YOU USE IN YOUR CONSTANT

GROWTH DCF MODEL?

There are several methods that can be used to estimate the expected growth in dividends. However, regardless of the method, to determine the market-required return on common equity, one must attempt to estimate investors' consensus about what the dividend, or earnings growth rate, will be and not what an individual investor or analyst may use to make individual investment decisions.

As predictors of future returns, securities analysts' growth estimates have been shown to be more accurate than growth rates derived from historical data. ¹⁶ That is, assuming the market generally makes rational investment decisions, analysts' growth

¹⁵ The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

¹⁶ See, e.g., David Gordon, Myron Gordon & Lawrence Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management*, Spring 1989.

projections	are	more	likely	to	influence	investors'	decisions,	which	are	captured	in
observable s	stocl	k price	es, than	gr	owth rates	derived or	nly from his	storical	data	l.	

For my constant growth DCF analysis, I relied on a consensus, or mean, of professional securities analysts' earnings growth estimates as a proxy for investor consensus dividend growth rate expectations. I used the average of analysts' growth rate estimates from three sources: Zacks, MI, and I/B/E/S, provided by LSEG Workspace. All such projections were available on July 18, 2025 and all were reported online.

Each consensus growth rate projection is based on a survey of securities analysts. There is no clear evidence whether a particular analyst is most influential on general market investors. Therefore, a single analyst's projection does not predict general investor outlook as reliably as does a consensus of market analysts' projections. The consensus estimate is a simple arithmetic average, or mean, of surveyed analysts' earnings growth forecasts. A simple average of the growth forecasts gives equal weight to all surveyed analysts' projections. Therefore, a simple average, or arithmetic mean, of analyst forecasts is a good proxy for market consensus expectations.

17 Q WHAT ARE THE GROWTH RATES YOU USED IN YOUR CONSTANT 18 GROWTH DCF MODEL?

The growth rates I used in my DCF analysis are shown in Exhibit MPG-4. The average growth rate for my gas proxy group is 7.62%. The average growth rate for my electric proxy group is 6.75%. The average growth rate for my combined proxy group is 7.04%.

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1 Q WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF MODEL?

As shown in Exhibit MPG-5, the average and median constant growth DCF returns for my gas proxy group are 11.45% and 10.91%, respectively. The average and median constant growth DCF returns for my electric proxy group for the 13-week analysis are 10.83% and 10.41%, respectively. The average and median constant growth DCF returns for my combined proxy group are 11.04% and 10.77%, respectively.

7 Q DO YOU HAVE ANY COMMENTS ON THE RESULTS OF YOUR CONSTANT

GROWTH DCF ANALYSIS?

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A Yes. The constant growth DCF analysis for my proxy groups is based on an average long-term sustainable growth rate of approximately 7.00%. The three- to five-year growth rate is higher than my estimate of a maximum long-term sustainable growth rate of 4.10%. As discussed in detail below, the DCF model requires a growth rate that can be sustained in perpetuity. It is unreasonable to assume that utilities in general can grow at a rate above the growth rate of the U.S. economy. Therefore, applying a multi-stage DCF model that captures various growth rate outlooks as I have done is more reasonable in the current market environment.

Q HOW DID YOU ESTIMATE A MAXIMUM LONG-TERM SUSTAINABLE

18 **GROWTH RATE?**

19 A The long-term sustainable growth rate for a utility stock cannot exceed the growth rate 20 of the economy in which it sells its goods and services. The long-term maximum sustainable growth rate for a utility investment is, accordingly, best proxied by the projected long-term Gross Domestic Product ("GDP") growth rate, as that reflects the projected long-term growth rate of the economy as a whole. While growth rates over shorter periods can exceed the GDP growth rate, those short-term growth periods are likely followed by other periods where the growth rate is below the GDP. On average, over long periods of time, the growth rate is most accurately approximated by the long-term growth rate outlooks of the U.S. GDP.

Blue Chip Financial Forecasts projects that over the next 5 to 10 years, the U.S. nominal GDP will grow at an annual rate of approximately 4.1%. These GDP growth projections reflect a real growth outlook of around 2.0% and an inflation outlook of around 2.1% going forward. As such, the average nominal growth rate over the next 5 to 10 years is around 4.1%, which I believe is a reasonable proxy of long-term sustainable growth.¹⁷

IS THERE INDEPENDENT AUTHORITATIVE SUPPORT FOR USING LONG-TERM GDP GROWTH AS A MAXIMUM SUSTAINABLE GROWTH RATE?

Yes. In my multi-stage growth DCF analysis, I discuss academic and investment practitioner support for using the projected long-term GDP growth outlook as a maximum sustainable growth rate projection. However, using the long-term GDP growth rate as a conservative projection for the maximum sustainable growth rate is

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¹⁷ Blue Chip Financial Forecasts, June 2, 2025, at 14.

logical and is generally consistent with academic and economic practitioners' accepted practices.

WOULD IT BE REASONABLE TO EXPECT THAT THE SHORT-TERM GROWTH RATE CAN BE SUSTAINED INDEFINITELY, IF THE UTILITY

HAS A SUSTAINED LEVEL OF LARGE CAPITAL EXPENDITURES?

No. The growth rate largely tracks the percentage growth in rate base, which is a source of net income the utility earns from providing utility service. While capital investments are expected to be at elevated levels for the foreseeable future, the growth in rate base will start to slow over time, as elevated capital expenditures produce a lower base growth rate over time, because the elevated capital addition will become a lower percentage of embedded rate base. That is, elevated capital expenditures cannot reasonably be expected to expand above general inflation levels because utilities have limited amounts of qualified engineers and contractors and limited major equipment suppliers to provide the materials needed to replace and expand infrastructure assets or rate base. As embedded rate base grows, the percent growth in rate base starts to slow over time. For example, assume an elevated annual capital addition to rate base of \$100 and an embedded rate base of \$1,000. This would produce a rate base growth of 10% (\$100/\$1,000). However, if the embedded base grows from \$1,000 to \$2,000 over time, then the continued elevated capital addition to rate base of \$100 would slow the embedded rate base growth to 5% (\$100/\$2,000). Hence, growth of rate base and growth of earnings will start to slow over time as embedded rate base grows, even while

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1	annual capital additions to rate base stay elevated. As such, three- to five-year growth
2	rate projections may be reasonable for the next three to five years, but they are not
3	reasonable indicators of long-term, sustainable growth.

IV.C. Sustainable Growth DCF

5 Q PLEASE DESCRIBE HOW YOU ESTIMATED A SUSTAINABLE,

LONG-TERM GROWTH RATE FOR YOUR SUSTAINABLE GROWTH DCF

MODEL.

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A sustainable growth rate is based on the percentage of the utility's earnings that is retained and reinvested in utility plant and equipment. These reinvested earnings increase the earnings base ("rate base"). Earnings grow when plant funded by reinvested earnings is put into service, and the utility is allowed to earn its authorized return on such additional rate base investments.

The internal growth methodology is tied to the percentage of earnings retained by the utility and not paid out as dividends. The earnings retention ratio is 1 minus the dividend payout ratio. As the payout ratio declines, the earnings retention ratio increases. An increased earnings retention ratio will fuel stronger growth as the business funds more investments with retained earnings.

The payout ratios of the proxy group are shown in my Exhibit MPG-6. These dividend payout ratios and earnings retention ratios then can be used to develop a sustainable long-term earnings retention growth rate. A sustainable long-term earnings

1	etention	ratio	will help	gauge	whether	analysts'	current th	nree- to	five-year	growth	rate
1	projection	ns cai	n be susta	ined ov	ver an inc	definite p	eriod of ti	me.			

The data used to estimate the long-term sustainable growth rate is based on KU/LGE's current market-to-book ratio and on *Value Line*'s three- to five-year projections of earnings, dividends, earned returns on book equity, and stock issuances.

As shown in Exhibit MPG-7, the average sustainable growth rate using this internal growth rate model is 5.82% for my gas group, 5.20% for my electric group, and 5.40% for my combined proxy group. However, I would point out that prior to accounting for the external sale of additional shares, the internal growth rate for the proxy groups is in the range of 4.26% to 4.63%, which demonstrates that my sustainable growth rate of 4.10% is reasonable.

12 Q WHAT IS THE DCF ESTIMATE USING THESE SUSTAINABLE 13 LONG-TERM GROWTH RATES?

A DCF estimate based on these sustainable growth rates is developed in Exhibit MPG-8. As shown there, the sustainable growth DCF analysis produces a gas proxy group average and median DCF results for the 13-week period of 9.59% and 9.37%, respectively. The sustainable growth DCF analysis produces an electric proxy group average and median DCF results for the 13-week period of 9.21% and 8.68%, respectively. The sustainable growth DCF analysis produces combined proxy group average and median DCF results for the 13-week period of 9.34% and 9.05%, respectively.

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IV.D. Multi-Stage Growth DCF Model

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2 Q HAVE YOU CONDUCTED ANY OTHER DCF STUDIES?

Yes. My first constant growth DCF is based on consensus analysts' growth rate projections, so it is a reasonable reflection of rational investment expectations over the next three to five years. The limitation on this constant growth DCF model is that it cannot reflect the rational expectation that a period of high or low short-term growth can be followed by a change in growth to a rate that KU/LGE reflects long-term sustainable growth. Therefore, I performed a multi-stage growth DCF analysis to reflect this outlook of changing growth expectations.

Q WHY DO YOU BELIEVE GROWTH RATES CAN CHANGE OVER TIME?

Analyst-projected growth rates over the next three to five years will change as utility earnings growth outlooks change. Utility companies go through cycles in making investments in their system. When utility companies are making large investments, their rate base grows rapidly, which in turn accelerates earnings growth. Once a major construction cycle is completed or levels off, growth in the utility rate base slows and its earnings growth slows from an abnormally high three- to five-year rate to a lower sustainable growth rate.

As major construction cycles extend over longer periods of time, even with an accelerated construction program, the growth rate of the utility will slow simply because the pace of rate base growth will slow and because the utility has limited human and capital resources available to expand its construction program. Therefore, the three- to

five-year growth rate projection should only be used as a long-term sustainable growth rate in concert with a reasonable, informed judgment as to whether it reflects the current market environment, the industry, and whether the three- to five-year growth outlook is actually sustainable.

O PLEASE DESCRIBE YOUR MULTI-STAGE GROWTH DCF MODEL.

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The multi-stage growth DCF model reflects the possibility of non-constant growth for a company over time. The multi-stage growth DCF model reflects three growth periods: (1) a short-term growth period consisting of the first five years; (2) a transition period, consisting of the next five years (years 6 through 10); and (3) a long-term growth period starting in year 11 through perpetuity.

For the short-term growth period, I relied on the consensus analysts' growth projections I used above in my constant growth DCF model. For the transition period, the growth rates were reduced or increased by an equal factor reflecting the difference between the analysts' growth rates and the long-term sustainable growth rate. For the long-term growth period, I assumed each company's growth would converge to the maximum sustainable long-term growth rate, which is the projected long-term GDP growth rate.

Q WHY IS THE GDP GROWTH PROJECTION A REASONABLE PRO	XY FOR
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THE MAXIMUM SUSTAINABLE LONG-TERM GROWTH RATE?

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Utilities cannot indefinitely sustain a growth rate that exceeds the growth rate of the economy in which they sell services. Utilities' earnings/dividend growth is fueled by increased utility investment or rate base. Such investment, in turn, is driven by service area economic growth and demand for utility service. In other words, utilities invest in plants to meet sales demand growth. Sales growth, in turn, is tied to economic growth in their service areas.

The U.S. Department of Energy, Energy Information Administration ("EIA") has observed utility sales growth tracks via U.S. GDP growth, albeit at a lower level, as shown in Exhibit MPG-9. Utility sales growth, which is a proxy for revenue growth, has lagged behind GDP growth for more than a decade. As a result, nominal GDP growth, which tracks economic revenue changes via sales and price changes, is a very conservative proxy for utility financial growth – revenue growth, rate base growth, and earnings growth. Therefore, the U.S. GDP nominal growth rate is a reasonable proxy for the highest sustainable long-term growth rate of a utility.

1	Q	IS THERE RESEARCH THAT SUPPORTS YOUR POSITION THAT, OVER
2		THE LONG TERM, A COMPANY'S EARNINGS AND DIVIDENDS CANNOT
3		GROW AT A RATE GREATER THAN THE GROWTH OF THE U.S. GDP?
4	A	Yes. This concept is supported in published analyst literature and academic work
5		Specifically, in Fundamentals of Financial Management, a textbook published by
6		Eugene Brigham and Joel F. Houston, the authors state:
7 8 9 10		The constant growth model is most appropriate for mature companies with a stable history of growth and stable future expectations. Expected growth rates vary somewhat among companies, but <u>dividends for mature firms are often expected to grow in the future at about the same rate as nominal gross domestic product (real GDP plus inflation)</u> . ¹⁸
12		The use of the economic growth rate is also supported by investment
13		practitioners as outlined in the following:
14		Estimating Growth Rates
15 16 17 18 19 20		One of the advantages of a three-stage discounted cash flow model is that it fits with life cycle theories with regard to company growth. In these theories, companies are assumed to have a life cycle with varying growth characteristics. Typically, the potential for extraordinary growth in the near-term eases over time and eventually growth slows to a more stable level.
21		* * *
22 23 24 25		Another approach to estimating long-term growth rates is to focus on estimating the overall economic growth rate. Again, this is the approach used in the <i>Ibbotson Cost of Capital Yearbook</i> . To obtain the economic growth rate, a forecast is made of the growth rate's component parts.
26 27 28		Expected growth can be broken into two main parts: expected inflation and expected real growth. By analyzing these components separately, it is easier to see the factors that drive growth. ¹⁹

¹⁸ Fundamentals of Financial Management, Eugene F. Brigham & Joel F. Houston, Eleventh Edition 2007, Thomson South-Western, a Division of Thomson Corporation at 298 (emphasis added).

¹⁹ Morningstar, Inc., Ibbotson SBBI 2013 Valuation Yearbook at 51 and 52.

1 Q ARE THERE ACTUAL INVESTMENT RESULTS THAT SUPPORT THE

THEORY THAT THE GROWTH ON STOCK INVESTMENTS WILL NOT

3 EXCEED THE NOMINAL GROWTH OF THE U.S. GDP?

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- Yes. This is evident by a comparison of the compound annual growth of the U.S. GDP to the geometric growth of the U.S. stock market. Kroll measures the historical geometric growth of the U.S. stock market over the period 1926-2023 to be approximately 6.2%.²⁰ During this same time period, the U.S. nominal compound annual growth of the U.S. GDP was approximately 6.1%.²¹
 - As such, over the past 95 years, the geometric average growth of the U.S. nominal GDP has been slightly higher than, but comparable to, the geometric average growth of the U.S. stock market capital appreciation. This historical relationship indicates that the U.S. GDP growth outlook is a reasonable estimate of the long-term sustainable growth of U.S. stock investments.

USE THIS MEASURE TO COMPARE GDP GROWTH TO CAPITAL

Q WHAT IS THE GEOMETRIC AVERAGE AND WHY IS IT APPROPRIATE TO

16 APPRECIATION IN THE STOCK MARKET?

17 A The terms geometric average growth rate and compound annual growth rate are used
18 interchangeably. The geometric average growth rate is the calculated growth rate, or
19 return, which measures the magnitude of growth from start to finish. The geometric
20 average is best, and most often, used as a measurement of performance or growth over

²⁰ Kroll, 2023 SBBI Yearbook at 137, Market Direct.

²¹ U.S. Bureau of Economic Analysis, Table 1.1.5 Gross Domestic Product, Revised March 27, 2025.

a long period of time.²² Because I am comparing achieved growth in the stock market to achieved growth in U.S. GDP over a long period of time, the geometric average growth rate is most appropriate.

4 Q HOW DID YOU DETERMINE A LONG-TERM GROWTH RATE THAT 5 REFLECTS THE CURRENT CONSENSUS MARKET PARTICIPANT 6 OUTLOOK?

I relied on the economic consensus of long-term GDP growth projections. *Blue Chip Financial Forecasts* publishes the consensus for GDP growth projections twice a year. These consensus GDP growth outlooks are the best available measure of the market's assessment of long-term GDP growth because the analysts' projections reflect all current outlooks for GDP. They are, therefore, likely the most influential on investors' expectations of future growth outlooks. The consensus projections published for the GDP growth rate outlook is 4.1% over the next five to ten years.²³

I propose to use the consensus for projected five-year average GDP growth rate of 4.1%, as published by *Blue Chip Financial Forecasts*, as an estimate of long-term sustainable growth. *Blue Chip Financial Forecasts*' projections provide real GDP growth projections of 2.0% and inflation of approximately 2.1% over the next five- to ten-year (2027-2036) period, resulting in an average projected nominal annual GDP growth projection of 4.1%.²⁴ These GDP growth forecasts most accurately reflect the

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²² New Regulatory Finance, Roger Morin, PhD, at 133-134.

²³ Blue Chip Financial Forecasts, June 2, 2025, at 14.

²⁴ Id

- expectations of market participants because they are based on published economic
- 2 consensus projections.

3 Q DO YOU CONSIDER OTHER SOURCES OF PROJECTED LONG-TERM GDP

4 **GROWTH?**

- 5 A Yes, and these alternative sources corroborate the consensus analysts' projections I
- 6 relied on. Various, commonly relied upon analysts' projections are shown in Table 6
- 7 below.

TABLE 6

GDP Forecasts

Source	Projected <u>Period</u>	Real GDP	Inflation	Nominal GDP
Blue Chip Financial Forecasts ¹	5-10 Yrs	2.0%	2.1%	4.1%
EIA - Annual Energy Outlook ²	26 Yrs	1.8%	2.1%	3.9%
Congressional Budget Office ³	30 Yrs	1.6%	2.0%	3.7%
Moody's Analytics ⁴	30 Yrs	2.0%	2.1%	4.2%
Social Security Administration ⁵	75 Yrs	1.5%	2.4%	4.0%
Economist Intelligence Unit ⁶	31 Yrs	1.6%	2.3%	4.0%

Sources:

¹Blue Chip Financial Forecasts, June 2, 2025 at 14.

²U.S. EnergyInformation Administration (EIA), Annual Energy Outlook 2025, April 15, 2025.

³Congressional Budget Office, Long-Term Budget Outlook, March 27, 2025.

⁴Moody's Analytics Forecast, last updated June 9, 2025.

⁵Social Security Administration, "2025 OASDI Trustees Report," Table VI.G6. June 18, 2025.

⁶S&P MI, Economist Intelligence Unit, downloaded on July 18, 2025.

As shown in Table 6, the real GDP and inflation fall in the range of 1.6% to
2.0% and 2.0% to 2.4%, respectively. This results in a nominal GDP in the range of
3.7% to 4.1%.

Therefore, the nominal GDP growth projections made by these independent sources support my use of 4.1% as a reasonable estimate of market participants' expectations for long-term GDP growth.

Q WHAT STOCK PRICE, DIVIDEND, AND GROWTH RATES DID YOU USE IN

YOUR MULTI-STAGE GROWTH DCF ANALYSIS?

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I relied on the same 13-week average stock prices and the most recent quarterly dividend payment data discussed above. For stage one growth, I used the consensus analysts' growth rate projections discussed above in my constant growth DCF model. The first stage covers the first five years, consistent with the time horizon of the securities analysts' growth rate projections. The second stage, or transition stage, begins in year six and extends through year ten. The second stage growth transitions the growth rate from the first stage to the third stage using a straight linear trend. For the third stage, or long-term sustainable growth stage, starting in year eleven, I used a 4.1% long-term sustainable growth rate based on the consensus economists' long-term projected nominal GDP growth rate.

1 Q WHAT ARE THE RESULTS OF YOUR MULTI-STAGE GROWTH DCF

2 **MODEL?**

As shown in Exhibit MPG-10, the average and median DCF returns on equity for my gas proxy group using the 13-week average stock price are 8.70% and 9.21%, respectively. The average and median DCF returns on equity for my electric proxy group are 8.78% and 8.42%, respectively. The average and median DCF returns on equity for my combined proxy group are 8.75% and 8.47%, respectively.

8 **IV.E. DCF Summary Results**

9 Q PLEASE SUMMARIZE THE RESULTS FROM YOUR DCF ANALYSES.

10 A The results from my DCF analyses are summarized in Table 7 below.

TABLE 7 Summary of DCF Results										
<u>Description</u>	<u>G</u> Average	as <u>Median</u>	Electri Average	i <u>c</u> <u>Median</u>	<u>Combi</u> Average	ned <u>Median</u>				
Constant Growth DCF Model (Analysts' Growth)	10.83%	10.41%	10.83%	10.41%	11.04%	10.77%				
Constant Growth DCF Model (Sustainable Growth)	9.21%	8.68%	9.21%	8.68%	9.34%	9.05%				
Multi-Stage Growth DCF Model	8.78%	8.42%	8.78%	8.42%	8.75%	8.47%				
Average	9.61%	9.17%	9.61%	9.17%	9.71%	9.43%				

Based on the current market conditions, my DCF studies indicate a fair return on equity for KU/LGE in the range of 8.90% to 9.50%, with a midpoint of 9.20%.

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IV.F. Risk Premium Model

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O PLEASE DESCRIBE YOUR BOND	YIELD PLUS RISK PREMIUM MODEL
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This model is based on the principle that investors require a higher return to assume greater risk. Common equity investments have greater risk than bonds because bonds have more security of payment in bankruptcy proceedings than common equity and the coupon payments on bonds represent contractual obligations. In contrast, companies are not required to pay dividends or guarantee returns on common equity investments. Therefore, common equity securities are considered to be riskier than bond securities.

This risk premium model is based on two estimates of an equity risk premium. First, I quantify the difference between regulatory commission-authorized returns on common equity and contemporary U.S. Treasury bonds. The difference between the authorized return on common equity and the Treasury bond yield is the risk premium. I estimated the risk premium on an annual basis for each year from 1986 through March 31, 2025. The authorized returns on equity were based on regulatory commission-authorized returns for utility companies. Authorized returns are typically based on expert witnesses' estimates of the investor-required return at the time of the proceeding.

The second equity risk premium estimate is based on the difference between regulatory commission-authorized returns on common equity and contemporary "A" rated utility bond yields by Moody's. I selected the period 1986 through March 31, 2025 because public utility stocks have consistently traded at a premium to book value during that period. This is illustrated in Exhibit MPG-11, which shows the

market-to-book ratio since 1986 for the utility industry was consistently above a
multiple of 1.0x. Over this period, an analyst can infer that authorized returns on equity
were sufficient to support market prices that at least exceeded book value. This is an
indication that commission-authorized returns on common equity supported utilities'
ability to issue additional common stock without diluting existing shares. It further
demonstrates that utilities were able to access equity markets without a detrimental
impact on existing shareholders.

Based on this analysis, as shown in Exhibit MPG-12, the average indicated equity risk premium over U.S. Treasury bond yields has been 5.68% for electric and 5.61% for gas with a midpoint of 5.65%. Since the risk premium can vary depending upon market conditions and changing investor risk perceptions, I believe using an estimated range of risk premiums provides the best method to measure the current return on common equity for a risk premium methodology.

I incorporated five- and ten-year rolling average risk premiums over the study period to gauge the variability over time. These rolling average risk premiums mitigate the impact of anomalous market conditions and skewed risk premiums over an entire business cycle. As shown on my Exhibit MPG-12, page 1, the five-year electric rolling average risk premium over Treasury bonds ranged from 4.25% to 7.09%, with an average of 5.74%. The ten-year electric rolling average risk premium ranged from 4.38% to 6.91%, with an average of 5.77%. As shown on my Attachment MPG-12, page 2, the five-year gas rolling average risk premium over Treasury bonds ranged from

4.17% to 7.15%, with an average of 5.67%.	The ten-year	gas rolling	average	risk				
premium ranged from 4.30% to 6.91%, with an average of 5.70%.								

As shown on my Exhibit MPG-14, the average indicated equity risk premium over contemporary "A" rated Moody's utility bond yields was 4.33% for electric and 4.26% for gas with a midpoint of 4.30%. The five-year electric rolling average risk premiums ranged from 2.88% to 5.90%, with an average of 4.39%. The ten-year rolling average electric risk premiums ranged from 3.20% to 5.73%, with an average of 4.42%. As shown on page 2, the five-year gas rolling average risk premiums ranged from 2.80% to 5.96%, with an average of 4.33%. The ten-year gas rolling average risk premiums ranged from 3.11% to 5.74%, with an average of 4.34%.

DO YOU BELIEVE THAT THE TIME PERIOD USED TO DERIVE THESE EQUITY RISK PREMIUM ESTIMATES IS APPROPRIATE TO FORM ACCURATE CONCLUSIONS ABOUT CONTEMPORARY MARKET CONDITIONS?

Yes. Contemporary market conditions can change during the period that the rates determined in this proceeding will be in effect. A relatively long period of time where stock valuations reflect premiums to book value indicates that the authorized returns on equity and the corresponding equity risk premiums were supportive of investors' return expectations and provided utilities access to the equity markets under reasonable terms and conditions. Further, this time period is long enough to smooth any abnormal market movement that might distort equity risk premiums. While market conditions and risk

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premiums do vary over time, this historical time period is a reasonable period to estimate
the contemporary risk premium.

Alternatively, some studies, such as Kroll, have recommended that the use of "actual achieved investment return data" in a risk premium study should be based on long historical time periods. These studies find that achieved returns over short time periods may not reflect investors' expected returns due to unexpected and abnormal stock price performance. Short-term, abnormal actual returns would be smoothed over time and the achieved actual investment returns over long time periods would approximate investors' expected returns. Therefore, it is reasonable to assume that averages of annual achieved returns over long time periods will generally converge on the investors' expected returns.

My risk premium study is based on data that inherently relied on investor expectations, not actual investment returns, and, thus, need not encompass a very long historical time period.

Q WHAT DOES CURRENT OBSERVABLE MARKET DATA SUGGEST ABOUT INVESTOR PERCEPTIONS OF UTILITY INVESTMENTS?

The equity risk premium should reflect the relative market perception of risk today in the utility industry. I have gauged investor perceptions in utility risk today in Exhibit MPG-14, where I show the yield spread between utility bonds and Treasury bonds over the last 45 years. As shown in this exhibit, the average utility bond yield spreads over Treasury bonds for "A" and "Baa" rated utility bonds for this historical

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period are 1.47% and 1.88%, respectively. The utility bond yield spreads over Treasury
bonds for "A" and "Baa" rated utilities in 2022 were 1.61% and 1.91%, respectively.
In 2023, the spreads have declined to 1.45% for "A" rated utilities and 1.75% for "BBB"
utilities. In 2024, the spreads have decreased even further to 1.14% for "A" rated
utilities and 1.36% for "BBB" utilities. More recently, in 2025, the spreads have
declined to 1.10% for "A" rated utilities and 1.28% for "BBB" utilities.

Historically, I relied on the 13-week average bond yields. However, Moody's stopped publishing those on its website, so I started using the Mergent Bond Record, which reports the utility yields on a monthly basis. The current 3-month average "A" rated utility bond yield of 5.96%, when compared to the current Treasury bond yield of 4.83%, as shown in Exhibit MPG-15, implies a yield spread of 1.13%. This current utility bond yield spread is lower than the 45-year average spread for "A" rated utility bonds of 1.47%. The current spread for the "Baa" rated utility bond yield of 1.32% is also lower than the 45-year average spread of 1.88%.

15 Q IS THERE OBSERVABLE MARKET EVIDENCE TO HELP GAUGE 16 MARKET RISK PREMIUMS?

Yes. Market data illustrates how the market is pricing investment risk and gauging the current demands for returns based on securities of varying levels of investment risk. This market evidence includes bond yield spreads for different bond return ratings as implied by the yield spreads for Treasury, corporate and utility bonds. These spreads

provide an indication of the market's return requirement for securities of different levels of investment risk and required risk premium.

Table 8 summarizes the utility and corporate bond spreads relative to Treasury bond yields.

		TABLE			
	Electric Y	ield Spread	s - Risk Premium		
	Utility Bo	nds ¹	Utility Stock Sp	reads ²	Forward
<u>Year</u>	A - T	Baa - T	30-Year Treasury	Α	Inflation ²
	(1)	(2)	(3)	(4)	(5)
20-Year Historical Spread 10-Year Historical Spread	1.30% 1.26%	1.78% 1.62%	-0.32% -0.41%	0.98% 0.85%	2.18% 2.13%
3-Month Current Spreads: ³ Utility Bond Utility Stock	1.13%	1.32%	1.25%	2.38%	
Sources: 20-Year Historical Spread period 10-Year Historical Spread period 1Exhibit MPG-14. 2Exhibit MPG-2, page 5. 3Exhibit MPG-15, page 1.					

As outlined in Table 8 above, the A and Baa rated utility bonds to Treasury bond yield spreads during my study period are much lower than the yield spreads have been over the last 20- and 10-year historical averages. This indicates the market is demanding a lower return risk premium for investing in higher risk securities, utility bonds vs. Treasury bonds.

The historical utility/Treasury bond yields vs stock yields spreads currently are higher than the 10 and 20 year historical averages. This indicates that stock prices have held its valuations better than bond valuations, and bond yields have increased more than stock yields in the current market. This indicates that the market required return

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stocks have increased less than the market's required returns on bonds, or the equity risk
premiums have declined in the current market vs the historical periods. This widening
of Bond vs stock yield spreads indicates that equity risk premiums have declined in the
current market, and equity risk premiums currently are below the average historical
average equity risk premium.

Based on this assessment of observable risk premiums in the market, I conclude that equity risk premiums in the current marketplace are below the historical averages or normal spreads.

9 Q WHAT IS YOUR RECOMMENDED RETURN FOR KU/LGE BASED ON 10 YOUR RISK PREMIUM STUDY?

As outlined above, the current market data reflects risk premiums between securities of greater levels of investment risk near normal levels, but still below normal risk premiums. For these reasons, I recommend a risk premium near the historical average to reflect the observable market evidence of the equity risk premiums reflected in utility stock, utility bond, and Treasury bond valuations.

For Treasury bond yields, I considered the five-year rolling average historical risk premium of 5.74% (electric) and 5.67% (gas). The average utility risk premium is 5.65% (electric/gas) based on current market observable risk premium spreads. I will use a Treasury bond risk premium of 5.10%, which is about 90% of the historical average risk premium (5.65% x 0.90), or slightly below the normal risk premium suggested, to be reasonable based on market evidence. This risk premium and a

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projected	30-year	Treasury	bond	yield	of 4.60%	produces	an	indicated	equity	risk
premium	of 9.70%	(5.10% p	lus 4.0	60%).						

A risk premium based on utility bond yields reflects current observable bond yields as measured by the five-year rolling average risk premium estimate of 4.39% (electric) and 4.33% (gas), with an average of 4.30% (electric/gas), as shown on Exhibit MPG-13. The 3-month average A-rated utility bond yield is 5.96%, as shown on my Exhibit MPG-15, page 1. As outlined above, the current equity risk premium relative to utility bond yields is below historical averages. The observable evidence shows that current equity risk premiums are very low in relation to bond risk premiums. A risk premium for the current market is about 3.90% which is about 90% of the historical utility risk premium, (4.30% x 0.90). This risk premium combined with the A-rated utility bond yield of 5.96% produces a risk premium return of approximately 9.86% (3.90% plus 5.96%), rounded to 9.85%.

Therefore, a risk premium estimate based on observable risk premiums in the marketplace, and the expected outlook for moderation in long-term interest rates over the next couple years, support a risk premium-based return on equity for KU/LGE in the range of 9.70% to 9.85%, with a midpoint of 9.77%, rounded to 9.75%.

IV.G. Capital Asset Pricing Model ("CAPM")

Q PLEASE DESCRIBE THE CAPM.

20 A The CAPM method of analysis is based upon the theory that the market-required rate of 21 return for a security is equal to the risk-free rate, plus a risk premium associated with

1	the specific security. This relationship between risk and return can be expressed
2	mathematically as follows:
3	$R_i = R_f + B_i x (R_m - R_f)$ where:
4 5 6 7	R_i = Required return for stock i R_f = Risk-free rate R_m = Expected return for the market portfolio B_i = Beta - Measure of the risk for stock
8	The stock-specific risk term in the above equation is beta. Beta represents the
9	investment risk that cannot be diversified away when the security is held in a diversified
10	portfolio. When stocks are held in a diversified portfolio, stock-specific risks can be
11	eliminated by balancing the portfolio with securities that react in the opposite direction
12	to firm-specific risk factors (e.g., business cycle, competition, product mix, and
13	production limitations).
14	Risks that cannot be eliminated when held in a diversified portfolio are
15	non-diversifiable risks. Non-diversifiable risks are related to the market and referred to
16	as systematic risks. In contrast, risks that can be eliminated by diversification are
17	non-systematic risks. In a broad sense, systematic risks are market risks and
18	non-systematic risks are business risks. The CAPM theory suggests the market will not

The beta is a measure of these systematic, or non-diversifiable risks.

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compensate investors for assuming risks that can be diversified away. Therefore, the

only risk investors will be compensated for are systematic, or non-diversifiable, risks.

1 Q PLEASE DESCRIBE THE INPUTS TO YOUR CAPM.

- 2 A The CAPM requires an estimate of the market risk-free rate, KU/LGE's beta, and the
- 3 market risk premium.

4 Q WHAT DID YOU USE AS AN ESTIMATE OF THE MARKET RISK-FREE

5 RATE?

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- 6 A As previously noted, Blue Chip Financial Forecasts projected 30-year Treasury bond
- yield is 4.60%.²⁵ The current 30-year Treasury bond yield is 4.83% as shown in
- 8 Exhibit MPG-15.

9 Q WHY DID YOU USE LONG-TERM TREASURY BOND YIELDS AS AN

ESTIMATE OF THE RISK-FREE RATE?

Treasury securities are backed by the full faith and credit of the United States government. Therefore, long-term Treasury bonds are considered to have negligible credit risk. Also, long-term Treasury bonds have an investment horizon similar to that of common stock. As a result, investors' long-run inflation expectations are reflected in both common stocks' required returns and long-term bond yields. Therefore, the nominal risk-free rate (or expected inflation rate and real risk-free rate) included in a long-term bond yield is a reasonable estimate of the nominal risk-free rate included in

common stock returns.

²⁵ Blue Chip Financial Forecasts, July 1, 2025, at 2.

Treasury bond yields, however, do include risk premiums related to unanticipated future inflation and interest rates. In this regard, a Treasury bond yield is not a risk-free rate. Risk premiums related to unanticipated inflation and interest rates reflect systematic market risks. Consequently, for companies with betas less than 1.0, using the Treasury bond yield as a proxy for the risk-free rate in the CAPM analysis can produce an overstated estimate of the CAPM return.

Q WHAT BETA DID YOU USE IN YOUR ANALYSIS?

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I relied on the *Value Line* Investment Survey beta methodology. The *Value Line* Investment Survey publishes betas for companies included in its Investment Survey across various industries, including the electric and gas utility industry. For purposes of my analysis, I relied on the actual published *Value Line* betas. The *Value Line's* published beta is based on a five-year historical period. Market data that existed during the early onset years of the COVID-19 pandemic, around March/April of 2020, significantly skewed the estimate of betas for low-risk companies like utilities. Betas measured over a more recent historical period exclude this aberrant market movement and produce a forward looking beta that more reasonably aligns with the risk of utilities versus that of the overall market.

Shown in my Exhibit MPG-16 at page 1, I present the published *Value Line* data. *Value Line's* beta adjustment methodology is based on a regression of the weekly percent change in the subject Company's stock price, versus the weekly percent change in the New York Stock Exchange Index over a five-year period. This regression study

produces raw beta estimates. The raw beta estimates are then adjusted to reflect a forward outlook that raw betas tend to regress towards the market beta of 1.0 over time. This forward looking adjustment to the raw beta is based on the following formula, 0.67 x raw beta plus 0.25 x the market beta of 1. The forward beta adjustment converts the raw historical beta to a forward looking beta estimate.

As shown on my Exhibit MPG-16, the published *Value Line* beta for my gas electric and combined proxy groups are 0.81, 0.76 and 0.78, respectively. I would point out that more recently the *Value Line* average beta has declined significantly from the high beta estimates triggered at the onset of the COVID-19 pandemic. As discussed earlier the combined group beta of 0.78 reflects the gas and electric operations.

Therefore, I will rely on the average beta estimate of 0.77 produced by the electric and the combination proxy groups in my CAPM study, which is also supported by historical beta estimates as shown on my Exhibit MPG-16.

O HOW DID YOU DERIVE YOUR MARKET RISK PREMIUM ESTIMATE?

I derived two market risk premium estimates: a forward-looking estimate and one based on a long-term historical average. The forward-looking estimate was derived by estimating the expected return on the market (as represented by the S&P 500) and subtracting the risk-free rate from this estimate. I estimated the expected return on the S&P inflation rate to the long-term historical arithmetic average real return on the market. The real return on the market represents the achieved return above the rate of inflation.

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Historically, I relied on Kroll's 2023 SBBI Yearbook to estimate the market rea
return. However, Kroll's SBBI Yearbook has been discontinued. Therefore, using the
same methodology to estimate the historical real return on the market over the period
1926-2023, I relied on data from Morningstar Direct. The historical arithmetic average
real market return over the period 1926-2023 is 9.02%. ²⁶ A current consensus for
projected inflation, as measured by the GDP Deflator, is 2.20%. ²⁷ Using these
estimates, the expected market return is 11.42%. ²⁸ The market risk premium then is the
difference between the 11.42% expected market return and my 4.60% risk-free rate
estimate, or 6.82%, which I referred to as a normalized market risk premium.

A historical estimate of the market risk premium was also calculated by using data provided by Morningstar Direct. Over the period 1926-2023, Morningstar Direct estimated that the arithmetic average of the achieved total return on the S&P 500 was 12.16% and the total return on long term Treasury bonds was 5.62%.²⁹ The indicated market risk premium is 6.54% (12.16% minus 5.62%).

The long-term Treasury bond yield of 5.62% occurred during a period of inflation of approximately 3.02%, thus, implying a real return on long term Treasury bonds of 2.60%.

²⁶ Morningstar Direct.

²⁷ Blue Chip Financial Forecasts, July 1, 2025, at 2.

 $^{^{28}}$ [(1 + 0.0902) x (1 + 0.0220) - 1] * 100.

²⁹ Morningstar Direct.

HOW DOES YOUR ESTIMATED MARKET RISK PREMIUM RANGE

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COMPARED TO THAT ESTIMATED BY KROLL AND MORNINGSTAR?

Kroll makes several estimates of a forward-looking market risk premium based on actual achieved data from the historical period of 1926-2023, as well as normalized data. Using this data, Kroll estimates a market risk premium derived from the total return on the securities that comprise the S&P 500, less the income returns on Treasury bonds. The total return includes capital appreciation, dividend or coupon reinvestment returns, and annual yields received from coupons and/or dividend payments. The income return, in contrast, only reflects the income return received from dividend payments or coupon yields.

Kroll's range is based on several methodologies. As noted above, Kroll no longer publishes the *SBBI Yearbook*. Utilizing data through 2023 from Morningstar Direct, using the same methodology relied on by Kroll, the market risk premium is 7.32%, which is based on the difference between the total market return on common stocks (S&P 500) less the income returns on 20-year Treasury bond investments over the 1926-2023 period.³⁰

Second, Kroll used the Ibbotson & Chen supply-side model which produced a market risk premium estimate of 6.22%.³¹ Kroll explains that the historical market risk premium based on the S&P 500 was influenced by an abnormal expansion of Price-to-Earnings ("P/E") ratios relative to earnings and dividend growth during the period, primarily over the last 30 years. Kroll believes this abnormal P/E expansion is

³⁰ Kroll, 2023 SBBI Yearbook at 191; Morningstar Direct.

³¹ Kroll, 2023 SBBI Yearbook at 198-201.

not sustainable.	In order to control for the volatility of extraordinary events and their
impacts on P/E ra	atios, Kroll takes into consideration the three-year average P/E ratio as
well as the currer	nt P/E ratio ³²

Finally, Kroll develops its own recommended equity, or market risk premium, by employing an analysis that takes into consideration a wide range of economic information, multiple risk premium estimation methodologies, and the current state of the economy by observing measures such as the level of stock indices and corporate spreads as indicators of perceived risk. Based on this methodology and utilizing the higher of a "normalized" risk-free rate of 3.5%, Kroll concludes the current expected, or forward-looking, market risk premium is 5.5%, implying an expected return on the market of 9.0%. However, when the current market risk-free rate exceeds the normalized risk-free rate, Kroll recommends applying the current 20-year Treasury yield of approximately 4.7%. Currently, the 20-year Treasury yield is above the normalized risk-free rate. Hence, based on Kroll's methodology, the risk premium is 10.2%.³³

Importantly, Kroll's market risk premiums are measured over a 20-year Treasury bond. Because I am relying on a projected 30-year Treasury bond yield, the results of my CAPM analysis should be considered conservative estimates for the cost of equity.

³² *Id. and* Kroll, *Cost of Capital Navigator*, https://www.kroll.com/en/cost-of-capital.

³³ "Kroll Raises Recommended U.S. Equity Risk Premium Amid Increased Trade Uncertainty and a Cloudier Economic Outlook," April 15, 2025.

1 Q WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?

As shown on my Exhibit MPG-17, using a current market risk-free rate of 4.60% and a projected market return of 11.42% produces a market risk premium of 6.82%. When combined with the beta of 0.77 as discussed above, this indicates a CAPM return estimate of 9.85%.

6 IV.H. Return on Equity Summary

7 Q BASED ON THE RESULTS OF YOUR RETURN ON COMMON EQUITY

8 ANALYSES DESCRIBED ABOVE, WHAT RETURN ON COMMON EQUITY

9 **DO YOU RECOMMEND FOR KU/LGE?**

Based on my analyses, I recommend KU/LGE's current market cost of equity be in the range of 9.20% to 9.80%, with a point estimate of 9.50% as summarized in Table 9 below.

TABLE 9						
Return on Common Equity Summary						
Description	Results					
DCF	9.20%					
Risk Premium	9.75%					
CAPM	9.85%					

1		My market-based return on common equity of 9.50% falls within my estimated
2		range of 9.20% to 9.85%. The low-end of my range is based on my DCF studies, and
3		the high-end is based on my risk premium and CAPM studies.
4		The midpoint of my recommended range is particularly reasonable, given the
5		large common equity ratio recommended by the utilities in this case.
6		My return on equity estimates reflect observable market evidence, the impact of
7		the Fed's policies on current and expected long-term capital market costs, an assessment
8		of the current risk premium built into current market securities, and a general assessment
9		of the current investment risk characteristics of the regulated utility industry and the
10		market's demand for utility securities.
11	III.I.	Financial Integrity
12	Q	WILL YOUR RECOMMENDED OVERALL RATE OF RETURN SUPPORT
13		AN INVESTMENT GRADE BOND RATING FOR KU/LGE?
14	A	Yes. I have reached this conclusion by comparing the key credit rating financial ratios
15		for KU/LGE at my proposed return on equity and capital structure to S&P's benchmark
16		financial ratios using S&P's new credit metric ranges.
17	Q	PLEASE DESCRIBE THE MOST RECENT S&P FINANCIAL RATIO CREDIT
18		METRIC METHODOLOGY.

20

business risk of utility companies and related bond ratings. On May 27, 2009, S&P

expanded	its	matrix	criteria	by	including	additional	business	and	financial	risk
categories	.34									

Based on S&P's most recent credit matrix, the business risk profile categories are "Excellent," "Strong," "Satisfactory," "Fair," "Weak," and "Vulnerable." Most utilities have a business risk profile of "Excellent" or "Strong."

The financial risk profile categories are "Minimal," "Modest," "Intermediate," "Significant," "Aggressive," and "Highly Leveraged." Most of the utilities have a financial risk profile of "Significant" or "Aggressive." I have assessed KU/LGE's credit metrics based on an "Excellent" business risk profile and a "Significant" financial risk profile based on the medial volatility tables, which is consistent with the ranking of regulated utilities with no commodity risk.

PLEASE DESCRIBE S&P'S USE OF THE FINANCIAL BENCHMARK RATIOS IN ITS CREDIT RATING REVIEW.

S&P evaluates a utility's credit rating based on an assessment of its financial and business risks. A combination of financial and business risks equates to the overall assessment of KU/LGE's total credit risk exposure. On November 19, 2013, S&P updated its methodology. In its update, S&P published a matrix of financial ratios that defines the level of financial risk as a function of the level of business risk.

Q

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³⁴ S&P updated its 2008 credit metric guidelines in 2009, and incorporated utility metric benchmarks with the general corporate rating metrics. *Standard & Poor's RatingsDirect*: "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded," May 27, 2009.

S&P publishes ranges for primary financial ratios that it uses as guidance in its
credit review for utility companies. The two core financial ratio benchmarks it relies on
in its credit rating process includes, (1) Debt to Earnings Before Interest, Taxes,
Depreciation and Amortization ("EBITDA"); and (2) Funds From Operations ("FFO")
to Total Debt. ³⁵

Q HOW DID YOU APPLY S&P'S FINANCIAL RATIOS TO TEST THE REASONABLENESS OF YOUR RATE OF RETURN RECOMMENDATIONS? A I calculated each of S&P's financial ratios based on KU/LGE's cost of service for its regulated utility operations in its Kentucky service territory. While S&P would normally look at total consolidated financial ratios in its credit review process, my investigation in this proceeding is not the same as S&P's. I am attempting to judge the reasonableness of my proposed rate of return for rate-setting in KU/LGE's Kentucky regulated utility operations. Hence, I am attempting to determine whether my proposed rate of return will in turn support cash flow metrics, balance sheet strength, and earnings that will support an investment grade bond rating and KU/LGE's financial integrity.

16 Q DID YOU INCLUDE ANY OFF-BALANCE SHEET ("OBS") DEBT 17 EQUIVALENTS?

18 A Yes. Even though the Companies do not have a significant amount of off-balance sheet 19 debt equivalents, I obtained the imputed amount of the debt adjustments and the

³⁵ Standard & Poor's RatingsDirect: "Criteria: Corporate Methodology," November 19, 2013.

^{2025-00113 &}amp; 2025-00114 DoD/FEA's Direct Testimony of Michael P. Gorman

L	associated interest and depreciation expenses used by S&P to assess the Companies'
2	credit worthiness and included those in the development of my credit metrics.

Q PLEASE DESCRIBE THE RESULTS OF THIS CREDIT METRIC ANALYSIS AS IT RELATES TO KU.

The S&P financial metric calculations for KU at a 9.50% return are developed on Exhibit MPG-18, page 1. The credit metrics are produced below. I relied on KU's financial risk profile from S&P of "Significant" and business risk profile of "Excellent," based on medial volatility benchmark table.

Based on an equity return of 9.50% and KU's proposed common equity ratio of 53%, the Company will be provided an opportunity to produce a Debt to EBITDA ratio of 2.5x. This is within S&P's "Intermediate" guideline range of 2.5x-3.5x.³⁶ Please note, a lower ratio indicates less risk due to greater EBITDA coverage of debt. This ratio indicates that KU will be able to maintain its current investment grade bond rating at my overall rate of return.

KU's utility operations FFO to total debt coverage at a 9.50% equity return and its proposed equity ratio of 53% is 28%, which is also within S&P's "Intermediate" metric guideline range of 23% to 35%. This ratio again suggests that KU's cost of service in this case would support its strong credit rating. The strong FFO/Debt ratio is impacted by KU's overreliance on equity capital and underreliance on debt capital. That

Α

³⁶ Standard & Poor's RatingsDirect[®]: "Criteria: Corporate Methodology," November 19, 2013.

is, it has	an overstated	equity	weight	of total	capital,	which	enhances	its	cash	flow
coverage	s of debt and lo	wers it	financia	al risks.						

A

I conclude that KU's core credit metrics ratios, based on the Company's proposed capital structure and my return on equity, will support an investment grade credit standing for KU.

6 Q PLEASE DESCRIBE THE RESULTS OF THIS CREDIT METRIC ANALYSIS 7 AS IT RELATES TO LGE.

The S&P financial metric calculations for LGE at a 9.50% return are developed on Exhibit MPG-18, page 2. I relied on LGE's financial risk profile from S&P of "Significant" and business risk profile of "Excellent," based on medial volatility benchmark table.

Based on an equity return of 9.50% and LGE's proposed common equity ratio of 53%, the Company will be provided an opportunity to produce a Debt to EBITDA ratio of 2.7x. This is within S&P's "Intermediate" guideline range of above 2.5x-3.5x.³⁷ This ratio indicates that LGE will be able to maintain its current investment grade bond rating at my overall rate of return.

LGE's utility operations FFO to total debt coverage at a 9.50% equity return and its proposed equity ratio of 53% is 26%, which is also within S&P's "Intermediate" metric guideline range of 23% to 35%. This ratio also suggests that LGE's cost of service in this case would support its strong credit rating. The strong FFO/Debt ratio is

³⁷ Standard & Poor's RatingsDirect[®]: "Criteria: Corporate Methodology," November 19, 2013.

impacted by LGE's overreliance on equity capital and underreliance on debt capital.
That is, it has an overstated equity weight of total capital which enhances its cash flow
coverages of debt and lowers it financial risks.

I conclude that LGE's core credit metrics ratios based on the Company's proposed capital structure and my return on equity will support an investment grade credit standing for LGE.

IV. RESPONSE TO KU/LGE WITNESS MR. DYLAN D'ASCENDIS

WHAT RETURN ON COMMON EQUITY IS KU/LGE PROPOSING FOR THIS

PROCEEDING?

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Mr. D'Ascendis estimates an unadjusted market return on equity in the range of 10.29% to 11.92% using three market models – DCF, risk premium, and CAPM – applied to a utility proxy group and a non-price regulated proxy group. He then includes three return on equity adders to his estimated market return on equity for LG&E and KU: (1) a size adjustment in the range of 5-15 basis points, (2) a credit risk adjustment of 7 basis points (reduction), and (3) a flotation cost adjustment of 15 basis points. With these adders to his market return on equity for his electric and gas proxy groups, Mr. D'Ascendis recommends a return on equity in the range of 10.46% to 12.22% with a point estimate return of 10.95%.³⁸

³⁸ D'Ascendis Direct Testimony at 4 and Exhibit DWD-1.

1 Q IS MR. D'ASCENDIS' ESTIMATED UNADJUSTED RETURN ON EQUITY

REASONABLE?

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A No. Mr. D'Ascendis' estimated unadjusted market return in the range of 10.29% to 11.92% for his proxy groups' companies is significantly overstated based on his use of unsustainable growth rate estimates in his DCF analyses and overstated risk premium estimates for both his risk premium and CAPM models. Also, his unadjusted market return proposed return on equity adders in the range of 13-30 basis points are not cost-justified and further inflate his recommended return on equity, which exceeds his own market cost of equity estimates. These equities return adders should be rejected.

10 Q PLEASE DESCRIBE MR. D'ASCENDIS' METHODOLOGIES USED TO 11 SUPPORT HIS ESTIMATE OF THE MARKET COST OF COMMON EQUITY 12 FOR KU/LGE.

Mr. D'Ascendis estimates a return on equity for KU/LGE based on the DCF model, a Risk Premium ("RP") model, that he calls the Predictive Risk Premium ModelTM ("PRPMTM"), a bond yield plus risk premium model, as well as the traditional and empirical forms of the CAPM. Mr. D'Ascendis applies these models to both a gas and electric utility proxy groups and a non-price regulated proxy group. The high-end (11.92%(gas) / 11.84%(electric)) of Mr. D'Ascendis' range is based on his non-price regulated proxy groups results. The low-end of his range (10.29%(gas) / 10.32% (electric)) was based on the DCF estimate produced by his proxy group.³⁹

³⁹ D'Ascendis Direct Testimony at 4-5.

1 Q PLEASE SUMMARIZE MR. D'ASCENDIS' RESULTS.

2 A Mr. D'Ascendis' results are summarized in Table 10 below.

TABLE 10
Summary of Mr. D'Ascendis' Return on Equity Estimates

	D'Aso	<u>cendis</u>	<u>Adj</u>	usted
Models	Gas	Electric	Gas	Electric
	(1)	(2)	(3)	(4)
DCF	10.29%	10.32%	8.42%	8.69%
RP	10.86%	10.79%	9.86%	9.86%
CAPM	11.12%	10.75%	10.00%	9.60%
Non-Price Regulated Companies	11.92%	11.84%	<u>Reject</u>	<u>Reject</u>
Indicated Return on Equity	10.29%-11.92%	10.32%-11.84%	9.50%	9.50%
Size Adjustment	0.15%	0.05%-0.10%	Reject	Reject
Credit Risk Adjustment	0.00%	-0.07%	Reject	Reject
Flotation Cost Adjustment	<u>0.15%</u>	<u>0.15%</u>	Reject	Reject
Total Adders	0.30%	0.13%-0.18%	Reject	Reject
Return on Equity Range	10.59%-12.22%	10.46%-12.03%		
Recommended Return on Equity	<u>10.95%</u>	<u>10.95%</u>	<u>9.50%</u>	

Sources:

D'Ascendis Direct Testimony at 4-5 and Schedule (DWD)-1, page 2.

For the reasons outlined below, reasonable adjustments to Mr. D'Ascendis'

⁴ return on equity estimates show that my recommended return of 9.50% is reasonable.

IV.A. D'Ascendis' Proposed Size Adjustment Adder

2 Q PLEASE DESCRIBE THE SIZE ADJUSTMENT RETURN ON EQUITY

3 ADDER PROPOSED BY MR. D'ASCENDIS.

- 4 A Mr. D'Ascendis proposes to add a return on equity adder of 15 basis points to his gas
- 5 proxy group market return and 5-10 basis points for his electric proxy group to reflect
- 6 his belief that KU and LGE have greater risk relative to that of his proxy groups, due to
- 7 their market capitalization size.⁴⁰

8 Q HOW DID MR. D'ASCENDIS ESTIMATE THIS 5-15 BASIS POINT CAPITAL

9 **SIZE ADDER?**

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Mr. D'Ascendis approximates a market value for KU/LGE (KU and LGE are not publicly traded and do not have a market value) and compares their market size to the actual market capitalization size for his utility proxy groups. Mr. D'Ascendis estimates that the gas proxy group market valuation is about 4.0 times larger than his estimated market value for LGE (gas). Similarly, he estimates that the electric proxy group market valuation is about 2.6 times larger than his estimated market value for LGE (electric) and 4.2 times greater than KU.

He then compares the actual market capitalization size for the proxy groups, and his estimated proxy value weight for KU/LGE, to the market capitalization size deciles published by Kroll.

⁴⁰ D'Ascendis Direct Testimony at 49-56.

He relies on 2024 Kroll Cost of Capital Navigator estimated CAPM return difference for companies that fall within market capitalization size deciles. Mr. D'Ascendis estimates that the proxy groups' market capitalization sizes puts them in the approximate 4th decile (gas) and 2nd decile (electric) of returns as estimated by Kroll, and his estimated market capitalization for KU, LGE (electric) and LGE (gas) puts it in the 4th, 5th, and 7th decile size return category. According to Mr. D'Ascendis, this indicates a return on equity adder in the range of 0.18% to 0.75% to reflect the difference in risk caused by market capitalization size. ⁴¹ However, using his judgment, Mr. D'Ascendis recommends a return on equity size adder of 5 basis points for KU, 10 basis points for LGE (electric) and 15 basis points for LGE (gas). ⁴²

IS MR. D'ASCENDIS' PROPOSED 5-15 BASIS POINT SIZE RETURN ON EQUITY ADDER FOR KU/LGE REASONABLE?

No. There are several problems with this size adjustment. First, Mr. D'Ascendis applied a size adjustment without even considering the average capitalization of his proxy groups relative to the capitalization structure that supports KU and LGE, which is their parent PPL Corp. A return on equity adder is not justified in the way performed by Mr. D'Ascendis because he has not accurately measured the corporate structure which owns the Companies. Specifically, their parent company has a market capitalization of \$27 billion, almost twice the size of the proxy groups. This higher capitalization warrants a reduction to the pure CAPM return.

Q

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⁴¹ D'Ascendis Direct Testimony at 52 and Exhibit DWD-8.

⁴² D'Ascendis Direct Testimony at 53.

Further, the size adjustment, as applied by Mr. D'Ascendis, is not risk comparable to KU and LGE and should be rejected.

3 Q WHY IS MR. D'ASCENDIS' SIZE ADJUSTMENT NOT RISK COMPARABLE

TO KU AND LGE?

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His size adjustment is based on companies that have significantly more systematic risks that are not reflective of the utility industry or KU and LGE. The size adjustment relied on by Mr. D'Ascendis reflects companies that have unadjusted beta estimates well in excess of 1.00.⁴³ I have provided the beta estimates, as calculated by Kroll, for each decile below in Table 11.

TABLE 11

Kroll Size Adjustments and Corresponding Betas

CRSP	Market Cap (\$ Bill) ¹			\$ Bill) ¹	Size		Beta	
<u>Decile</u>	S	mallest	Ī	_argest	Premium ¹	Kroll ¹	VL Proxy ²	Raw Proxy ³
1	\$	36,943	\$2	,662,326	-0.06%	0.92	0.76	0.61
2	\$	14,911	\$	36,391	0.46%	1.04	0.76	0.61
3	\$	7,494	\$	14,820	0.61%	1.10	0.76	0.61
4	\$	4,622	\$	7,461	0.64%	1.13	0.76	0.61
5	\$	3,011	\$	4,622	0.95%	1.16	0.76	0.61
6	\$	1,864	\$	3,011	1.21%	1.18	0.76	0.61
7	\$	1,050	\$	1,862	1.39%	1.25	0.76	0.61
8	\$	556	\$	1,046	1.14%	1.30	0.76	0.61
9	\$	213	\$	555	1.99%	1.33	0.76	0.61
10	\$	2	\$	213	4.70%	1.38	0.76	0.61

Sources:

¹2024 Kroll Cost of Capital Navigator, 2024 CRSP Decile Study December 31, 2023.

²D'Ascendis Direct Testimony, Exhibit DWD-5, average of eletric (0.73) and gas (0.79).

 $^{^{3}}$ Raw Beta = (VL Beta - 0.35) / 0.67.

⁴³ 2024 Kroll Cost of Capital Navigator, 2024 CRSP Deciles Size Study, December 31, 2023.

These unadjusted beta estimates are substantially higher than the average
adjusted Value Line beta of 0.73 (electric) and 0.79 (gas) used by Mr. D'Ascendis as
reflective of the Company's investment risk. To put this into a more of an
apple-to-apples comparison, I have also provided the average unadjusted Ordinary Least
Squares beta for Mr. D'Ascendis' proxy groups of 0.76 (average of electric and gas).
As shown above, every decile measured by Kroll has a much higher beta than Mr.
D'Ascendis' utility group. The typical company in each decile is much riskier than the
typical utility company. Because of this significant disparity in risk, as measured by
beta, Mr. D'Ascendis size adjustment produces a CAPM return estimate that does not
produce a risk appropriate return for KU and LGE and, therefore, should be rejected.

INVESTMENT RISK FOR A COMPANY AND, THEREFORE, PRODUCES AN APPROPRIATE RISK-ADJUSTED RETURN FOR A SUBJECT COMPANY? Yes. Beta represents a measure of systematic or non-diversifiable, market-related risk. All subject companies' betas are measured relative to that of the overall market and adjusted upward by Value Line. The market beta is considered to be 1.0. For companies that have betas greater than 1, they are regarded as having more risk than the overall market. For companies that have betas less than 1, they are regarded to have risk less than the overall market.

Q

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1	For these reasons, utility companies, which consistently and predictably have
2	adjusted betas far less than 1 (usually in the range of 0.60 to 0.80 depending on market
3	conditions), are generally reflective of lower risk investment options.

IV.B. D'Ascendis' Proposed Credit Risk Adjustment

- 5 Q SHOULD MR. D'ASCENDIS' PROPOSED -7 BASIS POINT RETURN ON
- 6 EQUITY ADDER FOR CREDIT RISK BE INCLUDED IN KU/LGE RETURN
- 7 **ON EQUITY?**

4

No, it should not. Mr. D'Ascendis proposed a downward adjustment of 7 basis points for his electric group only to reflect the higher credit rating of the proxy group relative to KU and LGE electric operations. As stated above, the proxy group average credit ratings of BBB+ from S&P and Baa2 from Moody's are lower but comparable to KU and LGE's credit ratings of A- from S&P and A3 from Moody's. The proxy group are a reasonable risk proxy to KU and LGE and this external adjustment to the estimated market cost of equity is not justified and should be rejected.

15 IV.C. D'Ascendis' Proposed Flotation Cost Adjustment

- 16 Q PLEASE DESCRIBE MR. D'ASCENDIS' PROPOSED FLOTATION COST
- 17 **ADJUSTMENT TO KU/LGE'S RETURN ON EQUITY.**
- 18 A Mr. D'Ascendis estimates a flotation cost adjustment by modifying the DCF model to
 19 account for the flotation costs since 2010. Specifically, Mr. D'Ascendis estimates that

⁴⁴D'Ascendis Direct Testimony at 57-58.

the issuance of common equity netted in total flotation costs of around \$229.2 million. He estimates that this accounted for approximately 3.81% of the total gross proceeds in those stock sales. He then approximated a 15 basis point return on equity adjustment by reducing the stock price in the DCF formula by a factor of 1 minus this flotation cost adder of 3.81%. This resulted in a DCF return of 10.47% accounting for flotation costs, compared to 10.32% when flotation costs are not accounted for.⁴⁵

IS MR. D'ASCENDIS' 15 BASIS POINT FLOTATION COST ADJUSTMENT

REASONABLE?

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Α

No. The adder is not based on the recovery of prudent and verifiable actual flotation costs incurred by KU/LGE. As shown on his Exhibit DWD-10, Mr. D'Ascendis derives a flotation cost adder based on the equity issuances made by KU and LGE's parent company, PPL Corp. Because he does not show that his adjustment is based on the utilities' actual and verifiable flotation expenses, there are no means of verifying whether Mr. D'Ascendis' proposal reflects reasonable and prudent costs. Mr. D'Ascendis' flotation cost return on equity adder is not based on known and measurable costs. Therefore, this flotation cost return on equity adder is unreasonable and should be denied.

⁴⁵*Id.*, D'Ascendis Direct Testimony at 58-61, Exhibit DWD-10.

IV.D. D'Ascendis' DCF

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2 Q PLEASE DESCRIBE MR. D'ASCENDIS' DCF ANALYSIS.

3 A Mr. D'Ascendis performed a constant growth DCF analysis on his proxy group. He 4 relied on analysts' earnings growth rate projections from Value Line, Zack's, and S&P 5 Capital IQ. The average growth rates for his gas and electric proxy groups are 6.50% 6 and 6.42%, respectively. (Exhibit DWD-3, page 1). He used an annualized dividend and a 60-day average stock price to calculate the proxy groups' dividend yield. The 7 mean and median results of his gas DCF analysis are 10.27% and 10.31%, respectively, 9 with an average gas DCF return of 10.29%. The mean and median results of his electric 10 DCF analysis are 10.33% and 10.30%, respectively, with an average electric DCF return of 10.32%.

12 Q DO YOU HAVE ANY COMMENTS CONCERNING MR. D'ASCENDIS' DCF

RETURN ESTIMATES?

Yes. Similar to my DCF model, his proxy groups' average DCF returns are based on a growth rate around 6.40%, which is higher than the consensus economists' projected growth rate for the economy (4.10%). This growth rate is excessive and cannot reasonably be expected to last into perpetuity, the time period which is assumed by the constant growth DCF model. As I discussed in detail above, company growth rates that exceed the growth rate of GDP in the economy in which a company provides goods and services cannot be sustained. I also discussed how over time, even with extended capital

1	investment, growt	h rates will slow.	Therefore, i	it is necessary	to consider a r	nulti-stage
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2 DCF model, which reflects a sustainable growth rate.

3 Q IS THERE A WAY TO CORRECT MR. D'ASCENDIS' DCF MODEL TO

PRODUCE A REASONABLE DCF RETURN?

discussed in regard to my own studies.

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Yes. In Column 2 in Table 11 above and my Exhibit MPG-19, using Mr. D'Ascendis'
data, I present the results of a multi-stage DCF model that is similar to my multi-stage
model which reflects a reasonable long-term sustainable growth rate of 4.10%, as

As shown on my Exhibit MPG-19, the average and median DCF returns for the gas proxy group are 8.50% and 8.42%, respectively. The average and median DCF results for the electric proxy group are 8.69% and 8.57%, respectively. Therefore, considering both the multi-stage DCF and Mr. D'Ascendis' constant growth DCF results, the gas DCF return falls in the range of 8.42% to 10.29%. The electric multi-stage and constant growth DCF produced by Mr. D'Ascendis result in a DCF in the range of 8.57% to 10.32%. Therefore, a reasonable DCF return, applying both Mr. D'Ascendis' DCF model and a multi-stage DCF model, is about 9.40%.

IV.E. D'Ascendis' Risk Premium

18 Q PLEASE DESCRIBE MR. D'ASCENDIS' RISK PREMIUM ANALYSIS.

19 A Mr. D'Ascendis estimated a gas risk premium return based on the results of a PRPMTM
20 risk premium (10.86%) and a projected utility bond risk premium (10.81%). Similarly,

1	he estimated an electric risk premium return based on the results of a PRPM TM risk
2	premium (10.79%) and a projected utility bond risk premium (10.74%). (Exhibit DWD-
3	4, page 1).

4 Q DO YOU HAVE ANY COMMENTS CONCERNING MR. D'ASCENDIS'

PRPMTM RISK PREMIUM STUDY.

Α

Even though the results produced by PRPMTM risk premium and his projected utility risk premium are almost identical, Mr. D'Ascendis' PRPMTM should be disregarded for the following reasons. Mr. D'Ascendis' PRPMTM risk premium measures the volatility of annual return based on a time-varying comparison of the volatility of a stock index "total" return, compared to the volatility of a Treasury Bond "income" return, or yield. Mr. D'Ascendis claims that this methodology is consistent with the autoregressive conditional heteroscedasticity ("ARCH") methodology published by Robert F. Engle in the *Journal of Regulatory Economics*. However, he has not demonstrated that his proposed comparison between the annual volatility on the total returns of equities and the annual volatility of Treasury bond yields produces an accurate historical database in order to draw projections of return volatility going forward.

More importantly, Mr. D'Ascendis' methodology is based on a mismatch of total returns for stocks (i.e., including capital gains and losses plus dividend income), compared to a return on bond yield investments only. Therefore, his ARCH methodology does not capture volatility of bond returns comparably to stock returns.

His	returns	are not	directly	comparable	because	he	should	have	used	total	returns	for
bot	h stock a	and bone	d investn	nents.								

To explain, a significant component of return volatility on both stocks and bonds are created by capital gains and losses (i.e., changes in the prices of the stocks or bonds). Without recognizing capital gains and losses, stock return volatility and bond return volatility would be muted significantly. This is a significant distinction because Mr. D'Ascendis reflects the increased return volatility for stocks based on capital gains and losses but ignores this significant investment return component for bond yields. Therefore, Mr. D'Ascendis has not accurately measured the level of the risk premium, nor has he accurately characterized the volatility across time caused by market factors. Importantly, both stock and bond returns will be impacted by the capital gains and losses created by market factors that influence stock prices and bond prices. By including capital gains for stocks, but not bonds, Mr. D'Ascendis has significantly understated the return volatility of investing in bonds and inflated the equity risk premium. This methodology simply is not balanced and does not reflect an accurate measurement of a market risk premium.

17 Q HAS THE COMMISSION COMMENTED ON THE RELIABILITY AND 18 REASONABLENESS OF MR. D'ASCENDIS' PRPMTM?

Yes. This methodology is not generally used in regulatory proceedings. Specifically, the Kentucky Public Service Commission recently rejected the PRPMTM analysis despite the model being published. The Kentucky Commission stated that it does not

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accept the methodology and noted	that it is not	aware of other	commissions	that have
found acceptance of the model. ⁴⁶				

Similarly, as noted on page 30 of Mr. D'Ascendis' direct testimony, the PRPMTM analysis was again rejected by the Commission in Case No. 2022-00432 concerning Bluegrass Water Utility Operating Company L.L.C.

Therefore, the Commission should disregard Mr. D'Ascendis' $PRPM^{TM}$ analysis.

8 Q PLEASE DESCRIBE MR. D'ASCENDIS' UTILITY RISK PREMIUM STUDY.

Mr. D'Ascendis' utility risk premium model is based on a projected utility bond yield of 5.80% (gas) and 5.86% (electric) and an average equity risk premium of 5.01% (gas) and 4.88% (electric). The projected electric utility yield has been adjusted to account for the risk differential between an A-rated utility bond yield and the proxy group credit rating. (Exhibit DWD-4, page 3).

The gas (electric) 5.06% (4.93%) risk premium used by Mr. D'Ascendis is the result of three separate risk premium study results of 5.68% (5.25%), 4.76% and 4.73% (5.77%), respectively. The first gas (electric) risk premium result of 5.68% (5.25%) was developed on page 6 of Exhibit DWD-4. This risk premium was based on five estimates of equity risk premiums: three based on the Kroll data, including an equity risk premium of 6.10%; a regression risk premium of 6.72%; and his PRPMTM risk premium of 7.32%, as well as an equity risk premium estimated based on *Value Line*

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⁴⁶Atmos Energy Corporation before the Commonwealth of Kentucky Public Service Commission, Case No. 2021-00214, Final Order at pages 47 and 48.

1		Summary and Index Data of 5.85%; and an S&P 500 DCF derived equity risk premium
2		using Value Line, Bloomberg and S&P Capital IQ data of 9.88%. The average of these
3		four risk premium estimates of 7.16% (excluding the PRPM TM) was then adjusted by
4		his proxy group average gas (electric) beta of 0.79 (0.73), to produce a risk premium
5		estimate of 5.66% (5.23%).
6		The second risk premium of 4.65% is based on a historical equity risk premium
7		of the S&P Utility Index of 4.16%, averaged with Mr. D'Ascendis' regression risk
8		premium 4.80%, PRPM™ risk premium of 5.07%, and a forecasted equity risk premium
9		of the total returns of the S&P Utility Index from Value Line, Bloomberg and S&P
10		Capital IQ of 5.00%. The average of these three risk premiums is 4.65% (excluding the
11		PRPM TM) as shown on page 9 of Exhibit DWD-4.
12		The third gas (electric) risk premium of 4.73% (4.77%) is based on a regression
13		analysis of 848 (gas) and 1,257(electric) fully litigated rate cases for the period 1980 to
14		January 2025.
15	Q	DO YOU HAVE ANY COMMENTS CONCERNING MR. D'ASCENDIS'
16		UTILITY RISK PREMIUM?
17	A	Yes. This gas (electric) risk premium of 10.81% (10.79%) was based on a projected
18		prospective bond yield of 5.80% (5.86%) and an equity risk premium of 5.01% (4.88%),
19		respectively.
20		Mr. D'Ascendis' utility gas (electric) risk premium of 5.01% (4.88%) was based
21		on an overly simplistic regression analysis. His regression model assumed that there is

a simplistic inverse relationship between equity risk premiums and interest rates. This assumption ignores changes in the risk premiums that relate to other market factors which create differences in investment risk between stock and bond investments. Academic studies are clear that interest rates are a relevant factor in assessing current market equity risk premiums, but risk premiums tie more specifically to the market's perception of investment risk of debt and equity securities, and not simply changes in interest rates.

More specifically, while academic studies have shown that, in the past, there has been an inverse relationship among these variables, researchers have found that the relationship changes over time and is influenced by changes in perception of the risk of bond investments relative to equity investments, and not simply changes to interest rates.⁴⁷

In the 1980s, equity risk premiums were inversely related to interest rates, but that was likely attributable to the interest rate volatility that existed at that time. As such, when interest rates were more volatile, perceptions of bond investment risk increased relative to the investment risk of equities. This changing investment risk perception caused changes in equity risk premiums.

In today's marketplace, interest rate volatility is not as extreme as it was during the 1980s.⁴⁸ Nevertheless, changes in the perceived risk of bond investments relative

⁴⁷Robert S. Harris & Felicia C. Marston, "The Market Risk Premium: "Expectational Estimates Using Analysts' Forecasts," *Journal of Applied Finance*, Volume 11, No. 1, 2001 at 10-13; Eugene F. Brigham, Dilip K. Shome, & Steve R. Vinson, "The Risk Premium Approach to Measuring a Utility's Cost of Equity," *Financial Management*, Spring 1985, at 42-43.

⁴⁸"The Risk Premium Approach to Measuring a Utility's Cost of Equity," *Financial Management*, Spring 1985, at 44.

to equity investments still drive changes in equity premiums and cannot be measured							
simply by observing nominal interest rates. Changes in nominal interest rates are							
heavily influenced by changes to inflation outlooks, which also change equity return							
expectations. As such, the relevant factor needed to explain changes in equity risk							
premiums is the relative changes between the risk of equity versus debt investments,							
and not simply changes in interest rates.							

Importantly, Mr. D'Ascendis' analysis simply ignores investment risk differentials. He bases his adjustment to the equity risk premium exclusively on changes in nominal interest rates. This is a flawed methodology that does not produce accurate or reliable risk premium estimates.

DO YOU BELIEVE THAT THE REGRESSION STUDY USED BY MR. D'ASCENDIS IN HIS RISK PREMIUM ANALYSIS DEMONSTRATES AN ACCURATE CAUSE AND EFFECT BETWEEN INTEREST RATES AND EQUITY RISK PREMIUMS?

No. Because the returns on equity he uses are authorized by commissions, those returns on equity are not directly adjusted by market forces. Rather, authorized equity returns are adjusted by commission policy and regulatory practices. In contrast, bond interest rates or bond yields are controlled entirely by market forces.

Equity risk premiums can move based on changes in market conditions that can impact both equity returns and bond returns in a like manner. This simple regression

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- analysis of equity risk premiums and interest rates ignores these relevant market factors
 in describing the current market-required equity risk premium.
- 3 Q DO YOU HAVE ANY FURTHER ISSUES WITH MR. D'ASCENDIS' RISK
- 4 **PREMIUM MODEL?**
- Yes. Mr. D'Ascendis' equity risk premium of 5.66% (gas) and 5.23% (electric) is based on DCF-derived total return of 15.23% from *Value Line*, Bloomberg and S&P Capital IQ, which consist of an average dividend yield of 2.08% and growth rate of 13.16%. As discussed in more detail below in regard to Mr. D'Ascendis' CAPM studies, and in regard to my own DCF studies, a growth rate of 13.16% significantly exceeds the average consensus analyst growth rate of the U.S. economy of 4.1% and produces unreliable results.
- 12 Q CAN MR. D'ASCENDIS' RISK PREMIUM MODELS BE USED TO ESTIMATE
- 13 A FAIR RETURN FOR KU/LGE?
- Only generally. As discussed in regard to my own risk premium analysis, the current Baa and A utility yields to Treasury spreads have significantly declined, which supports a below average equity risk premium. The observable evidence shows that current equity risk premiums are very low in relation to bond risk premiums. A risk premium for the current market is about 3.90%, which is about 90% of the historical utility risk premium (4.33% x 0.90). This risk premium, combined with an updated A-rated utility

⁴⁹ Exhibit DWD-4, page 6, Note 5 and Exhibit DWD-5, Page 3, Note 1.

- bond yield of 5.96%, produces a risk premium return of approximately 9.86% (3.90%)
- plus 5.96%) for KU and LGE.

IV.F. D'Ascendis' CAPM

4 O HOW DID MR. D'ASCENDIS DERIVE HIS CAPM RETURN ESTIMATE FOR

5 **KU and LGE?**

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- 6 A Mr. D'Ascendis developed his CAPM return estimate on his Exhibit DWD-5. As shown
- on that schedule, he relied on a market risk premium of 8.14%, a risk-free rate of 4.55%,
- 8 on proxy group betas of 0.79 for his gas proxy group, and 0.73 for his electric proxy
- group, which was the average of the mean and median beta published by Bloomberg
- and Value Line. Using these parameters, Mr. D'Ascendis produces a CAPM return of
- 10.96% for his gas proxy group and 10.47% for his electric proxy group.

12 Q DO YOU HAVE ANY ISSUES WITH MR. D'ASCENDIS' CAPM STUDY?

- 13 A I disagree with several aspects of his methodology. First, his market risk premium of
- 8.15% is excessive and unreliable due to the unsustainable growth rates he used to
- develop a market return. Second, his market risk premium estimates suffer from many
- of the same previously described flaws surrounding his equity risk premium estimates
- such as his reliance on the unproven PRPMTM methodology.

1	Q	WHY DO YOU BELIEVE MR. D'ASCENDIS' MARKET RISK PREMIUM IS						
2		EXCESSIVE AND UNRELIABLE?						
3	A	Mr. D'Ascendis averages 4 market risk premium estimates to develop his recommende						
4		market risk premium of 8.14% (excluding the PRPM TM methodology).						
5		His first market risk premium estimate is based on historical Kroll data. With						
6		this methodology, he estimates a market risk premium of 7.31%. His second market						
7		risk premium is based on a regression analysis and produced a risk premium of 7.94%						
8		His third market risk premium is based on the application of his PRPM™ method using						
9		historical Ibbotson data. This method produces a market risk premium of 8.18%.						
10		His fourth market risk premium is based on a Value Line 3-5 year projected						
11		market return of 11.20% less his risk-free rate of 4.55% to derive an expected market						
12	risk premium on the Value Line index of 6.65%.							
13	His fifth market risk premium is based on a Value Line, Bloomberg and S&P							
14	Capital IQ projected return on the S&P 500 of 15.23%, which produced a risk premium							
15		of 10.68% after his risk-free rate of 4.55% is subtracted.						
16		The average of these 4 market risk premiums is 8.14% (excluding the PRPMTM						
17		method). (Exhibit DWD-5, page 3).						

Q	ARE THE RESULTS OF MR. D'ASCENDIS' CAPM ESTIMATE					
	REASONABLE?					
A	No. His market risk premium estimates based on the Value Line, Bloomberg and S&P					
	Capital IQ (fifth) projected returns on the market are significantly overstated and not					
	reasonable.					
Q	PLEASE EXPLAIN WHY MR. D'ASCENDIS' VALUE LINE, BLOOMBERG					
	AND S&P CAPITAL IQ MARKET RISK PREMIUMS ARE NOT					
	REASONABLE.					
A	Mr. D'Ascendis' Value Line, Bloomberg and S&P Capital IQ DCF-derived market risk					
	premium is based on inflated market returns of 15.23%, which are based on growth					
	rates of 13.16% and market dividend yields of 2.08%.					
As discussed above, the DCF model requires a long-term sustainable growth						
	rate. Mr. D'Ascendis' sustainable market growth rates of 13.16% are far too high to be					
a rational outlook for sustainable long-term market growth. These growth rates are more						
	than three times higher than the consensus analysts' projected long-term growth of the					
	U.S. GDP of 4.10%.					
	As a result of his inflated long-term market growth rate, Mr. D'Ascendis'					
	projected market returns are likewise inflated and not reliable. Mr. D'Ascendis' Value					
	Line, Bloomberg and S&P Capital IQ risk premiums of 10.68% should be given no					
	A Q					

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weight in estimating a fair return for KU and LGE in this case.

Q DO HISTORICAL ACTUAL RETURNS ON THE MARKET SUPPORT MR.

D'ASCENDIS' PROJECTED MARKET RETURNS?

No. Mr. D'Ascendis relies on historical market returns data to develop one of his market risk premiums. The market risk premium he developed using historical data is 7.31% percent, or about 300 basis points less than his projected market returns based on *Value Line*, Bloomberg and S&P Capital IQ market returns. This historical data shows just how unreasonable Mr. D'Ascendis' projected returns on the market are going forward.

Applying Kroll's methodology and using updated data from Morningstar Direct, the actual capital appreciation for the S&P 500 over the period 1926 through 2023 has been 6.2% to 8.1%.⁵⁰ This contrasts sharply to Mr. D'Ascendis's own projected growth rate of the market of 13.16%.

Further, historically, the geometric growth of the market of 6.2%⁵¹ has reflected the geometric growth of the GDP over this same time period of approximately 6.1%.⁵²

Notably, this review of historical data establishes two facts. First, historical, actual achieved growth has been substantially less than the one projected by Mr. D'Ascendis. Second, historical growth of the market has tracked historical growth of the U.S. GDP. Projected growth of the U.S. GDP is now closer to the 4.0% to 4.5% range. All this information strongly supports the conclusion that Mr. D'Ascendis' projected growth rate on the market of 13.16% is substantially overstated. While I do not endorse the use of a historical growth rate to draw assessments of the market's

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⁵⁰Kroll, 2023 SBBI Yearbook at 137 and Morningstar Direct.

 $^{^{51}}Id$

⁵²U.S. Bureau of Economic Analysis, March 27, 2025.

- forward-looking growth rate outlooks, this data can be used as a check of Mr.
- 2 D'Ascendis' market return estimate and to show how unreasonable and inflated it is.

3 Q CAN MR. D'ASCENDIS' CAPM ANALYSIS BE REVISED TO REFLECT A

4 MORE REASONABLE MARKET RISK PREMIUM AND RECENT

5 **RISK-FREE RATES?**

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- 6 A Yes. Relying on Mr. D'Ascendis' risk-free rate of 4.55%, on the gas and electric proxy
- groups beta of 0.79 and 0.73, and my forward-looking market return of 11.42% as
- 8 described regarding my own CAPM study, produces a gas and electric return on equity
- 9 in the range of 9.60% to 10.00% for the proxy groups.⁵³

IV.G. D'Ascendis' Empirical CAPM ("ECAPM")

11 Q PLEASE DESCRIBE MR. D'ASCENDIS' ECAPM ANALYSIS.

Mr. D'Ascendis applies the same beta, market risk premium and risk-free rate for his 12 A 13 ECAPM. He relies on empirical tests of the traditional CAPM model to modify to 14 correct the original CAPM for some deficiencies inherent in the model. Empirical tests 15 show that the expected return line, or security market line, predicted by the CAPM is not as steep as the model would have us believe. In other words, the traditional CAPM 16 understates the expected return for securities with betas less than 1 and overstates the 17 18 expected return for securities with betas greater than 1. In order to correct for this 19 empirical finding, Mr. D'Ascendis modifies the traditional CAPM model as follows:

 $^{^{53}4.55\% + 0.73 \}text{ x } (11.42\% - 4.55\%) = 9.57\%$, rounded to 9.60%, 4.55% + 0.79 x (11.42% - 4.55%) = 9.99%, rounded to 10.00%.

1	$R_i = R_f + 0.75 \times B_i \times (R_m - R_f) + 0.25 \times B_m \times (R_m - R_f)$
2	R_i = Required return for stock i
3	R_f = Risk-free rate
4	R_m = Expected return for the market portfolio
5	B_m = Beta (measure of market volatility)
6	B_i = Beta (measure of stock price volatility).

7 Q WHAT ISSUES DO YOU TAKE WITH MR. D'ASCENDIS' ECAPM

ANALYSIS?

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The major issue I have with Mr. D'Ascendis' ECAPM analysis is his use of an adjusted beta as published by *Value Line*. The impact of Mr. D'Ascendis' ECAPM adjustment is to increase his average electric and gas beta estimates from 0.76 to 0.82.⁵⁴ The weighting adjustments applied in the ECAPM are mathematically the same as adjusting beta since the inputs are all multiplicative, as shown in the formula above.

In other words, Mr. D'Ascendis' adjustment to the betas is duplicative of the adjustments the ECAPM already makes to correct for any shortcomings of the traditional CAPM. As a result, his model produces overstated results.

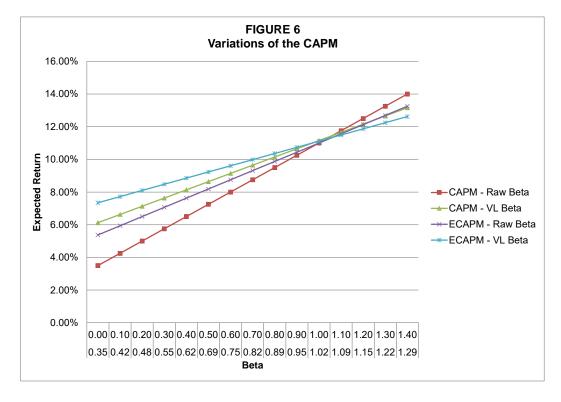
Further, Mr. D'Ascendis' reliance on an adjusted *Value Line* beta in his ECAPM study is inconsistent with the academic research that I am aware of supporting the development of the ECAPM.⁵⁵ The end result of using adjusted betas in the ECAPM is essentially an expected return line that has been flattened by two adjustments. In other words, the vertical intercept has been raised twice and the security market line has been

 $^{5475\% \}times 0.76 + 25\% \times 1 = 0.82$.

⁵⁵See Black, Fischer, "Beta and Return," *The Journal of Portfolio Management*, Fall 1993, 8-18; and Black, Fischer, Michael C. Jensen and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," 1972.

flattened twice: once through the adjustments *Value Line* made to the raw beta, and again by weighting the risk-adjusted market risk premium, as Mr. D'Ascendis has done. In addition to the many adjustments employed by Mr. D'Ascendis, he further increases the intercept and flattens the security market line by using projected long-term Treasury yields that are at odds with current market expectations and inconsistent with the Federal Reserve's projections and monetary policy.

Mr. D'Ascendis goes over the theory of the ECAPM at pages 38-39 of his direct testimony. The ECAPM with adjusted betas has the effect of increasing CAPM return estimates for companies with betas less than 1 and decreasing the CAPM return estimates for companies with betas greater than 1. I have modeled the expected return line resulting from the application of the various forms of the CAPM/ECAPM below in Figure 6.



Along the horizontal axis in Figure 6 above, I have provided the raw unadjusted
beta (top row) and the corresponding adjusted Value Line beta (bottom row). As shown
in Figure 6 above, the CAPM, using a Value Line beta compared to the CAPM using an
unadjusted beta, shows that the Value Line beta raises the intercept point and flattens
the slope of the security market line. As shown in the figure above, the two variations
with the most similar slope are the CAPM with the Value Line beta and the ECAPM
with a raw beta. This evidence shows that the ECAPM adjustment has a very similar
impact on the expected return line as a Value Line beta. Another observation that can
be made from the figure above is the magnifying effect that the ECAPM using a Value
Line beta has on raising the vertical intercept and flattening the slope relative to all other
variations. It is unreasonable to use an adjusted beta within an ECAPM because it
unjustifiably alters the security market line and materially inflates a CAPM return for a
company with a beta less than 1.
IN YOUR EXPERIENCE, IS MR. D'ASCENDIS' PROPOSED USE OF AN
IN YOUR EXPERIENCE, IS MR. D'ASCENDIS' PROPOSED USE OF AN ADJUSTED BETA IN AN ECAPM STUDY CONSISTENT WITH WIDELY
ADJUSTED BETA IN AN ECAPM STUDY CONSISTENT WITH WIDELY
ADJUSTED BETA IN AN ECAPM STUDY CONSISTENT WITH WIDELY ACCEPTED PRACTICES IN THE REGULATORY FIELD?
ADJUSTED BETA IN AN ECAPM STUDY CONSISTENT WITH WIDELY ACCEPTED PRACTICES IN THE REGULATORY FIELD? No. In my experience, regulatory commissions generally disregard the use of the
ADJUSTED BETA IN AN ECAPM STUDY CONSISTENT WITH WIDELY ACCEPTED PRACTICES IN THE REGULATORY FIELD? No. In my experience, regulatory commissions generally disregard the use of the ECAPM, particularly when an adjusted beta is used in the model. For example, the

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The Commission cannot recall a proceeding in which it relied upon the ECAPM in establishing the cost of common equity for a utility. In the

1	instant proceeding, the record supports a finding that use of adjusted
2	betas in the ECAPM is inappropriate. As Staff witness Ms. Freetly
3	explained, by using adjusted betas he already effectively transformed his
4	Traditional CAPM into an ECAPM. Therefore, including an additional
5	beta adjustment in the ECAPM model would result in inflated estimates
6	of the samples' cost of common equity. ⁵⁶
7	Similarly, in a more recent Nicor Gas rate case the ICC stated:
8	The Company also used ECAPM analyses and bond yield plus risk
9	premium models to determine an ROE [Return on Equity], which the
10	Commission has also historically rejected. ⁵⁷
11	The California Public Utilities Commission has even more recently noted:
12	PG&E's and PG&E's CAPM results are significantly higher than the
13	intervenors because these utilities use the Empirical CAPM model,
14	rather than the traditional CAPM. Notably, the Commission has
15	recognized that the ECAPM tends to produce inaccurately higher ROEs
16	and has declined to rely on ECAPM results in prior Cost of Capital
17	proceedings. ⁵¹
18	We are not persuaded that ECAPM produces a result that should be
19	considered. Electric utilities in general have low betas. Adjusting betas
20	upward guarantees a higher ROE. ⁵⁸
21	Therefore, the Commission should reject Mr. D'Ascendis' ECAPM, which as
22	described above is based on adjusted beta estimates.

⁵⁶Illinois Commerce Commission, Docket No. 11-0767, Illinois-American Water Company, Order at 109, September 19, 2012.

 ⁵⁷Illinois Commerce Commission, Docket No. 21-0098, Northern Illinois Gas Company d/b/a Nicor Gas Company, Final Order at 94, November 18, 2021.
 58 Public Utilities Commission of the State of California Application 22-04-008 et al., Decision

⁵⁸ Public Utilities Commission of the State of California Application 22-04-008 et al., Decision Addressing Test Year 2023 Cost Of Capital For Pacific Gas And Electric Company, Southern California Edison, Southern California Gas Company, And San Diego Gas & Electric Company, December 19, 2022 at 23.

IV.H. D'Ascendis' Non-Regulated Company Analysis

- 2 Q PLEASE DESCRIBE MR. D'ASCENDIS' NON-PRICE REGULATED
 3 COMPANIES' EARNED RETURN ON EQUITY METHODOLOGY.
- A Mr. D'Ascendis' non-price regulated return on equity estimates are based on the results from the same cost of equity studies described above, using a proxy group of 49 companies that have comparable risk to his gas group and another non-price regulated group of 47 companies with comparable risk to his electric proxy group. The average result of his mean and median market-based studies on his gas and electric non-price
- 9 regulated companies are 11.92% and 11.84%, respectively.⁵⁹
- 10 Q ARE MR. D'ASCENDIS' NON-PRICE REGULATED RISK PROXY GROUPS
- 11 REASONABLE TO ESTIMATE THE CURRENT RETURN ON EQUITY FOR
- 12 **KU AND LGE?**

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13 No. Mr. D'Ascendis has not proven that these companies are risk-comparable to 14 KU/LGE. While these companies may have comparable beta estimates, he has not 15 shown that they face comparable business and operating risk. For example, Mr. D'Ascendis' non-price regulated proxy group includes companies that are not 16 17 comparable in business and operating risk to regulated utilities. To draw a valid comparison between KU/LGE and any proxy group, it is necessary to show that these 18 19 companies have comparable risk factors that are commonly used by investment 20 professionals to compare investment risk between different investment alternatives.

⁵⁹ D'Ascendis Direct Testimony at 46.

Because he has not shown that these companies are indeed risk comparable to KU/LGE,
his estimated return on this proxy group is not reliable and should be disregarded.

Further, the RP and CAPM estimates on Mr. D'Ascendis' non-utility proxy group were flawed and biased for the same reasons described above concerning his gas and electric proxy groups. As such, his return on equity estimates based on his non-utility proxy group do not reflect a reasonable risk proxy for KU/LGE and are based on flawed applications of the market-based models. Therefore, the Commission should reject the use of Mr. D'Ascendis' non-price regulated proxy group.

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

10 A Yes, it does.

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COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF ELECTRONIC APPLICATION OF KENTUCKY UTILITIES COMPANY FOR AN ADJUSTMENT OF ITS ELECTRIC RATES, AND APPROVAL OF CERTAIN REGULATORY AND ACCOUNTING TREATMENTS)	Case No. 2025-0011
IN THE MATTER OF ELECTRONIC APPLICATION OF LOUISVILLE GAS AND ELECTRIC COMPANY FOR AN ADJUSTMENT OF ITS ELECTRIC AND GAS RATES, AND APPROVAL OF	Case No. 2025-0011
CERTAIN REGULATORY AND ACCOUNTING TREATMENTS)	
ATE OF MISSOURI) OUNTY OF ST. LOUIS)	

VERIFICATION OF MICHAEL P. GORMAN

Michael P. Gorman, being first duly sworn, on his oath states:

- 1. My name is Michael P. Gorman. I am a Managing Principal with Brubaker & Associates, Inc., 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017. We have been retained by the United States Department of Defense and all other Federal Executive Agencies to testify in this proceeding on their behalf.
- 2. Attached hereto and made a part hereof for all purposes are my Direct Testimony and Exhibits, which were prepared in written form for introduction into evidence in the Commonwealth of Kentucky before the Public Service Commission, Kentucky Utilities Co. and Louisville G&E Docket Nos. 2025-00113 & 2025-00114.
- 3. I hereby swear and affirm that the testimony and exhibits are true and correct to the best of my information, knowledge, and belief, and that they show the matters and things that they purport to show.

Michael P. Gorman

Subscribed and sworn to before me this 29th day of August, 2025.

TAMMY S. KLOSSNER
Notary Public - Notary Seal
STATE OF MISSOURI
St. Charles County
My Commission Expires: Mar. 18, 2027
Commission # 15024862

Tammy & Klossner
Notary Public

Qualifications of Michael P. Gorman

- 2 A Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140,
- 3 Chesterfield, MO 63017.

4 Q PLEASE STATE YOUR OCCUPATION.

- 5 A I am a consultant in the field of public utility regulation and a Managing Principal with
- 6 the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory
- 7 consultants.

8 Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND WORK

9 **EXPERIENCE.**

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In 1983 I received a Bachelor of Science Degree in Electrical Engineering from
Southern Illinois University, and in 1986, I received a Master's Degree in Business
Administration with a concentration in Finance from the University of Illinois at
Springfield. I have also completed several graduate level economics courses.

In August of 1983, I accepted an analyst position with the Illinois Commerce Commission ("ICC"). In this position, I performed a variety of analyses for both formal and informal investigations before the ICC, including: marginal cost of energy, central dispatch, avoided cost of energy, annual system production costs, and working capital. In October of 1986, I was promoted to the position of Senior Analyst. In this position, I assumed the additional responsibilities of technical leader on projects, and my areas

of responsibility were expanded to include utility financial modeling and financial analyses.

In 1987, I was promoted to Director of the Financial Analysis Department. In this position, I was responsible for all financial analyses conducted by the Staff. Among other things, I conducted analyses and sponsored testimony before the ICC on rate of return, financial integrity, financial modeling and related issues. I also supervised the development of all Staff analyses and testimony on these same issues. In addition, I supervised the Staff's review and recommendations to the Commission concerning utility plans to issue debt and equity securities.

In August of 1989, I accepted a position with Merrill-Lynch as a financial consultant. After receiving all required securities licenses, I worked with individual investors and small businesses in evaluating and selecting investments suitable to their requirements.

In September of 1990, I accepted a position with Drazen-Brubaker & Associates, Inc. ("DBA"). In April 1995, the firm of Brubaker & Associates, Inc. was formed. It includes most of the former DBA principals and Staff. Since 1990, I have performed various analyses and sponsored testimony on cost of capital, cost/benefits of utility mergers and acquisitions, utility reorganizations, level of operating expenses and rate base, cost of service studies, and analyses relating to industrial jobs and economic development. I also participated in a study used to revise the financial policy for the municipal utility in Kansas City, Kansas.

At BAI, I also have extensive experience working with large energy users to distribute and critically evaluate responses to requests for proposals ("RFPs") for electric, steam, and gas energy supply from competitive energy suppliers. These analyses include the evaluation of gas supply and delivery charges, cogeneration and/or combined cycle unit feasibility studies, and the evaluation of third-party asset/supply management agreements. I have participated in rate cases on rate design and class cost of service for electric, natural gas, water and wastewater utilities. I have also analyzed commodity pricing indices and forward pricing methods for third party supply agreements and have also conducted regional electric market price forecasts.

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In addition to our main office in St. Louis, the firm also has branch offices in Corpus Christi, Texas; Louisville, Kentucky and Phoenix, Arizona.

HAVE YOU EVER TESTIFIED BEFORE A REGULATORY BODY?

Yes. I have sponsored testimony on cost of capital, revenue requirements, cost of service and other issues before the Federal Energy Regulatory Commission and numerous state regulatory commissions including: Alaska, Arkansas, Arizona, California, Colorado, Delaware, the District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, and before the provincial regulatory

boards in Alberta, Nova Scotia, and Quebec, Canada. I have also sponsored testimony before the Board of Public Utilities in Kansas City, Kansas; presented rate KU/LGE position reports to the regulatory board of the municipal utility in Austin, Texas, and Salt River Project, Arizona, on behalf of industrial customers; and negotiated rate disputes for industrial customers of the Municipal Electric Authority of Georgia in the LaGrange, Georgia district.

7 Q PLEASE DESCRIBE ANY PROFESSIONAL REGISTRATIONS OR 8 ORGANIZATIONS TO WHICH YOU BELONG.

I earned the designation of Chartered Financial Analyst ("CFA") from the CFA Institute. The CFA charter was awarded after successfully completing three examinations which covered the subject areas of financial accounting, economics, fixed income and equity valuation and professional and ethical conduct. I am a member of the CFA Institute's Financial Analyst Society.

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Kentucky Utilities Company / Louisville Gas & Electric Company

Rate of Return (December 31, 2026)

Kentucky Utilities Company

Line	Description	Amount (1)	Weight (2)	<u>Cost</u> (3)	Weighted Cost (4)
1	Short-Term Debt	\$ 157,536,900	2.55%	4.46%	0.11%
2	Long-Term Debt	\$ 2,759,039,499	44.60%	4.93%	2.20%
3	Common Equity	\$3,270,164,828	<u>52.86%</u>	9.50%	5.02%
4	Total	\$ 6,186,741,227	100.01%		7.33%

Louisville Gas & Electric Company

<u>Line</u>	<u>Description</u>		Amount (1)	<u>Weig</u> (2)		<u>Cost</u> (3)	Weighted Cost (4)
			(1)	(-)		(0)	(4)
1	Short-Term Debt	\$	88,225,863	1.71	%	4.46%	0.08%
2	Long-Term Debt	\$2,	333,327,528	45.36	6%	4.95%	2.25%
3	Common Equity	<u>\$2</u> ,	722,898,938	52.93	<u>3%</u>	9.50%	<u>5.03%</u>
4	Total	\$ 5,	144,452,329	100.0	0%		7.36%

Source:

Schedule J-1.1/J-1.2.

Electric Utilities (Valuation Metrics)

Price to Farnings (P/F) Ratio 1

								Price to I	Earnings (P/E)	Ratio 1				
		24-Year									3-Year	Averages		
Line	Company	Average	2025 ²	2024	2023	2022	2021	2020	2017-2019	2014-2016	2011-2013	2008-2010	2005-2007	2002-2004
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
		. ,	. ,	,	. ,	1-7	,	` '	(-)	(-7	,	` ,	` ,	,
1	ALLETE	18.13	17.30	17.30	16.80	18.10	20.60	18.30	23.30	16.97	16.40	15.33	16.42	25.21
2	Alliant Energy	17.14	19.00	19.00	16.40	21.40	21.20	21.20	20.30	19.00	14.77	13.27	14.84	15.54
3	Ameren Corp.	16.97	19.50	19.50	15.50	21.50	21.40	22.20	20.33	17.50	13.93	11.07	17.83	15.19
4	American Electric Power	15.39	17.40	17.40	15.90	21.10	17.10	19.60	19.57	15.63	13.40	12.17	14.30	11.92
5	Avangrid, Inc.	23.69	N/A	N/A	16.30	19.60	23.20	23.60	25.50	27.00	N/A	N/A	N/A	N/A
6	Avista Corp.	18.14	16.20	16.20	14.60	20.00	20.20	21.20	20.97	17.90	16.00	13.03	21.91	19.18
7	Black Hills	17.29	13.90	13.90	14.20	18.10	17.70	17.00	19.17	19.13	22.13	14.00	16.01	15.20
8	CenterPoint Energy	17.23	22.10	22.10	20.40	18.70	26.10	15.90	24.80	19.00	16.03	12.30	14.77	9.83
9	CMS Energy Corp.	18.43	19.30	19.30	18.60	22.90	23.60	23.30	21.97	18.83	15.00	12.33	20.53	12.39
10	Consol. Edison	16.43	19.70	19.30	17.70	20.30	17.20	19.00	18.87	16.77	15.00	12.33	14.80	15.26
11	Dominion Resources	18.13	15.80	15.80	18.30	18.70	19.50	22.60	19.30	22.13	18.47	13.60	20.49	14.12
		16.13								17.33				13.67
12	DTE Energy		18.90	18.90	16.90	22.40	30.00	16.30	18.63		15.43	12.50	16.51	
13	Duke Energy	17.38	19.00	19.00	16.50	19.60	18.90	17.10	18.20	19.13	16.23	14.43	16.10	N/A
14	Edison Int'l	16.44	9.70	9.70	14.30	40.60	29.70	34.90	16.95	15.23	11.40	10.80	13.58	17.45
15	El Paso Electric	17.68	N/A	N/A	N/A	N/A	N/A	N/A	24.32	17.79	14.32	11.14	19.63	21.10
16	Entergy Corp.	15.26	24.40	24.40	20.60	21.10	15.00	15.30	15.10	12.10	11.17	13.40	16.62	13.46
17	Eversource Energy	17.78	12.40	12.40	13.10	20.90	22.20	23.70	20.10	18.23	17.40	13.03	21.84	16.73
18	Evergy, Inc.	18.69	16.20	16.20	14.80	19.90	16.20	21.70	22.25	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	14.64	17.50	17.50	15.40	19.90	16.60	12.40	13.80	13.70	14.60	13.50	16.70	11.74
20	FirstEnergy Corp.	15.32	16.80	16.80	14.40	17.00	14.10	15.70	14.03	12.83	18.87	13.43	15.30	16.52
21	Fortis Inc.	19.28	19.50	19.50	17.00	21.10	21.20	20.60	17.70	21.30	19.63	17.37	19.39	N/A
22	Great Plains Energy	15.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17.94	15.28	16.23	16.20	11.97
23	Hawaiian Elec.	17.09	11.20	11.20	6.00	18.50	18.20	21.50	20.30	16.63	16.37	20.53	19.30	15.47
24	Hydro One Limited ³	19.31	25.20	25.20	20.50	19.60	18.70	9.20	19.25	18.10	N/A	N/A	N/A	N/A
25	IDACORP, Inc.	17.35	19.60	19.60	18.10	21.00	20.80	19.90	21.13	16.67	12.43	11.97	16.66	20.29
26	MGE Energy	20.48	24.70	24.70	21.10	24.70	25.50	26.40	27.63	20.80	16.67	14.77	17.76	17.16
27	NextEra Energy, Inc.	18.69	17.90	17.90	19.80	27.80	31.30	28.90	24.40	18.30	14.17	12.90	16.81	15.05
28	NorthWestern Corp	16.84	16.00	16.00	13.70	17.30	17.40	18.60	18.17	17.27	15.07	12.77	21.58	N/A
29	OGE Energy	15.70	19.20	19.20	17.00	17.20	14.30	16.20	17.93	17.90	15.77	12.17	14.14	13.36
30	Otter Tail Corp.	19.93	12.30	12.30	14.30	9.50	12.30	18.30	22.60	19.07	30.10	30.65	17.25	17.04
31	Pinnacle West Capital	16.12	18.70	18.70	15.80	17.10	14.10	16.70	18.83	16.87	14.73	14.13	15.94	14.73
32	TXNM Energy	18.24	17.80	17.80	14.20	17.40	19.90	19.60	20.67	19.93	15.20	16.05	22.85	14.94
33	Portland General	16.41	13.70	13.70	14.30	18.20	17.70	16.60	20.23	17.37	14.43	14.23	17.63	N/A
34	PPL Corp.	16.53	19.70	19.70	16.20	20.00	54.10	13.90	14.07	13.60	11.40	18.40	15.51	11.39
35	Public Serv. Enterprise	14.99	20.20	20.20	18.80	18.50	16.80	15.70	16.97	14.00	12.23	11.33	17.02	11.61
36	SCANA Corp.	13.96	N/A	N/A	N/A	N/A	N/A	N/A	14.46	15.05	14.30	12.41	14.94	12.93
37	Sempra Energy	15.33	13.00	13.00	15.00	16.80	15.40	17.50	22.40	22.00	15.47	11.50	12.43	8.60
38	Southern Co.	16.68	21.10	21.10	18.60	19.60	18.40	17.90	16.07	16.53	16.33	14.83	16.04	14.72
39	Vectren Corp.	17.05	N/A	N/A	N/A	N/A	N/A	N/A	23.54	19.03	17.17	14.93	16.45	15.51
40	WEC Energy Group	17.67	20.30	20.30	16.50	21.90	22.30	24.90	21.03	19.63	15.50	14.03	15.64	13.47
41	Westar Energy	15.58	N/A	N/A	N/A	N/A	N/A	N/A	23.40	18.47	14.08	14.96	13.69	14.08
42	Xcel Energy Inc.	17.89	18.10	18.10	15.30	22.20	22.50	23.90	20.47	16.80	14.67	13.50	15.62	22.02
42	Acer Ellergy IIIc.	17.08	10.10	10.10	10.00	22.20	22.50	23.50	20.47	10.00	14.07	13.30	13.02	22.02
43	Average	17.09	17.87	17.87	16.29	20.28	20.85	19.66	19.97	17.79	15.68	14.15	16.95	15.11
	Median	16.31	18.40	18.40	16.29	19.90	19.50	19.00	20.23	17.79	15.00	13.43	16.45	14.94
44	Mediall	10.51	10.40	10.40	10.50	15.50	18.50	19.00	20.23	17.80	13.20	13.43	10.45	14.54

Sources:
The current year P/E ratio is based on the forward P/E (price over expected earnings per share). All historical year P/E ratios are based on annual average share price over achieved earnings per share.

Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

Electric Utilities (Valuation Metrics)

Market Price to Cash Flow (MP/CF) Ratio 1

		Market Price to Cash Flow (MP/CF) Ratio												
		24-Year										Averages		
Line	<u>Company</u>	<u>Average</u>	2025 ²	2024	2023	2022	2021	2020	2017-2019	2014-2016	2011-2013	2008-2010	2005-2007	2002-2004
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	ALLETE	9.06	7.70	8.03	6.69	7.56	8.61	8.14	10.83	8.19	8.41	8.61	10.97	11.46
2	Alliant Energy	8.40	10.50	9.74	9.43	10.43	10.31	10.66	11.22	9.31	7.41	6.77	7.01	5.16
3	Ameren Corp.	7.47	8.52	7.76	8.05	9.54	9.03	9.63	8.59	7.09	5.70	4.94	8.28	7.65
4	American Electric Power	6.83	8.21	7.70	7.68	8.67	7.57	8.41	8.72	7.22	5.99	5.32	6.15	5.13
5	Avangrid, Inc.	9.53	N/A	N/A	7.00	8.69	11.19	9.39	9.83	9.93	N/A	N/A	0.13 N/A	N/A
6	Avangna, inc. Avista Corp.	6.91	6.18	6.34	6.73	9.39	8.03	7.80	9.63 8.94	7.23	6.50	4.99	6.49	6.28
7	Black Hills	7.89	7.55	7.58	7.76	8.92	8.84	8.56	9.56	7.23 8.73	7.30	7.22	7.37	6.50
8	CenterPoint Energy	5.79	7.55 8.74	7.75	7.75	8.01	7.95	5.94	7.48	5.99	5.70	4.35	4.60	2.83
-						9.43		9.87	9.00	7.72	6.04			3.04
9	CMS Energy Corp. Consol. Edison	6.67 8.23	8.16 7.93	8.53 8.34	8.28 8.26	9.43 8.70	9.27 7.26	9.87 8.35	9.00	7.72 8.42	8.08	3.85 7.00	4.67 8.52	3.04 8.28
10 11	Dominion Resources	8.23 9.78	7.93 8.02	9.08	9.24	9.35	11.15	14.59	9.28 11.92	11.90	10.08		8.52 8.85	8.28 7.24
									9.09			7.79		
12	DTE Energy	6.86	8.05	7.72	7.27	7.96	10.62	7.85		7.86	5.92	4.39	5.49	5.61 N/A
13	Duke Energy	7.61	7.68	7.47	7.17	7.75	7.89	8.06	7.82	8.21	8.07	6.37	7.16	
14	Edison Int'l	5.96	4.70	6.04	5.67	6.83	7.14	7.57	9.25	6.12	4.76	4.56	6.16	4.21
15	El Paso Electric	5.93	N/A	N/A	N/A	N/A	N/A	N/A	8.99	6.75	5.71	4.41	6.45	4.31
16	Entergy Corp.	5.97	9.27	7.85	4.62	7.15	5.61	5.78	5.21	4.11	4.06	6.10	8.38	6.51
17	Eversource Energy	7.55	6.41	6.51	10.39	9.39	11.41	12.53	10.33	10.13	8.12	4.57	5.25	3.13
18	Evergy, Inc.	7.40	7.61	6.57	6.74	8.66	7.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	6.08	6.60	6.06	6.41	7.69	5.08	4.44	4.93	4.86	5.34	6.91	8.82	5.66
20	FirstEnergy Corp.	6.95	7.66	7.47	7.90	8.93	6.60	9.23	8.23	5.98	6.97	5.66	7.15	5.72
21	Fortis Inc.	8.40	7.51	8.09	8.34	9.10	9.57	9.50	8.56	9.00	8.13	7.25	8.54	N/A
22	Great Plains Energy	6.89	N/A	N/A	N/A	N/A	N/A	N/A	14.62	7.25	5.85	5.75	7.17	5.86
23	Hawaiian Elec.	7.54	3.72	2.16	5.70	7.95	8.23	8.69	8.95	8.11	7.98	7.95	8.24	6.92
24	Hydro One Limited3	11.77	12.92	15.81	14.82	14.51	13.75	7.31	11.10	8.51	N/A	N/A	N/A	N/A
25	IDACORP, Inc.	9.13	10.79	10.78	11.04	12.42	11.84	11.38	12.01	9.64	7.16	6.31	7.83	7.31
26	MGE Energy	11.82	12.97	13.62	12.31	13.63	N/A	14.90	15.98	13.20	10.48	8.62	10.08	9.78
27	NextEra Energy, Inc.	9.34	10.53	11.24	10.89	15.17	20.40	15.48	11.57	8.38	7.05	6.26	7.42	6.15
28	NorthWestern Corp	7.86	7.55	7.33	8.01	8.65	8.83	8.88	8.98	8.88	6.78	5.47	8.39	8.13
29	OGE Energy	7.97	8.54	8.14	7.78	8.36	7.64	8.38	10.16	9.64	8.25	6.14	7.37	5.91
30	Otter Tail Corp.	9.24	8.93	8.91	8.02	7.70	8.61	9.99	11.70	9.29	9.02	9.24	8.79	8.49
31	Pinnacle West Capital	6.23	6.93	6.11	6.47	5.19	6.19	7.49	8.04	7.28	6.33	4.56	5.57	5.30
32	TXNM Energy	6.87	6.98	6.06	6.87	6.95	7.81	7.87	7.63	7.36	5.74	5.40	8.60	6.03
33	Portland General	5.96	5.28	5.90	6.56	6.65	6.48	6.72	7.22	6.45	5.33	4.52	5.54	N/A
34	PPL Corp.	7.99	9.18	9.95	7.83	8.82	13.74	7.46	8.37	8.14	6.14	8.48	8.02	5.73
35	Public Serv. Enterprise	8.27	11.84	11.78	9.68	10.53	11.32	8.22	8.96	7.24	6.28	6.90	8.95	6.73
36	SCANA Corp.	7.09	N/A	N/A	N/A	N/A	N/A	N/A	8.26	8.48	7.21	6.26	6.53	6.60
37	Sempra Energy	8.53	9.01	9.76	8.93	9.75	13.23	10.40	10.93	10.55	7.59	6.56	7.60	4.67
38	Southern Co.	8.42	10.24	9.59	8.64	9.63	8.72	8.34	7.78	8.49	8.42	7.68	8.50	8.13
39	Vectren Corp.	7.08	N/A	N/A	N/A	N/A	N/A	N/A	10.32	8.00	6.14	5.91	6.99	7.28
40	WEC Energy Group	9.28	10.00	9.53	10.12	11.81	11.99	13.67	11.58	11.37	9.08	7.53	7.17	5.15
41	Westar Energy	6.91	N/A	N/A	N/A	N/A	N/A	N/A	10.87	9.28	6.87	5.97	6.56	4.57
42	Xcel Energy Inc.	7.07	7.45	7.13	7.96	8.62	9.19	10.07	8.61	7.68	6.78	5.80	5.89	5.01
43	Average	7.73	8.33	8.29	8.19	9.15	9.40	9.21	9.55	8.24	6.99	6.22	7.37	6.18
44		7.69	8.03	7.80	7.90	8.70	8.78	8.48	9.00	8.19	6.87	6.14	7.37	5.97

Sources:

The current year P/E ratio is based on the forward P/E (price over expected earnings per share). All historical year P/E ratios are based on annual average share price over

achieved earnings per share.

Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

^a Based on the average of the high and low price and the projected Cash Flow per share.

Electric Utilities (Valuation Metrics)

Market Price to Book Value (MP/BV) Ratio 1

3-Year Averages

Line <u>Average</u> 2025 ² 2024 2023 2022 2021 2020 2017-2019 2014-2016 2011-2013 2008-2010 2005-2007 Company (2) (11) ALLETE 1.19 1.19 1.24 1.39 1.83 1.33 2.07 Alliant Energy 1.58 1.12 1.51 1.64 1.84 2.13 2.03 1 92 2.25 2.26 2.30 2 29 1.96 1 23 1.63 2.15 2.13 2.21 0.95 Ameren Corp. 2.08 2.00 2.04 1.90 1.53 American Electric Power 1.66 1.91 1.78 1.73 1.99 1.87 2.09 1.97 1.64 1.31 1.27 1.66 Avangrid, Inc. 0.90 N/A N/A 0.71 0.89 1.01 0.97 0.99 0.78 N/A N/A N/A 1.13 1.42 1.22 1.04 1.24 Avista Corp. 1.31 1.11 1.33 1.15 1.78 1.52 1.74 Black Hills 1.47 1.14 1.28 1.54 1.55 1.87 1 77 1.32 1.04 1 56 CenterPoint Energy 2.24 1.99 1.90 1.96 1.86 2.33 2.48 2.05 2.07 2.98 CMS Energy Corp. 2.21 2.38 2.33 2.71 2.69 3.24 3.01 2.47 1.52 10 Consol, Edison 1.43 1.52 1.53 1.48 1.55 1.34 1.44 1.57 1.45 1.41 1.15 1.49 Dominion Resources 1.71 2.34 2.37 2.72 12 DTE Energy 1 70 2.20 2.10 1 97 2 41 2.82 1.80 1 99 1 70 1.35 1.05 1.35 1.67 1.63 Duke Energy 1.33 1.76 1.49 1.58 1.14 0.99 1.15 1.31 14 15 Edison Int'l El Paso Electric 1.72 1.68 2.10 1.86 2.08 1.67 1.62 1.98 1.78 1.45 1.22 1.93 1.56 N/A 1.56 N/A N/A N/A N/A N/A 1.91 1.57 1.16 1.72 Entergy Corp.
Eversource Energy 16 17 1.81 1.45 1.93 1.54 1.36 1.48 1.71 1.86 2.00 2.11 1.80 1.55 1.39 1.25 1.29 18 1.42 1.42 1.31 1.33 1.52 1.50 N/A N/A N/A N/A N/A Evergy, Inc. N/A 19 Exelon Corp 2.02 1.56 1.39 1.52 1.88 1.37 1 20 1.31 1.21 1.53 3.01 4 09 2.08 FirstEnergy Corp. 20 2.04 1.82 1.86 2.33 2.81 3.20 1.56 1.35 1.81 2.37 1.93 21 Fortis Inc. 1.46 1.27 1.37 1.43 1.56 1.48 1.47 1.35 1.31 1.55 1.79

N/A

1.81

1.64

N/A

4.27

1.67

2.33

1.45

1.86

1.52 2.11

N/A 1.64

2.39

N/A

2.61

N/A

2.27

1 91

1.74

N/A

1.82

1.44

1.84

2.54

3.58

1 86

2.04

1.63

1.87

1.63

1.70

N/A

1.84

2.20

N/A

N/A

2.46

1 94

2.84

1.33

1.41

2.00

2.78

2.47

1 88

2.48

1.85

1.98

2.02

1.82

1.65

2.17

2.03

2.75

2.27

2.12

1 98

1.13

1.61

1.34

1.58

2.26

2.18

1 92

1.86

1.56

1.36

2 11

1.61

1.56

2.12

2.01

2.16

2.08

1.63

1.70

1 72

1.61

0.97

N/A 1.23

1.74

2.03

1.63

1.37

0.96

1.53

1.50

1.44

2.06

1.64

2.02

1.27

1.47

1.52

1.45

0.93

N/A 1.05

1.75

1.53

1.36

1.03

0.64

2.30

2.01

1.32

1.42

1.89

1.46

1.54

1.04

1.27

1 4 1

1.77

1.78

N/A 1.28

2.02

1 90

1.81

1.25

1.30

2 66

2.63

1.66

1.77

2.27

1.77

1.70

1.35 1.44

1 81

Median
Sources:

43 Average

Great Plains Energy

Hydro One Limited3 IDACORP, Inc.

NextEra Energy, Inc.

NorthWestern Corp

Pinnacle West Capital TXNM Energy

PPL Corp. Public Serv. Enterprise

Hawaiian Elec.

MGE Energy

OGE Energy

Otter Tail Corp.

Portland General

SCANA Corp.

Southern Co.

Vectren Corp

Sempra Energy

Westar Energy Xcel Energy Inc.

WEC Energy Group

22

23

24 25

27

28

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30

31

32

33

34 35

36 37

38

39

40

42

21-Year

1.21

1.62

1.62

2.19

2.42

1.81

1.94

1.43

1.39

1.96

1.98

1.51

1.78

1.83

2.09

1.37

1.74

1 74

N/A

1.05

2.01

1.69

2.65

1 82

1.86

1.53

1.76

1.65

2.45

1.58

2.74

2.49

1.89

1 80

1.76

N/A

N/A

N/A

N/A

1.50

2.12

2.54

2.87

1.11

1.67

2.18

1.42

1.49

1.28

1.59 2.35

N/A

1.74

2.68

N/A

2.27

N/A

1.77

1 78

1.73

N/A

1.24

1.89

2.89

1.18

1 62

2.55

1.42

1.43

1.92

N/A

1.65

2.34

N/A

2.35

N/A 2.00

1 73

N/A

1.94

1.83 1.91

2.47

4.07

1.25

1.74

2.30

1.31

1.81

1.44 2.32

N/A

1.84

2.53

N/A

2.57

N/A

2.22

1 95

1.88

Notes

The current year P/E ratio is based on the forward P/E (price over expected earnings per share). All historical year P/E ratios are based on annual average share price over achieved earnings per share.

¹ Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

^b Based on the average of the high and low price and the projected Book Value per share.

Electric Utilities (Valuation Metrics)

							Divid	dend Yield ¹				
		20-Year							3	3-Year Average	es	
Line	<u>Company</u>	<u>Average</u>	2025 2/a	2024	2023	2022	2021	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALLETE	4.07%	4.52%	4.63%	4.67%	4.47%	3.88%	3.29%	3.50%	4.10%	5.13%	3.71%
2	Alliant Energy	3.59%	3.32%	3.46%	3.57%	3.04%	2.97%	2.99%	3.29%	3.78%	4.87%	3.52%
3	Ameren Corp.	4.02%	2.99%	3.29%	3.13%	2.74%	2.74%	2.74%	3.53%	4.53%	5.67%	5.34%
4	American Electric Power	3.96%	3.79%	3.96%	4.02%	3.41%	3.61%	3.33%	3.58%	4.21%	5.12%	3.89%
5	Avangrid, Inc.	3.89%	N/A	N/A	4.87%	3.94%	3.53%	3.57%	4.03%	N/A	N/A	N/A
6	Avista Corp.	3.99%	5.13%	5.29%	4.85%	4.26%	3.94%	3.48%	3.50%	4.35%	4.60%	2.86%
7	Black Hills	3.81%	4.62%	4.53%	4.15%	3.44%	3.50%	3.16%	3.05%	3.47%	5.20%	3.80%
8	CenterPoint Energy	4.00%	2.55%	2.77%	2.71%	2.46%	2.77%	3.82%	4.85%	3.85%	5.31%	4.42%
9	CMS Energy Corp.	3.19%	3.09%	3.23%	3.37%	2.92%	2.92%	2.77%	3.07%	3.84%	4.07%	1.93%
10	Consol. Edison	4.20%	3.36%	3.43%	3.57%	3.51%	4.10%	3.66%	3.71%	4.23%	5.20%	5.18%
11	Dominion Resources	4.16%	5.04%	5.06%	5.18%	3.66%	3.38%	4.60%	3.78%	3.76%	4.58%	3.56%
12	DTE Energy	3.93%	3.44%	3.55%	3.67%	3.17%	3.06%	3.33%	3.34%	3.86%	5.24%	4.82%
13	Duke Energy	4.52%	3.66%	3.92%	4.28%	3.98%	4.02%	4.35%	4.25%	4.46%	5.72%	4.80%
14	Edison Int'l	3.50%	5.17%	4.17%	4.47%	4.45%	4.39%	3.95%	2.84%	2.82%	3.66%	2.49%
15	El Paso Electric	2.74%	N/A	N/A	N/A	N/A	N/A	2.55%	2.79%	2.98%	2.11%	N/A
16	Entergy Corp.	3.96%	2.98%	3.62%	4.36%	3.70%	3.84%	3.83%	4.54%	4.81%	4.34%	2.71%
17	Eversource Energy	3.43%	5.16%	4.72%	3.89%	3.09%	2.85%	2.92%	3.23%	3.47%	3.67%	3.04%
18	Evergy, Inc.	4.08%	4.17%	4.58%	4.42%	3.66%	3.59%	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	3.77%	3.80%	4.08%	3.67%	2.89%	3.17%	3.40%	3.71%	4.70%	4.72%	2.70%
20	FirstEnergy Corp.	4.31%	4.38%	4.23%	4.24%	3.71%	4.39%	4.28%	4.39%	4.47%	5.36%	3.24%
21	Fortis Inc.	3.77%	4.51%	4.16%	4.09%	3.82%	3.77%	3.78%	3.75%	3.79%	3.86%	3.19%
22	Great Plains Energy	4.52%	N/A	N/A	N/A	N/A	N/A	N/A	3.66%	3.84%	4.55%	6.02%
23	Hawaiian Elec.	4.40%	N/A	N/A	4.09%	3.59%	3.44%	3.32%	3.90%	4.73%	5.81%	4.92%
24	Hydro One Limited	2.78%	2.42%	2.11%	2.34%	2.50%	2.53%	3.22%	2.99%	N/A	N/A	N/A
25	IDACORP, Inc.	3.16%	3.12%	3.24%	3.18%	2.86%	2.89%	2.67%	2.80%	3.20%	3.66%	3.63%
26	MGE Energy	2.91%	2.05%	2.06%	2.25%	2.15%	N/A	2.07%	2.32%	2.98%	3.99%	4.21%
27	NextEra Energy, Inc.	2.92%	3.29%	2.94%	2.80%	2.11%	1.90%	2.40%	2.90%	3.32%	3.93%	N/A
28	NorthWestern Corp	4.21%	4.79%	5.01%	4.78%	4.51%	4.00%	3.72%	3.52%	3.71%	5.06%	4.37%
29	OGE Energy	3.87%	3.96%	4.39%	4.63%	4.30%	4.81%	4.06%	3.66%	2.68%	3.90%	4.10%
30	Otter Tail Corp.	3.70%	2.67%	2.15%	2.33%	2.44%	2.81%	3.04%	3.77%	4.49%	5.54%	3.67%
31	Pinnacle West Capital	4.48%	4.06%	4.42%	4.51%	4.90%	4.44%	3.60%	3.50%	4.46%	5.67%	5.19%
32	TXNM Energy	3.19%	3.26%	3.70%	3.27%	3.04%	2.09%	2.68%	2.71%	2.91%	4.01%	3.81%
33	Portland General	3.79%	4.86%	4.45%	4.20%	3.63%	3.62%	3.19%	3.08%	3.71%	4.98%	3.39%
34	PPL Corp.	4.36%	3.21%	3.40%	3.53%	3.23%	5.83%	5.56%	4.35%	4.78%	4.91%	3.06%
35	Public Serv. Enterprise	3.68%	3.04%	3.16%	3.83%	3.37%	3.37%	3.44%	3.78%	4.28%	4.28%	3.15%
36	SCANA Corp.	4.37%	N/A	N/A	N/A	N/A	N/A	N/A	3.74%	4.15%	5.13%	4.48%
37	Sempra Energy	3.03%	3.46%	3.06%	3.27%	2.99%	3.39%	3.11%	2.85%	3.12%	3.32%	2.39%
38	Southern Co.	4.47%	3.40%	3.57%	4.13%	3.82%	4.17%	4.68%	4.61%	4.53%	5.10%	4.49%
39	Vectren Corp.	4.38%	N/A	N/A	N/A	N/A	N/A	N/A	3.23%	4.20%	5.48%	4.61%
40	WEC Energy Group	3.11%	3.52%	3.75%	3.57%	3.08%	3.00%	2.96%	3.38%	3.38%	3.16%	2.24%
41	Westar Energy	4.37%	N/A	N/A	N/A	N/A	N/A	N/A	3.21%	4.24%	5.48%	4.55%
42	Xcel Energy Inc.	3.67%	3.36%	3.64%	3.28%	2.90%	2.81%	2.86%	3.37%	3.86%	4.63%	4.39%
43	Average	3.82%	3.72%	3.76%	3.82%	3.40%	3.49%	3.42%	3.51%	3.90%	4.64%	3.83%
44	Median	3.67%	3.46%	3.70%	3.89%	3.41%	3.47%	3.33%	3.50%	3.86%	4.87%	3.80%

Sources

Notes:

¹ Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

 $^{^{2}}$ The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

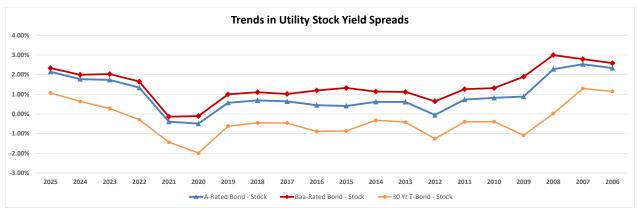
³ St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.

 $^{^{\}rm 4}$ Mergent Bond Record, through June 30, 2025.

^a Based on the average of the high and low price and the projected Dividends Declared per share, published in the Value Line Investment Survey.

Electric Utilities (Valuation Metrics)

Dividend Yield ¹												
		20-Year							3	-Year Average	es	
Line	<u>Company</u>	<u>Average</u>	2025 2/a	2024	2023	2022	2021	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Average	3.82%	3.72%	3.76%	3.82%	3.40%	3.49%	3.42%	3.51%	3.90%	4.64%	3.83%
2	Median	3.67%	3.46%	3.70%	3.89%	3.41%	3.47%	3.33%	3.50%	3.86%	4.87%	3.80%
3	30-Yr Treasury Yields	3.50%	4.79%	4.41%	4.09%	3.11%	2.06%	2.42%	2.78%	3.24%	4.08%	4.67%
4	20-Yr Treasury Yields ³	3.39%	4.81%	4.50%	4.25%	3.30%	1.98%	2.26%	2.47%	2.91%	3.92%	4.75%
5	20-Yr TIPS ³	1.18%	2.36%	2.06%	1.73%	0.64%	-0.43%	0.41%	0.73%	0.61%	1.71%	2.28%
6	Implied Inflation ^b	2.18%	2.39%	2.39%	2.48%	2.64%	2.42%	1.84%	1.73%	2.29%	2.17%	2.42%
7	Real Dividend Yield ^c	1.60%	1.30%	1.34%	1.30%	0.74%	1.04%	1.55%	1.75%	1.57%	2.42%	1.38%
	A-Rated Utility	_										
8	Nominal "A" Rated Yield ⁴	4.80%	5.87%	5.54%	5.55%	4.74%	3.10%	3.69%	4.01%	4.29%	5.51%	6.22%
9	Real "A" Rated Yield	2.56%	3.40%	3.08%	2.99%	2.05%	0.67%	1.82%	2.24%	1.96%	3.27%	3.72%
	Baa-Rated Utility	_										
10	Nominal "Baa" Rated Yield	5.28%	6.05%	5.76%	5.85%	5.05%	3.36%	4.10%	4.69%	4.87%	6.20%	6.63%
11	Real "Baa" Rated Yield	3.03%	3.57%	3.29%	3.29%	2.35%	0.91%	2.22%	2.91%	2.52%	3.94%	4.11%
	Spreads (A-Rated Utility Bond - Stock)	_										
12	Nominal Spread ^d	0.98%	2.15%	1.78%	1.73%	1.34%	-0.38%	0.27%	0.50%	0.40%	0.87%	2.39%
13	Real Spread ^e	0.96%	2.10%	1.73%	1.69%	1.31%	-0.38%	0.27%	0.49%	0.39%	0.85%	2.33%
	Spreads (Baa-Rated Utility Bond - Stock)	_										
14	Nominal Spread ^b	1.46%	2.33%	2.00%	2.03%	1.65%	-0.13%	0.68%	1.18%	0.97%	1.55%	2.80%
15	Real Spread ^c	1.43%	2.28%	1.95%	1.98%	1.61%	-0.13%	0.67%	1.16%	0.95%	1.52%	2.73%
	Spreads (20-Yr Treasury Bond - Stock)	_										
16	Nominal ^f	-0.43%	1.09%	0.74%	0.44%	-0.10%	-1.51%	-1.16%	-1.04%	-0.99%	-0.72%	0.92%
17	Real ^g	-0.42%	1.06%	0.72%	0.43%	-0.10%	-1.47%	-1.14%	-1.02%	-0.96%	-0.71%	0.90%
	Spreads (30-Yr Treasury Bond - Stock)	_										
18	Nominal ^h	-0.32%	1.07%	0.64%	0.28%	-0.29%	-1.43%	-1.00%	-0.74%	-0.66%	-0.56%	0.83%



Sources:

- Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.
- Data for the years 2020 2024 was retrieved from Value Line Investment Surveys.
- ² The Value Line Investment Survey, May 9, June 6, and July 18, 2025.
- ³ St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.
- ⁴ Mergent Bond Record, through June 30, 2025.

Notes:

- ^a Based on the average of the high and low price and the projected Dividends Declared per share, published in the Value Line Investment Survey.
- ^b Line 6 = (1 + Line 4) / (1 + Line 5) 1.
- ^c Line 7 = (1 + Line 1) / (1 + Line 6) 1.
- d The spread being measured here is the nominal A-rated utility bond yield over the average nominal utility dividend yield; (Line 8 Line 1).
- e The spread being measured here is the real A-rated utility bond yield over the average real utility dividend yield; Line 9 Line 7)
- The spread being measured here is the nominal 20-Year Treasury yield over the average nominal utility dividend yield; (Line 4 Line 1).
- ⁹ The spread being measured here is the real 20-Year TIPS yield over the average real utility dividend yield; Line 7 Line 5)

Electric Utilities (Valuation Metrics)

Divid												
		20-Year					Divide	ona per onare	3	3-Year Average	es	
Line	Company	Average	2025 ²	2024	2023	2022	2021	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008
	<u></u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALLETE	2.14	2.94	2.82	2.71	2.60	2.52	2.35	2.08	1.90	1.77	1.60
2	Alliant Energy	1.20	2.04	1.92	1.81	1.71	1.61	1.43	1.18	0.95	0.80	0.64
3	Ameren Corp.	2.03	2.85	2.68	2.52	2.36	2.20	1.92	1.72	1.60	1.55	2.54
4	American Electric Power	2.38	3.80	3.57	3.37	3.17	3.00	2.69	2.27	1.95	1.73	1.57
5	Avangrid, Inc.	1.75	N/A	N/A	1.76	1.76	1.76	1.75	1.73	N/A	N/A	N/A
6	Avista Corp.	1.32	2.00	1.90	1.84	1.76	1.69	1.55	1.37	1.22	0.97	0.62
7	Black Hills	1.84	2.70	2.60	2.50	2.41	2.29	2.05	1.70	1.52	1.44	1.36
8	CenterPoint Energy	0.85	0.89	0.81	0.77	0.72	0.66	0.96	1.12	0.86	0.78	0.67
9	CMS Energy Corp.	1.25	2.17	2.06	1.95	1.84	1.74	1.53	1.24	1.02	0.67	0.28
10	Consol. Edison	2.73	3.40	3.32	3.24	3.16	3.10	2.96	2.68	2.47	2.38	2.32
11	Dominion Resources	2.44	2.67	2.67	2.67	2.67	2.52	3.49	2.81	2.25	1.85	1.47
12	DTE Energy	3.07	4.41	4.15	3.88	3.54	3.88	3.85	3.09	2.57	2.21	2.11
13	Duke Energy	3.41	4.22	4.14	4.06	3.98	3.90	3.74	3.36	3.09	2.90	2.64
14	Edison Int'l	2.00	3.36	3.17	2.99	2.84	2.69	2.49	1.98	1.39	1.27	1.17
15	El Paso Electric	1.11	N/A	N/A	N/A	N/A	N/A	1.42	1.24	1.04	0.66	N/A
16	Entergy Corp.	1.76	2.43	2.30	2.17	2.05	1.93	1.83	1.71	1.66	1.59	1.29
17	Eversource Energy	1.75	3.01	2.86	2.70	2.55	2.41	2.14	1.78	1.45	1.03	0.78
18	Evergy, Inc.	2.46	2.71	2.60	2.48	2.33	2.18	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	1.61	1.62	1.52	1.44	1.35	1.53	1.45	1.27	1.60	2.10	1.84
20	FirstEnergy Corp.	1.77	1.78	1.70	1.60	1.56	1.56	1.64	1.44	1.76	2.20	2.03
21	Fortis Inc.	1.56	2.49	2.39	2.29	2.17	2.08	1.86	1.54	1.25	1.11	0.83
22	Great Plains Energy	1.11	N/A	N/A	N/A	N/A	N/A	N/A	1.05	0.89	0.83	1.66
23	Hawaiian Elec.	1.25	N/A	N/A	1.08	1.40	1.36	1.28	1.24	1.24	1.24	1.24
24	Hydro One Limited	0.79	1.00	0.90	0.86	0.86	0.75	0.74	0.69	N/A	N/A	N/A
25	IDACORP, Inc.	2.09	3.52	3.35	3.20	3.04	2.88	2.56	2.08	1.57	1.20	1.20
26	MGE Energy	1.25	1.85	1.76	1.67	1.59	N/A	1.38	1.21	1.07	0.99	0.94
27	NextEra Energy, Inc.	1.03	2.27	2.06	1.87	1.70	1.54	1.25	0.87	0.66	0.51	0.41
28	NorthWestern Corp	1.92	2.64	2.60	2.56	2.52	2.48	2.30	2.01	1.53	1.38	1.28
29	OGE Energy	1.16	1.71	1.68	1.66	1.64	1.63	1.49	1.16	0.87	0.74	0.68
30	Otter Tail Corp.	1.38	2.10	1.87	1.75	1.65	1.56	1.41	1.25	1.20	1.19	1.17
31	Pinnacle West Capital	2.70	3.61	3.55	3.49	3.42	3.36	3.05	2.57	2.41	2.10	2.08
32	TXNM Energy	0.96	1.65	1.57	1.49	1.41	0.98	1.17	0.89	0.67	0.50	0.79
33	Portland General	1.34	2.09	1.98	1.88	1.79	1.70	1.51	1.26	1.10	1.03	0.86
34	PPL Corp.	1.37	1.09	1.03	0.95	0.88	1.66	1.65	1.53	1.47	1.39	1.22
35	Public Serv. Enterprise	1.70	2.52	2.40	2.28	2.16	2.04	1.88	1.64	1.45	1.36	1.20
36	SCANA Corp.	2.00	N/A	N/A	N/A	N/A	N/A	N/A	2.31	2.04	1.91	1.76
37	Sempra Energy	2.68	2.60	2.48	2.38	4.58	4.40	3.88	3.04	2.52	1.68	1.27
38	Southern Co.	2.21	2.96	2.86	2.78	2.70	2.62	2.46	2.23	2.01	1.80	1.60
39	Vectren Corp.	1.42	N/A	N/A	N/A	N/A	N/A	N/A	1.62	1.43	1.37	1.27
40	WEC Energy Group	1.84	3.57	3.34	3.12	2.91	2.71	2.37	1.93	1.40	0.84	0.50
41	Westar Energy	1.30	N/A	N/A	N/A	N/A	N/A	N/A	1.52	1.36	1.24	1.07
42	Xcel Energy Inc.	1.42	2.28	2.19	2.08	1.95	1.83	1.62	1.36	1.13	1.00	0.91
43	Average	1.78	2.54	2.42	2.27	2.24	2.19	2.03	1.73	1.53	1.37	1.29
44	Industry Average Growth	4.00%	4.89%	6.91%	1.35%	2.21%	2.43%	5.38%	5.18%	3.52%	1.68%	5.43%

Sources:

Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.
Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

Electric Utilities (Valuation Metrics)

							Farnin	gs per Share ¹				
		20-Year					Lumi	go per onare	3	3-Year Average	es	
Line	Company	Average	2025 ²	2024	2023	2022	2021	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008
	<u></u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALLETE	3.05	3.75	3.10	4.30	3.38	3.23	3.35	3.22	2.70	2.24	2.89
2	Alliant Energy	1.93	3.25	2.69	2.78	2.73	2.63	2.33	1.78	1.64	1.23	1.22
3	Ameren Corp.	3.17	4.95	4.59	4.37	4.14	3.84	3.39	2.61	2.30	2.67	2.84
4	American Electric Power	3.88	5.90	5.61	5.24	5.09	4.96	4.13	3.81	3.17	2.90	2.90
5	Avangrid, Inc.	1.88	N/A	N/A	2.09	2.32	1.97	2.02	1.50	N/A	N/A	N/A
6	Avista Corp.	1.89	2.60	2.29	2.24	2.12	2.10	2.31	2.00	1.67	1.65	1.18
7	Black Hills	2.84	4.10	3.91	3.91	3.97	3.74	3.58	2.95	2.49	1.66	1.69
8	CenterPoint Energy	1.28	1.70	1.58	1.37	1.59	0.94	1.17	1.22	1.34	1.12	1.27
9	CMS Energy Corp.	2.00	3.60	3.33	3.01	2.84	2.58	2.45	2.01	1.64	1.24	0.84
10	Consol. Edison	4.07	5.65	5.38	5.04	4.55	4.74	4.19	4.03	3.80	3.39	3.26
11	Dominion Resources	2.88	3.40	2.77	1.99	4.11	3.19	2.42	3.39	2.96	2.76	2.52
12	DTE Energy	4.81	7.20	6.77	6.76	5.52	4.10	6.52	5.00	4.25	3.55	2.61
13	Duke Energy	4.29	6.35	5.90	5.56	5.27	4.93	4.37	4.01	3.94	3.85	3.12
14	Edison Int'l	3.44	5.75	4.91	4.76	1.60	2.00	1.48	4.20	4.22	3.27	3.43
15	El Paso Electric	2.02	N/A	N/A	N/A	N/A	N/A	2.07	2.28	2.24	2.02	1.54
16	Entergy Corp.	3.16	3.35	2.45	5.55	2.69	3.44	3.18	2.98	2.79	3.42	2.86
17	Eversource Energy	2.89	4.75	4.57	4.34	4.09	3.54	3.42	2.94	2.32	2.08	1.42
18	Evergy, Inc.	3.62	4.05	3.80	3.17	3.26	3.83	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	2.81	2.65	2.45	2.38	2.26	1.74	2.56	2.37	2.11	3.97	3.88
20	FirstEnergy Corp.	2.58	2.55	2.63	2.56	2.41	2.69	1.67	2.28	1.98	2.82	4.14
21	Fortis Inc.	2.17	3.40	3.28	3.10	2.78	2.61	2.60	2.22	1.55	1.62	1.39
22	Great Plains Energy	1.33	N/A	N/A	N/A	N/A	N/A	N/A	0.97	1.51	1.27	1.54
23	Hawaiian Elec.	2.04	0.95	10.42	1.81	2.20	2.25	1.88	1.81	1.64	1.19	1.17
24	Hydro One Limited	1.57	2.05	1.92	1.81	1.75	1.61	1.47	1.23	N/A	N/A	N/A
25	IDACORP, Inc.	3.92	5.80	5.50	5.14	5.11	4.85	4.60	4.01	3.62	2.98	2.13
26	MGE Energy	2.26	3.65	3.33	3.25	3.07	N/A	2.51	2.15	2.11	1.63	1.49
27	NextEra Energy, Inc.	1.76	3.70	3.43	3.17	2.90	1.81	1.90	1.53	1.25	1.13	0.88
28	NorthWestern Corp	2.77	3.55	3.27	3.22	3.29	3.60	3.33	3.21	2.57	2.23	1.51
29	OGE Energy	1.85	2.30	2.19	2.07	2.25	2.36	2.15	1.77	1.90	1.52	1.26
30	Otter Tail Corp.	2.65	6.20	7.17	7.00	6.78	4.23	2.19	1.67	1.32	0.51	1.52
31	Pinnacle West Capital	3.90	4.80	5.24	4.41	4.26	5.47	4.73	4.10	3.58	2.78	2.75
32	TXNM Energy	1.70	2.80	2.74	2.82	2.69	2.27	2.03	1.74	1.39	0.84	0.86
33	Portland General	2.14	3.25	3.14	2.38	2.74	2.72	2.16	2.16	1.94	1.64	1.62
34	PPL Corp.	2.11	1.85	1.68	1.60	1.41	0.53	2.33	2.42	2.46	2.03	2.46
35	Public Serv. Enterprise	3.04	4.00	3.68	3.48	3.47	2.55	3.42	2.98	2.63	3.09	2.45
36	SCANA Corp.	3.30	N/A	N/A	N/A	N/A	N/A	N/A	4.06	3.44	2.93	2.76
37	Sempra Energy	4.93	4.55	4.65	4.61	9.21	4.01	6.01	4.70	4.40	4.42	4.31
38	Southern Co.	2.97	4.30	4.06	3.64	3.61	3.42	3.14	2.96	2.71	2.41	2.21
39	Vectren Corp.	1.94	N/A	N/A	N/A	N/A	N/A	N/A	2.51	1.87	1.72	1.63
40	WEC Energy Group	2.99	5.25	4.89	4.63	4.46	4.11	3.57	2.81	2.48	1.90	1.42
41	Westar Energy	1.96	N/A	N/A	N/A	N/A	N/A	N/A	2.26	2.26	1.62	1.68
42	Xcel Energy Inc.	2.30	3.80	3.50	3.35	3.17	2.96	2.63	2.20	1.93	1.59	1.39
43	Average	2.77	3.94	3.97	3.59	3.49	3.10	2.95	2.68	2.47	2.23	2.10
44	Industry Average Growth	3.68%	-0.75%	10.44%	2.96%	12.60%	1.28%	3.44%	2.66%	3.36%	3.58%	2.13%

Sources:

¹ Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021. Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

Electric Utilities (Valuation Metrics)

				Ca	sh Flow / 0	Capital Spe	ending ¹		
									3 - 5 yr ²
Line	Company	2020	2021	2022	2023	2024	2025	2026 ²	Projection
	<u>sompany</u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		(· /	(-/	(0)	(-)	(0)	(0)	(.,	(0)
1	ALLETE	0.74x	0.80x	2.26x	1.42x	2.21x	1.36x	1.38x	1.39x
2	Alliant Energy	0.82x	0.97x	0.94x	0.95x	0.97x	1.04x	1.08x	1.27x
3	Ameren Corp.	0.51x	0.59x	0.72x	0.74x	0.84x	0.88x	0.91x	0.99x
4	American Electric Power	0.74x	0.69x	0.73x	0.72x	0.82x	0.87x	0.91x	1.12x
5	Avista Corp.	0.85x	0.87x	0.83x	0.78x	0.84x	0.95x	0.93x	0.77x
6	Black Hills	0.72x	0.76x	0.85x	0.82x	0.68x	0.67x	0.69x	0.73x
7	CenterPoint Energy	0.88x	0.62x	0.62x	0.57x	0.55x	0.52x	0.50x	0.59x
8	CMS Energy Corp.	0.82x	0.77x	0.78x	0.92x	0.80x	0.67x	0.69x	0.77x
9	Consol. Edison	0.82x	0.89x	0.83x	0.72x	0.84x	0.88x	0.86x	0.99x
10	Dominion Resources	1.00x	0.89x	0.74x	0.63x	0.51x	0.53x	0.62x	0.70x
11	DTE Energy	0.67x	0.70x	0.75x	0.82x	0.87x	0.90x	0.93x	1.01x
12	Duke Energy	0.86x	0.93x	0.81x	0.79x	0.77x	0.92x	0.94x	1.01x
13	Edison Int'l	0.67x	0.74x	0.67x	0.75x	0.82x	0.85x	0.86x	0.90x
14	El Paso Electric	1.00x	0.83x	N/A	N/A	N/A	N/A	N/A	N/A
15	Entergy Corp.	0.81x	1.05x	0.98x	0.85x	0.81x	0.73x	0.74x	0.75x
16	Eversource Energy	0.95x	0.74x	0.72x	0.86x	0.76x	0.74x	0.76x	0.80x
17	Evergy, Inc.	1.06x	0.96x	0.94x	0.86x	0.86x	0.92x	0.95x	1.02x
18	Exelon Corp.	1.30x	1.32x	0.96x	0.99x	0.80x	0.83x	0.84x	0.93x
19	FirstEnergy Corp.	0.96x	0.91x	0.86x	0.80x	0.82x	0.64x	0.68x	0.71x
20	Fortis Inc.	0.60x	0.74x	0.75x	0.82x	0.85x	0.89x	0.91x	0.99x
21	Hawaiian Elec.	1.10x	1.42x	1.30x	1.51x	1.20x	1.29x	1.33x	1.40x
22	Hydro One Electric	1.21x	0.67x	0.72x	0.63x	0.60x	0.63x	0.64x	0.63x
23	IDACORP, Inc.	1.25x	1.16x	0.83x	0.63x	0.56x	0.56x	0.54x	0.55x
24	MGE Energy	0.73x	0.87x	N/A	1.26x	1.10x	0.82x	0.81x	1.13x
25	NextEra Energy, Inc.	0.58x	0.69x	0.54x	0.59x	0.59x	0.60x	0.61x	0.69x
26	NorthWestern Corp	0.98x	0.82x	0.66x	0.75x	0.87x	0.86x	0.91x	0.98x
27	OGE Energy	1.43x	1.13x	0.99x	0.97x	0.99x	1.06x	1.11x	1.28x
28	Otter Tail Corp.	0.45x	1.42x	1.45x	1.08x	1.46x	1.47x	1.34x	1.17x
29	Pinnacle West Capital	0.98x	0.85x	0.78x	0.95x	0.74x	0.77x	0.80x	0.93x
30	TXNM Energy	0.59x	0.51x	0.63x	0.63x	0.53x	0.52x	0.53x	0.56x
31	Portland General	0.75x	0.97x	1.01x	0.58x	0.62x	0.71x	0.73x	0.87x
32	PPL Corp.	1.06x	1.12x	1.35x	0.98x	0.97x	1.00x	1.01x	1.06x
33	Public Serv. Enterprise	1.00x	1.05x	0.82x	0.87x	0.90x	0.90x	0.88x	0.97x
34	Sempra Energy	0.92x	0.78x	0.92x	0.96x	0.63x	0.59x	0.63x	0.69x
35	Southern Co.	1.01x	0.93x	0.97x	0.97x	0.90x	0.97x	1.01x	1.15x
36	WEC Energy Group	0.70x	0.75x	0.87x	0.92x	1.01x	1.09x	1.15x	1.35x
37	Xcel Energy Inc.	0.99x	0.86x	0.80x	0.92x	0.65x	0.61x	0.70x	0.90x
38	Average	0.88x	0.89x	0.90x	0.86x	0.85x	0.84x	0.86x	0.94x
39	Median	0.86x	0.86x	0.83x	0.84x	0.82x	0.86x	0.86x	0.95x

Source:

Notes:

Based on the projected Cash Flow per share and Capital Spending per share.

¹ Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

 $^{^{2}}$ The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

Electric Utilities (Valuation Metrics)

Percent Dividends to Book Value 1 20-Year 3-Year Averages 2025 2/a Line Company <u>Average</u> 2024 2023 2022 2021 2018-2020 2015-2017 2012-2014 2009-2011 2006-2008 (2) (4) (10)(11)(1) (3) (5) (6) (7) (8) (9) ALLETE 5.56% 5.83% 5.87% 5 59% 5 51% 5 52% 5.56% 5 47% 5 40% 6 44% 6.73% 2 Alliant Energy 6.45% 7.07% 7.04% 6.84% 6.84% 6.73% 6.75% 6 99% 6.43% 6.10% 5.25% 3 Ameren Corp. 6.05% 6 20% 6.26% 6 26% 5.88% 5 84% 5.82% 5.88% 5 87% 4 74% 7 85% 4 American Electric Power 6.43% 7.26% 7.05% 6.95% 6.80% 6.74% 6.75% 6.25% 5.94% 6.03% 6.28% 5 Avangrid, Inc. 3.15% N/A N/A 3.46% 3.51% 3.57% 3.57% 2.36% N/A N/A N/A 6 Avista Corp. 5.15% 5.81% 5.87% 5.78% 5 65% 5.61% 5.47% 5.38% 5.49% 4.91% 3 49% Black Hills 5.32% 5.24% 5.19% 5.30% 5.32% 5.32% 5.32% 5.63% 5.18% 5.18% 5.35% 8 CenterPoint Energy 8.88% 4.99% 4.95% 5.03% 4 90% 4 82% 7 96% 12 50% 8 41% 9.87% 12.21% q CMS Energy Corp. 6.82% 7.88% 7.69% 7.84% 7.89% 7.87% 8.58% 8.25% 7 96% 5.78% 1.81% 10 Consol Edison 5.89% 5.11% 5.24% 5 29% 5 42% 5 48% 5 50% 5 70% 5 91% 6.30% 7 04% 11.63% 11 Dominion Resources 9.99% 8 44% 8.66% 8.69% 8.54% 8 00% 11 14% 11 88% 9.35% 8 52% 12 DTE Energy 6.38% 7 55% 7 43% 7 25% 7 64% 8 64% 6.38% 6.08% 5 72% 5.56% 5 99% 13 Duke Energy 5 58% 6 44% 6 54% 6.37% 6 47% 6.34% 6 18% 5 73% 5.32% 5 73% 3 52% 14 Edison Int'l 5.96% 8.66% 8.76% 8.30% 9.24% 7.36% 7.09% 5.53% 4.48% 4.06% 4.46% 15 El Paso Electric 2 94% N/A N/A N/A N/A N/A 5.04% 4.64% 4 57% 1.16% 0.00% 16 Entergy Corp. 6.69% 6.66% 6.55% 6.32% 6.68% 6.72% 7.21% 7.31% 6.17% 6.65% 6.27% 17 Eversource Energy 5.28% 7.02% 6.97% 6 66% 5.74% 5 69% 5.57% 5.27% 4 77% 4 76% 4.14% 18 Evergy, Inc. 5.69% 5 94% 5.99% 5.90% 5.57% 5.41% 5.32% N/A N/A N/A N/A 6 19% 19 Exelon Corp. 6.90% 5 94% 5 67% 5 59% 5 42% 4 36% 4 45% 4 39% 10.30% 11.70% 8 00% 20 FirstEnergy Corp. 8 71% 7 87% 8 81% 8 78% 10 26% 12 46% 10 48% 5 79% 7 54% 7 20% 21 Fortis Inc. 5.45% 5 72% 5.72% 5 84% 5 95% 5 59% 5.17% 4 99% 5 54% 5 74% 5 31% 22 Great Plains Energy 5 31% N/A N/A N/A N/A N/A N/A 4 42% 3 95% 3 92% 8 94% 23 Hawaiian Elec 7.09% N/A N/A 5.07% 6.96% 6.22% 6.18% 6.62% 7.33% 7.88% 8.47% 24 Hvdro One Limited 2.42% 4 85% 4.47% 4 42% 4 57% 4.13% 4.57% 4.07% 0.00% 0.00% 0.00% 25 IDACORP, Inc. 4.76% 5.28% 5.43% 5.57% 5.48% 5.45% 5.23% 4.86% 4.23% 3.87% 4.49% 26 MGE Energy 6.01% 5.12% 5 22% 5.30% 5 32% N/A 5 47% 5.74% 6.02% 6.55% 7 29% 27 NextEra Energy, Inc. 6.89% 8 71% 8 46% 8.08% 8.61% 8.13% 6.78% 6.51% 6 40% 5 98% 6 24% 28 NorthWestern Corp 5 79% 5 57% 5.58% 5 63% 5 65% 5 73% 5 74% 5 77% 5.56% 6.07% 6.09% 7.47% 29 OGE Energy 6.90% 7.20% 7.35% 7.49% 8.04% 7.65% 6.53% 5.70% 6.28% 7.32% 30 Otter Tail Corp 6.81% 4.97% 4.69% 5.95% 5.61% 6.54% 7.18% 7.43% 8.06% 6.88% 6.59% 31 Pinnacle West Capital 6.21% 6.22% 6.26% 6.41% 6 40% 6.43% 6.31% 5.96% 6.37% 6.21% 6.00% 32 TXNM Energy 4.19% 5.73% 5.50% 5.72% 5.52% 3.88% 5.31% 4.23% 3.17% 2.68% 3.74% 33 Portland General 4 98% 5.81% 5 71% 5.73% 5.75% 5 61% 5.26% 4 79% 4 66% 4 87% 4 12% 34 PPL Corp. 8.19% 5.30% 5.40% 5.03% 4.66% 8.89% 9.81% 10.27% 7.57% 8.40% 8.78% Public Serv. Enterprise 35 7.02% 7.47% 7 42% 7 34% 7.82% 7.12% 6.26% 6 20% 6.36% 7 20% 8 36% 36 SCANA Corp. 6 44% N/A N/A N/A N/A N/A 6.04% 6 15% 6.61% 6 98% 5.56% 37 Sempra Energy 5 34% 5 46% 5 32% 5 41% 5 49% 6.31% 6.08% 5 67% 4 37% 4 09% 38 Southern Co. 9 55% 9 32% 9 58% 9 65% 9 67% 9.96% 9 65% 9 34% 9.36% 9 38% 9.88% 39 Vectren Corp. 7.71% N/A N/A N/A N/A N/A N/A 7.61% 7 54% 7.78% 7.90% WEC Energy Group 40 6.64% 8.77% 8 54% 8 38% 7 92% 7 83% 7.37% 6.76% 7 44% 5.13% 3 76% Westar Energy 41 5.71% N/A N/A N/A N/A N/A N/A 5.68% 5 69% 5.82% 5.65% Xcel Energy Inc. 6.21% 6.37% 6 44% 6.55% 6 43% 6.38% 6.38% 6 26% 5 87% 5.99% 6.16%

Sources:

Median

43 Average

6 41%

5.88%

6 44%

6.28%

6 54%

6.22%

6.39%

5.96%

6.01%

5.87%

5 95%

6.01%

6 10%

6.20%

6.37%

5.95%

6 26%

6.12%

6.51%

6.20%

6 47%

6.26%

Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.
Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

^a Based on the projected 2024 Dividend Declared per share and Book Value per share, published in The Value Line Investment Survey, April 18, May 9, and June 6, 2025.

Electric Utilities (Valuation Metrics)

Dividends to Earnings Ratio 1 20-Year 3-Year Averages 2025 2/a Line Company Average 2024 2023 2022 2021 2018-2020 2015-2017 2012-2014 2009-2011 2006-2008 (2) (3) (4) (5) (10)(1) (6) (7) (8) (9) (11)ALLETE 0.71 0.91 0.63 0.77 0.78 0.70 0.70 0.78 0.65 0.80 0.56 Alliant Energy 0.58 0.53 0.62 0.63 0.65 0.63 0.61 0.61 0.67 0.66 2 0.71 Ameren Corp 0.58 0.58 0.58 0.57 0.70 0.90 3 0.65 0.57 0.57 0.66 0.58 American Electric Power 0.61 0.64 0.64 0.64 0.62 0.60 0.65 0.60 0.62 0.60 0.54 5 Avangrid, Inc. 0.88 N/A N/A 0.84 0.76 0.89 0.87 0.95 N/A N/A N/A 0.70 0.83 0.82 0.83 0.80 0.70 0.69 0.74 0.59 0.57 6 Avista Corp. 0.77 0.62 Black Hills 1 02 0.66 0.66 0.64 0.61 0.61 0.57 0.58 0.98 2.96 CenterPoint Energy 0.70 0.52 0.51 0.56 0.45 0.70 0.93 0.94 0.65 0.70 0.53 8 0.65 CMS Energy Corp. 0.58 0.60 0.62 0.65 0.67 0.62 0.62 0.62 0.54 0.30 9 0.64 0.69 0.65 0.70 0.68 0.60 0.62 0.65 0.71 0.67 0.71 10 Consol. Edison Dominion Resources 0.88 0.79 0.96 1 34 0.65 0.79 1 53 0.83 0.76 0.67 0.59 11 DTE Energy 0.66 0.61 0.57 0.64 0.59 0.61 0.62 0.81 12 0.61 0.95 0.62 13 Duke Energy 0.79 0.66 0.70 0.73 0.76 0.79 0.86 0.84 0.79 0.76 0.80 0.06 0.33 14 Edison Int'l 0.49 0.58 0.65 0.63 1.78 1.35 0.47 0.39 0.34 El Paso Electric 0.50 N/A N/A N/A N/A 0.68 0.54 0.46 0.27 N/A 15 N/A 0.94 0.39 0.56 0.58 0.60 0.57 0.73 0.76 0.58 0.47 0.45 16 Entergy Corp. 0.49 17 Eversource Energy 0.63 0.62 0.62 0.68 0.63 0.61 0.63 0.61 0.60 0.63 N/A 0.68 0.68 0.78 0.71 0.57 N/A N/A N/A N/A 18 Evergy, Inc. 0.67 0.58 0.77 0.62 0.47 19 0.60 0.61 0.61 0.60 0.88 0.55 0.53 Exelon Corp. 20 FirstEnergy Corp. 0.77 0.70 0.65 0.63 0.65 0.58 1 01 0.64 1 09 0.84 0.49 0.73 0.74 0.78 0.80 0.71 0.81 0.68 0.60 21 Fortis Inc. 0.72 0.73 0.71 22 Great Plains Energy - 0.82 N/A N/A N/A N/A N/A N/A - 5.65 0.59 0.67 1.12 0.60 0.60 0.68 0.75 23 Hawaiian Elec. 0.82 N/A N/A 0.64 0.71 1.08 1.07 24 0.49 0.47 0.48 0.49 0.47 1.87 0.57 N/A N/A N/A Hydro One Limited 0.88 25 0.43 IDACORP Inc. 0.61 0.61 0.62 0.59 0.59 0.56 0.41 0.57 0.52 0.52 MGE Energy 0.52 26 0.56 0.53 0.51 N/A 0.55 0.56 0.51 0.61 0.63 0.51 27 0.85 0.53 NextEra Energy, Inc. 0.56 0.61 0.60 0.59 0.59 0.66 0.57 0.45 0.47 0.77 28 0.70 0.80 0.80 0.69 0.69 0.60 0.62 0.86 NorthWestern Corp 0.74 0.63 29 OGE Energy 0.61 0.74 0.77 0.80 0.73 0.69 0.70 0.66 0.45 0.49 0.54 0.93 2.48 30 0.26 0.25 0.24 0.37 0.64 0.75 0.81 Otter Tail Corp 0.92 0.34 0.64 31 Pinnacle West Capital 0.71 0.75 0.68 0.79 0.80 0.61 0.63 0.67 0.77 0.78 TXNM Energy 0.82 0.59 0.57 0.53 0.52 0.43 0.58 0.51 0.48 0.63 2 40 32 33 Portland General 0.64 0.79 0.65 0.63 0.72 0.57 0.65 0.56 0.63 0.63 0.58 0.60 34 PPL Corp. 0.59 0.61 0.59 0.62 0.72 0.64 0.77 0.50 0.76 3 13 Public Serv. Enterprise 35 0.56 0.55 0.44 0.50 0.56 0.63 0.65 0.66 0.62 0.80 0.55 36 SCANA Corp. 0.61 N/A N/A N/A N/A 0.57 0.59 0.65 0.64 N/A 1.10 0.65 0.57 37 0.57 0.53 0.52 0.50 0.38 0.29 0.54 0.65 Sempra Energy 0.75 0.78 0.74 0.75 38 Southern Co. 0.75 0.69 0.70 0.76 0.77 0.75 0.72 0.77 0.78 39 Vectren Corp. 0.75 N/A N/A N/A 0.65 0.80 N/A N/A N/A WEC Energy Group 0.68 0.65 0.66 0.66 0.44 40 0.57 0.68 0.67 0.69 0.56 0.35 41 Westar Energy 0.68 N/A N/A N/A N/A N/A N/A 0.67 0.60 0.78 0.66 Xcel Energy Inc. 0.60 0.62 0.62 0.62 0.63 0.62 0.62 0.58 0.63 0.66 0.62

Sources:

Average

43

44 Median

0.67

0.64

0.77

0.68

0.72

0.66

0.49

0.63

0.64

0.61

0.68

0.63

0.73

0.59

0.66

0.63

0.66

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0.64

Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.
Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

^b Based on the projected 2024 Dividends Declared per share and Earnings per share, published in The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

Electric Utilities (Valuation Metrics)

Cash Flow to Capital Spending Ratio ¹

3-Year Averages 2023 2022 2021 2018-2020 2015-2017 2012-2014 2009-2011 2006-2008

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALLETE	0.97	1.36	1.30	1.76	2.12	0.55	0.80	1.37	0.54	0.60	0.78
2	Alliant Energy	0.81	1.04	0.65	0.74	0.91	0.95	N/A	0.65	0.83	0.65	0.96
3	Ameren Corp.	0.86	0.88	0.83	0.78	0.71	0.62	0.74	0.75	0.91	1.16	0.95
4	American Electric Power	0.86	0.87	0.84	0.79	0.81	0.81	0.75	0.79	0.95	1.15	0.74
5	Avangrid, Inc.	0.71	N/A	N/A	0.66	0.79	0.56	0.68	0.77	N/A	N/A	N/A
6	Avista Corp.	0.89	0.95	0.85	0.88	0.73	0.88	0.86	0.79	0.82	1.02	1.02
7	Black Hills	0.68	0.67	0.68	0.95	0.86	0.61	0.67	0.84	0.72	0.47	0.55
8	CenterPoint Energy	0.93	0.52	0.54	0.53	0.52	0.73	0.85	1.09	1.25	1.00	1.07
9	CMS Energy Corp.	0.85	0.67	0.74	0.85	0.82	0.78	0.78	0.84	0.79	1.05	0.91
10	Consol. Edison	0.83	0.88	0.84	0.84	0.88	0.83	0.84	0.72	0.92	0.88	0.75
11	Dominion Resources	0.74	0.53	0.41	0.46	0.86	0.73	0.91	0.70	0.71	0.80	0.81
12	DTE Energy	0.97	0.90	0.87	0.85	0.86	0.74	0.80	0.90	0.97	1.37	1.03
13	Duke Energy	0.89	0.92	0.89	0.81	0.87	0.85	0.82	0.88	1.05	0.81	0.93
14	Edison Int'l	0.75	0.85	0.85	0.83	0.62	0.55	0.52	0.88	0.79	0.67	0.91
15	El Paso Electric	0.87	N/A	N/A	N/A	N/A	0.83	0.86	0.86	0.77	0.90	0.96
16	Entergy Corp.	0.94	0.73	0.72	1.03	0.62	0.74	0.76	0.97	1.03	1.14	1.07
17	Eversource Energy	0.83	0.74	0.76	0.54	0.89	0.80	0.80	0.86	0.96	0.94	0.70
18	Evergy, Inc.	0.91	0.92	0.93	0.90	0.78	1.03	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	1.16	0.83	0.81	0.82	0.84	1.09	1.12	0.88	0.99	1.50	1.77
20	FirstEnergy Corp.	0.97	0.64	0.77	0.82	0.98	0.83	0.80	0.96	0.77	1.20	1.42
21	Fortis Inc.	0.72	0.89	0.88	0.93	0.89	0.65	0.68	0.72	0.70	0.66	0.62
22	Great Plains Energy	0.79	N/A	N/A	N/A	N/A		N/A	0.95	0.85	0.80	0.56
23	Hawaiian Elec.	1.22	1.29	2.99	1.14	1.56	1.27	1.07	1.05	0.98	1.19	1.09
24	Hydro One Limited	0.87	0.63	0.60	0.63	0.72	1.21	0.96	0.97	N/A	N/A	N/A
25	IDACORP, Inc.	1.04	0.56	0.51	0.75	1.00	1.33	1.40	1.21	1.26	0.87	0.79
26	MGE Energy	1.06	0.82	0.97	0.98	1.12	0.82	0.82	1.41	1.10	1.42	0.75
27	NextEra Energy, Inc.	0.60	0.60	0.52	0.50	0.55	0.58	0.60	0.62	0.61	0.63	0.64
28	NorthWestern Corp	0.99	0.86	0.79	0.72	0.75	0.84	1.07	1.11	0.91	0.89	1.26
29	OGE Energy	0.93	1.06	1.02	1.03	0.87	1.24	1.27	1.00	0.84	0.61	0.74
30	Otter Tail Corp.	1.04	1.47	1.83	1.98	2.13	0.48	0.92	0.89	0.74	0.94	0.82
31	Pinnacle West Capital	0.92	0.77	0.70	0.73	0.89	0.91	1.00	0.83	0.93	0.98	1.04
32	TXNM Energy	0.68	0.52	0.51	0.55	0.63	0.72	0.77	0.66	0.77	0.76	0.58
33	Portland General	0.81	0.71	0.65	0.51	0.86	0.78	0.93	0.92	0.78	0.83	0.76
34	PPL Corp.	0.97	1.00	0.90	1.06	1.05	0.90	0.94	0.84	0.78	1.08	1.18
35	Public Serv. Enterprise	1.09	0.90	0.95	0.92	1.05	1.13	0.97	0.68	0.98	1.31	1.64
36	SCANA Corp.	0.86	N/A	N/A	N/A	N/A		N/A	0.78	0.84	0.83	0.98
37	Sempra Energy	0.78	0.59	0.59	0.61	0.92	0.77	0.81	0.68	0.77	0.88	0.90
38	Southern Co.	0.90	0.97	0.94	0.88	0.97	0.99	0.90	0.85	0.86	0.88	0.93
39	Vectren Corp.	1.00	N/A	N/A	N/A	N/A		N/A	0.88	1.06	1.11	0.93
40	WEC Energy Group	0.99	1.09	1.01	0.95	1.09	0.97	0.93	1.03	1.36	0.96	0.62
41	Westar Energy	0.72	N/A	N/A	N/A	N/A		N/A	0.80	0.70	0.76	0.61
42	Xcel Energy Inc.	0.75	0.61	0.66	0.75	0.93	0.66	0.74	0.75	0.68	0.83	0.79
43	Average	0.89	0.84	0.87	0.85	0.93	0.84	0.86	0.88	0.88	0.94	0.91
44	Median	0.84	0.86	0.82	0.82	0.87	0.81	0.83	0.86	0.84	0.89	0.91

Sources:

<u>Line</u>

20-Year

Company

Average 2025 2/a

2024

¹ Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021. Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

 $^{^{\}rm 2}$ The Value Line Investment Survey, May 9, June 6, and July 18, 2025. Notes:

 $^{^{\}circ}$ Based on the projected Cash Flow per share and Capital Spending per share published in The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

Natural Gas Utilities (Valuation Metrics)

			Price to Earnings (P/E) Ratio ¹ 0-Year 3-Year Averages													
		20-Year							3	-Year Average	s					
Line	<u>Company</u>	Average (1)	2025 ² (2)	2024 (3)	<u>2023</u> (4)	<u>2022</u> (5)	<u>2021</u> (6)	<u>2018-2020</u> (7)	<u>2015-2017</u> (8)	<u>2012-2014</u> (9)	<u>2009-2011</u> (10)	<u>2006-2008</u> (11)				
1	Atmos Energy	17.76	20.90	20.90	16.80	19.30	18.80	22.40	20.10	15.97	13.37	14.34				
2	Chesapeake Utilities	19.60	21.60	21.60	21.60	25.80	25.60	23.07	23.07	16.03	13.53	16.25				
3	New Jersey Resources	16.92	14.90	14.90	14.90	17.00	17.50	19.20	20.10	14.83	15.57	16.68				
4	NiSource Inc.	21.87	20.10	20.10	16.90	19.60	18.00	19.77	41.63	19.83	16.33	16.69				
5	Northwest Nat. Gas	19.90	13.70	13.70	15.40	19.60	19.50	27.50	25.30	20.40	17.07	16.88				
6	ONE Gas Inc.	20.28	17.30	17.30	16.00	19.90	18.90	23.37	22.00	17.80	N/A	N/A				
7	Southwest Gas	18.05	19.80	19.80	23.00	NMF	14.30	19.57	21.07	16.23	13.97	17.85				
8	Spire Inc.	18.24	17.40	17.40	14.50	17.50	13.60	30.20	18.63	18.53	13.37	14.03				
9	UGI Corp.	14.79	10.20	10.20	8.40	14.10	13.90	18.33	19.27	15.87	12.07	14.12				
10	Average	18.44	17.32	17.32	16.39	19.10	17.79	22.60	23.46	17.28	14.41	15.85				
11	Median	17.40	17.40	17.40	16.00	19.45	18.00	22.40	21.07	16.23	13.75	16.46				

						Market	Price to C	ash Flow (MP/	CF) Ratio ¹			
		20-Year							3	-Year Average	s	
Line	Company	<u>Average</u>	2025 ²	2024	2023	2022	2021	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008
		(1)	(2)	(3)	(4)	(5)	(6)	(22)	(23)	(24)	(25)	(26)
12	Atmos Energy	9.63	12.87	11.93	11.27	11.87	10.99	12.83	10.88	7.85	6.26	6.76
13	Chesapeake Utilities	11.03	13.39	14.44	15.77	14.21	14.20	12.91	12.00	8.28	7.73	8.62
14	New Jersey Resources	11.71	9.38	9.95	11.22	11.55	11.56	12.84	13.37	10.84	11.79	11.31
15	NiSource Inc.	7.93	9.38	7.98	7.13	8.13	7.89	8.52	10.35	9.03	5.32	6.14
16	Northwest Nat. Gas	11.61	6.34	6.96	7.56	8.76	8.57	11.66	26.92	8.98	8.76	8.37
17	ONE Gas Inc.	9.87	7.87	7.87	7.73	9.91	9.32	11.82	10.73	8.16	N/A	N/A
18	Southwest Gas	7.25	7.11	7.77	7.35	19.83	6.87	8.43	7.69	5.95	4.78	5.20
19	Spire Inc.	9.40	7.96	7.29	7.53	8.34	7.55	11.63	9.73	11.53	8.26	8.62
20	UGI Corp.	7.57	5.14	4.67	5.84	7.20	9.56	9.78	9.19	6.78	6.42	7.50
21	Average	9.47	8.83	8.76	9.04	11.09	9.61	11.16	12.32	8.60	7.42	7.82
22	Median	8.28	7.96	7.87	7.56	9.91	9.32	11.66	10.73	8.28	7.07	7.94

		Market Price to Book Value (MP/BV) Ratio ¹ 20-Year 3-Year Averages												
		20-Year							3	-Year Average	s			
Line	Company	Average	2025 ²	2024	2023	2022	2021	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008		
		(1)	(2)	(3)	(4)	(5)	(6)	(22)	(23)	(24)	(25)	(26)		
23	Atmos Energy	1.60	1.80	1.68	1.55	1.65	1.59	2.03	2.00	1.41	1.18	1.31		
24	Chesapeake Utilities	2.05	1.97	1.91	1.93	2.69	2.77	2.49	2.32	1.87	1.46	1.78		
25	New Jersey Resources	2.24	1.93	2.06	2.32	2.35	2.26	2.43	2.50	2.17	2.19	2.03		
26	NiSource Inc.	1.54	1.65	1.40	1.14	2.15	1.86	1.99	1.92	1.63	0.92	1.10		
27	Northwest Nat. Gas	1.75	1.15	1.15	1.29	1.51	1.45	2.23	1.99	1.62	1.73	1.90		
28	ONE Gas Inc.	1.61	1.38	1.32	1.43	1.73	1.57	2.01	1.61	1.07	N/A	N/A		
29	Southwest Gas	1.52	1.32	1.34	1.28	1.62	1.32	1.70	1.93	1.60	1.21	1.38		
30	Spire Inc.	1.52	1.31	1.25	1.29	1.43	1.47	1.69	1.57	1.40	1.51	1.69		
31	UGI Corp.	1.90	1.24	1.30	1.59	1.39	1.64	2.36	2.44	1.70	1.65	2.13		
32	Average	1.75	1.53	1.49	1.53	1.83	1.77	2.10	2.03	1.61	1.48	1.66		
33	Median	1.66	1.38	1.34	1.43	1.65	1.59	2.03	1.99	1.62	1.49	1.73		

Sources:

The current year P/E ratio is based on the forward P/E (price over expected earnings per share). All historical year P/E ratios are based on annual average share price over achieved earnings per share.

¹ Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021. Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 23, 2025.

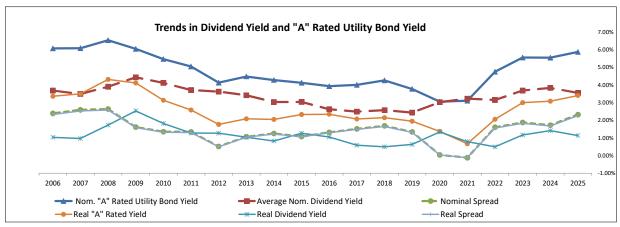
Notes:

^a Based on the average of the high and low price for year and the projected Cash Flow per share, published in The Value Line Investment Survey.

b Based on the average of the high and low price for the year and the projected Book Value per share, published in The Value Line Investment Survey.

Natural Gas Utilities (Valuation Metrics)

	Dividend Yield ¹											
		20-Year							3	-Year Average	es	
Line	<u>Company</u>	Average	2025 ^{2/a}	2024	2023	2022	2021	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Atmos Energy	3.25%	2.29%	2.45%	2.62%	2.46%	2.63%	2.17%	2.51%	3.59%	4.74%	4.53%
2	Chesapeake Utilities	2.59%	2.10%	2.12%	2.08%	1.61%	1.50%	1.77%	1.93%	2.85%	3.79%	3.83%
3	New Jersey Resources	3.27%	3.76%	3.75%	3.29%	3.25%	3.50%	2.86%	2.90%	3.53%	3.49%	3.19%
4	NiSource Inc.	3.87%	2.91%	3.34%	3.85%	3.33%	3.60%	3.12%	3.03%	3.28%	5.94%	4.73%
5	Northwest Nat. Gas	3.74%	4.76%	4.93%	4.40%	3.86%	3.90%	3.06%	3.43%	4.06%	3.73%	3.37%
6	ONE Gas Inc.	2.88%	3.60%	3.87%	3.72%	3.08%	3.21%	2.47%	2.47%	2.28%	N/A	N/A
7	Southwest Gas	3.05%	3.45%	3.60%	4.07%	3.20%	3.65%	2.87%	2.65%	2.72%	3.32%	2.78%
8	Spire Inc.	3.89%	4.33%	4.65%	4.44%	3.89%	3.79%	3.15%	3.24%	3.95%	4.31%	4.24%
9	UGI Corp.	3.22%	4.75%	5.75%	4.64%	3.61%	3.25%	2.60%	2.29%	3.10%	3.34%	2.83%
10	Average	3.35%	3.55%	3.83%	3.68%	3.14%	3.23%	2.67%	2.72%	3.26%	4.08%	3.69%
11	Median	3.46%	3.60%	3.75%	3.85%	3.25%	3.50%	2.86%	2.65%	3.28%	3.76%	3.60%
12	30-Yr Treasury Yields	3.50%	4.79%	4.41%	4.09%	3.11%	2.06%	2.42%	2.78%	3.24%	4.08%	4.67%
13	20-Yr Treasury Yields ³	3.39%	4.81%	4.50%	4.25%	3.30%	1.98%	2.26%	2.47%	2.91%	3.92%	4.75%
14	20-Yr TIPS ³	1.18%	2.36%	2.06%	1.73%	0.64%	-0.43%	0.41%	0.73%	0.61%	1.71%	2.28%
15	Implied Inflation ^b	2.18%	2.39%	2.39%	2.48%	2.64%	2.42%	1.84%	1.73%	2.29%	2.17%	2.42%
16	Real Dividend Yield ^c	1.14%	1.13%	1.40%	1.17%	0.49%	0.79%	0.82%	0.97%	0.95%	1.87%	1.24%
	Utility	_										
17	Nominal "A" Rated Yield ⁴	4.80%	5.87%	5.54%	5.55%	4.74%	3.10%	3.69%	4.01%	4.29%	5.51%	6.22%
18	Real "A" Rated Yield	2.56%	3.40%	3.08%	2.99%	2.05%	0.67%	1.82%	2.24%	1.96%	3.27%	3.72%
	Spreads (Utility Bond - Stock)	_										
19	Nominal ^d	1.45%	2.32%	1.71%	1.87%	1.60%	-0.12%	1.02%	1.30%	1.03%	1.43%	2.54%
20	Real ^e	1.42%	2.26%	1.67%	1.82%	1.56%	-0.12%	1.00%	1.28%	1.01%	1.40%	2.48%
	Spreads (Treasury Bond - Stock)											
21	Nominal ^f	0.04%	1.25%	0.67%	0.57%	0.16%	-1.25%	-0.42%	-0.24%	-0.35%	-0.16%	1.07%
22	Real ^g	0.04%	1.23%	0.66%	0.56%	0.15%	-1.22%	-0.41%	-0.24%	-0.34%	-0.16%	1.04%
	Spreads (30-Yr Treasury Bond - Stock)											
23	Nominal ^h	0.15%	1.24%	0.58%	0.41%	-0.03%	-1.17%	-0.26%	0.06%	-0.03%	0.00%	0.98%



¹ Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 23, 2025.

³ St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.

 $^{^{\}rm 4}$ Mergent Bond Record, through June 30, 2025.

a Based on the average of the high and low price for the year and the projected Dividends Declared per share published in the Value Line Investment Survey.

b Line 15 = (1 + Line 13) / (1 + Line 14) - 1.

^c Line 16 = (1 + Line 10) / (1 +Line 15) - 1.

The spread being measured here is the nominal A-rated utility bond yield over the average nominal utility dividend yield; (Line 17 - Line 10).

The spread being measured here is the real A-rated utility bond yield over the average real utility dividend yield; Line 18 - Line 16)

The spread being measured here is the nominal 20-Year Treasury yield over the average nominal utility dividend yield; (Line 13 - Line 10).

The spread being measured here is the real 20-Year TIPS yield over the average real utility dividend yield; Line 14 - Line 16)

Natural Gas Utilities (Valuation Metrics)

Dividend per Share¹

								D.V.ao.ia	po. o.i.a.o					
		20-Year							3	-Year Average	es		2018	2017
Line	Company	Average	2025 ²	2024	2023	2022	<u>2021</u>	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008	CAGR	CAGR
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Atmos Energy	1.92	3.48	3.22	2.96	2.72	2.50	2.11	1.68	1.42	1.34	1.28	2.01%	2.05%
2	Chesapeake Utilities	1.37	2.65	2.46	2.25	2.03	1.84	1.54	1.19	1.01	0.87	0.79	2.73%	2.82%
3	New Jersey Resources	1.02	1.80	1.71	1.56	1.45	1.36	1.19	0.98	0.81	0.67	0.51	3.51%	4.00%
4	NiSource Inc.	0.90	1.12	1.06	1.00	0.94	0.88	0.81	0.72	0.98	0.92	0.92	-0.82%	-1.69%
5	Northwest Nat. Gas	1.79	1.96	1.95	1.94	1.93	1.92	1.90	1.87	1.82	1.68	1.45	1.09%	1.34%
6	ONE Gas Inc.	1.99	2.68	2.64	2.60	2.48	2.32	2.00	1.43	0.84	N/A	N/A	2.27%	2.31%
7	Southwest Gas	1.69	2.48	2.48	2.48	2.48	2.38	2.18	1.80	1.32	1.00	0.86	4.24%	5.05%
8	Spire Inc.	2.08	3.14	3.02	2.88	2.74	2.60	2.37	1.97	1.71	1.57	1.45	2.07%	2.17%
9	UGI Corp.	0.95	1.50	1.50	1.47	1.41	1.35	1.16	0.93	0.75	0.60	0.48	3.57%	4.12%
10	Average	1.48	2.31	2.23	2.13	2.02	1.91	1.70	1.40	1.18	1.08	0.97	2.30%	2.46%
11	Industry Average Growth	4.88%	3.84%	4.70%	5.28%	6.01%	5.54%	6.64%	6.41%	3.16%	4.06%	3.28%		

Sources:

¹ Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021. Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 23, 2025.

Natural Gas Utilities (Valuation Metrics)

Earnings per Share¹

							Laiiiii	go per onare				
		20-Year							3	-Year Average	es	
Line	<u>Company</u>	<u>Average</u>	2025 ²	2024	<u>2023</u>	2022	<u>2021</u>	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Atmos Energy	3.70	7.30	6.83	6.10	5.60	5.12	4.36	3.36	2.52	2.13	1.98
2	Chesapeake Utilities	3.03	5.70	5.26	4.73	4.97	4.70	3.79	2.74	2.24	1.72	1.28
3	New Jersey Resources	1.85	3.30	2.95	2.70	2.50	2.16	2.25	1.71	1.60	1.24	1.02
4	NiSource Inc.	1.26	1.90	1.75	1.60	1.47	1.35	1.31	0.67	1.54	0.98	1.21
5	Northwest Nat. Gas	2.21	3.00	2.33	2.59	2.54	2.50	2.27	0.71	2.21	2.65	2.56
6	ONE Gas Inc.	3.39	4.30	3.91	4.14	4.08	3.85	3.48	2.64	2.07	N/A	N/A
7	Southwest Gas	2.89	3.50	2.76	2.13	3.10	3.80	3.92	3.24	2.99	2.21	1.77
8	Spire Inc.	3.14	4.05	4.19	3.85	3.95	4.96	3.10	3.28	2.39	2.74	2.44
9	UGI Corp.	2.10	3.40	3.06	2.84	2.90	2.96	2.56	2.12	1.56	1.51	1.20
10	Average	2.55	4.05	3.67	3.41	3.46	3.49	3.00	2.27	2.12	1.90	1.68
11	Industry Average Growth	5.51%	10.32%	7.69%	-1.38%	-0.92%	18.27%	14.40%	-2.65%	5.77%	3.58%	3.74%

Sources

¹ Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021. Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

² The Value Line Investment Survey, May 23, 2025.

Natural Gas Utilities (Valuation Metrics)

Cash Flow / Capital Spending¹ 3 - 5 yr² 2026² Line Company 2020 2021 2022 2023 2024 2025 **Projection** (2) (3) (4) (5) (6) (7) (8) (9) Atmos Energy 0.53x 0.53x 0.54x 0.54x 0.55x 0.52x 0.55x 0.68x Chesapeake Utilities 0.64x 0.82x 1.23x 0.84x 0.61x 0.63x 0.67x 0.92x New Jersey Resources 0.65x0.72x0.59x 0.68x 1.03x 0.93x0.90x0.93xNiSource Inc. 0.55x 0.69x 0.76x 0.65x 0.69x 0.43x 0.54x 0.75x Northwest Nat. Gas 0.61x 0.60x 0.68x 0.63x 0.68x 0.67x 0.65x 0.75x ONE Gas Inc. 0.88x 0.86x 0.74x 0.83x 0.81x 0.81x 0.85x 0.99x Southwest Gas 0.53x0.61x 0.31x 0.84x 0.76x 0.81x 0.83x 0.90xSpire Inc. 0.65x 0.70x 0.80x 0.71x 0.64x 0.65x 0.66x 0.85x UGI Corp. 1.66x 1.42x 1.56x 1.45x 1.56x 1.54x 1.33x 1.24x 0.76x 0.75x 0.76x 0.76x 0.81x 0.91x 10 Average 0.80x 0.81x 11 Median 0.65x0.70x0.60x 0.71x 0.64x 0.75x 0.69x 0.90x

Sources

Notes:

Based on the projected Cash Flow per share and Capital Spending per share.

¹ The Value Line Investment Survey, various report dates.

² The Value Line Investment Survey, May 23, 2025.

Natural Gas Utilities (Valuation Metrics)

Percent Dividends to Book Value ¹

		20-Year						3-Year Averages				
<u>Line</u>	Company	Average (1)	2025 ^{2/a} (2)	2024 (3)	2023 (4)	<u>2022</u> (5)	<u>2021</u> (6)	<u>2018-2020</u> (7)	2015-2017 (8)	<u>2012-2014</u> (9)	<u>2009-2011</u> (10)	<u>2006-2008</u> (11)
1	Atmos Energy	4.90%	4.13%	4.11%	4.04%	4.07%	4.19%	4.38%	4.97%	5.00%	5.53%	5.94%
2	Chesapeake Utilities	4.99%	4.14%	4.05%	4.01%	4.32%	4.15%	4.38%	4.45%	5.27%	5.50%	6.77%
3	New Jersey Resources	7.27%	7.27%	7.73%	7.65%	7.63%	7.92%	6.77%	7.21%	7.64%	7.63%	6.45%
4	NiSource Inc.	5.52%	4.81%	4.67%	4.40%	7.15%	6.69%	6.20%	5.81%	5.23%	5.22%	5.11%
5	Northwest Nat. Gas	6.36%	5.47%	5.66%	5.69%	5.83%	5.66%	6.81%	6.70%	6.58%	6.48%	6.37%
6	ONE Gas Inc.	4.57%	4.99%	5.09%	5.32%	5.31%	5.04%	4.94%	3.92%	2.44%	N/A	N/A
7	Southwest Gas	4.53%	4.57%	4.83%	5.20%	5.17%	4.80%	4.85%	5.07%	4.35%	3.92%	3.79%
8	Spire Inc.	5.85%	5.66%	5.83%	5.73%	5.58%	5.56%	5.31%	5.07%	5.52%	6.46%	7.16%
9	UGI Corp.	5.78%	5.89%	7.46%	7.35%	5.02%	5.34%	5.92%	5.55%	5.19%	5.51%	6.03%
10	Average	5.58%	5.21%	5.49%	5.49%	5.57%	5.48%	5.51%	5.42%	5.25%	5.78%	5.95%
11	Median	5.31%	4.99%	5.09%	5.32%	5.31%	5.34%	5.31%	5.07%	5.23%	5.52%	6.20%
							Dividends	to Earnings Ra	tio ¹			
		20-Year					Dividonao	to Lummigo ita		S-Year Average	es	
Line	Company	Average	2025 ^{2/a}	2024	2023	2022	2021	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008
	<u></u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
12	Atmos Energy	0.55	0.48	0.47	0.49	0.49	0.49	0.49	0.50	0.57	0.63	0.65
13	Chesapeake Utilities	0.47	0.46	0.47	0.48	0.41	0.39	0.41	0.43	0.45	0.51	0.62
14	New Jersey Resources	0.55	0.55	0.58	0.58	0.58	0.63	0.54	0.58	0.52	0.54	0.53
15	NiSource Inc.	0.79	0.59	0.61	0.63	0.64	0.65	0.62	1.25	0.64	0.95	0.77
16	Northwest Nat. Gas	0.66	0.65	0.84	0.75	0.76	0.77	0.84	0.29	0.83	0.64	0.57
17	ONE Gas Inc.	0.57	0.62	0.68	0.63	0.61	0.60	0.57	0.54	0.41	N/A	N/A
18	Southwest Gas	0.59	0.71	0.90	1.16	0.80	0.63	0.56	0.56	0.44	0.46	0.50
19	Spire Inc.	0.69	0.78	0.72	0.75	0.69	0.52	0.97	0.60	0.73	0.58	0.59
20	UGI Corp.	0.45	0.44	0.49	0.52	0.49	0.46	0.46	0.44	0.49	0.40	0.40
21	Average	0.59	0.59	0.64	0.66	0.61	0.57	0.61	0.58	0.57	0.59	0.58
-:									2.00			

			Cash Flow to Capital Spending Ratio ¹									
		20-Year							3	-Year Average	s	
Line	Company	Average	2025 2/a	2024	2023	2022	2021	2018-2020	2015-2017	2012-2014	2009-2011	2006-2008
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
23	Atmos Energy	0.64	0.52	0.58	0.53	0.54	0.58	0.53	0.60	0.60	0.74	0.86
24	Chesapeake Utilities	0.75	0.63	0.52	0.81	1.23	0.81	0.60	0.51	0.72	1.12	0.70
25	New Jersey Resources	1.17	0.93	0.87	0.82	0.59	0.62	0.69	0.66	1.58	1.60	1.97
26	NiSource Inc.	0.74	0.75	0.71	0.61	0.55	0.68	0.62	0.51	0.59	0.97	1.14
27	Northwest Nat. Gas	0.88	0.68	0.65	0.67	0.60	0.68	0.69	0.76	1.05	0.97	1.30
28	ONE Gas Inc.	0.83	0.81	0.74	0.77	0.74	0.86	0.85	0.88	0.79	N/A	N/A
29	Southwest Gas	0.81	0.81	0.67	0.68	0.31	0.86	0.59	0.78	0.98	1.16	0.78
30	Spire Inc.	0.99	0.65	0.60	0.69	0.80	0.75	0.54	0.87	0.90	1.69	1.45
31	UGI Corp.	1.46	1.56	1.52	1.18	1.42	1.32	1.48	1.37	1.46	1.39	1.68
32	Average	0.93	0.81	0.76	0.75	0.75	0.80	0.73	0.77	0.96	1.20	1.23
33	Median	0.84	0.75	0.67	0.69	0.60	0.75	0.62	0.76	0.90	1.14	1.22

0.61

0.60

0.56

0.54

0.52

0.56

0.58

Sources

22 Median

0.58

0.59

0.61

0.63

Notes

¹ Data for years 2019 and prior were retrieved from the Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

Data for the years 2020 - 2024 was retrieved from Value Line Investment Surveys.

 $^{^{2}\,}$ The Value Line Investment Survey, May 23, 2025.

^a Based on the projected Dividends Declared per share and Book Value per share, published in The Value Line Investment Survey.

^b Based on the projected Dividends Declared per share and Earnings per share, published in The Value Line Investment Survey.

^c Based on the projected Cash Flow per share and Capital Spending per share, published in The Value Line Investment Survey.

Proxy Group

		Credit	Ratings ¹	Common	Equity Ratios
Line	Company	S&P	Moody's	MI ¹	Value Line ²
		(1)	(2)	(3)	(4)
1	Atmos Energy Corporation	A-	A2	59.9%	60.7%
2	New Jersey Resources Corporation	N/A	A1	38.4%	43.3%
3	NiSource Inc.	BBB+	Baa2	35.2%	46.0%
4	Northwest Natural Holding Company	A-	N/A	41.4%	45.2%
5	ONE Gas, Inc.	A-	A3	48.1%	56.5%
6	Southwest Gas Holdings, Inc.	BBB-	Baa2	39.5%	45.9%
7	Spire Inc.	BBB+	Baa2	37.4%	43.1%
8	Alliant Energy Corporation	BBB+	Baa2	39.7%	44.7%
9	Ameren Corporation	BBB+	Baa1	39.0%	45.3%
10	American Electric Power Company, Inc.	BBB+	Baa2	36.9%	42.4%
11	Duke Energy Corporation	BBB+	Baa2	35.9%	38.9%
12	Edison International	BBB	Baa2	25.1%	27.1%
13	Entergy Corporation	BBB+	Baa2	33.7%	36.0%
14	Evergy, Inc.	BBB+	Baa2	41.1%	48.5%
15	IDACORP, Inc.	BBB	Baa2	52.0%	52.2%
16	NorthWestern Corporation	BBB	Baa2	48.0%	51.4%
17	OGE Energy Corp.	BBB+	Baa1	45.5%	49.2%
18	Pinnacle West Capital Corporation	BBB+	Baa2	37.7%	45.6%
19	Portland General Electric Company	BBB+	A3	42.5%	45.0%
20	The Southern Company	A-	Baa1	32.3%	36.8%
21	Xcel Energy Inc.	BBB+	Baa1	39.2%	41.7%
22	Average Gas	BBB+	А3	42.9%	48.7%
23	Average Electric	BBB+	Baa2	39.2%	43.2%
24	Average Combined	BBB+	Baa1	40.4%	45.0%
25	KU/LG&E	A - ³	A3 ³		52.9%4

Sources

¹ S&P Global Market Intelligence, Downloaded on July 18, 2025.

² The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

³ S&P Capital IQ

⁴ Direct Testimony of Dylan W. D'Ascendis, page 16.

Consensus Analysts' Growth Rates

		Za	cks		ΛI	I/B/	E/S	Average of
		Estimated	Number of	Estimated	Number of	Estimated	Number of	Growth
Line	Company	Growth %1	Estimates	Growth %2	Estimates	Growth %3	Estimates	Rates
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Atmos Energy Corporation	7.19%	N/A	7.08%	2	7.30%	N/A	7.19%
2	New Jersey Resources Corporation	N/A	N/A	7.90%	2	N/A	N/A	7.90%
3	NiSource Inc.	7.88%	N/A	7.96%	4	7.70%	N/A	7.85%
4	Northwest Natural Holding Company	N/A	N/A	5.75%	2	N/A	N/A	5.75%
5	ONE Gas, Inc.	5.56%	N/A	5.84%	2	N/A	N/A	5.70%
6	Southwest Gas Holdings, Inc.	10.51%	N/A	10.74%	4	13.70%	N/A	11.65%
7	Spire Inc.	6.54%	N/A	8.08%	1	N/A	N/A	7.31%
8	Alliant Energy Corporation	6.59%	N/A	6.67%	4	6.45%	N/A	6.57%
9	Ameren Corporation	7.86%	N/A	7.60%	6	8.90%	N/A	8.12%
10	American Electric Power Company, Inc.	6.43%	N/A	6.82%	4	6.60%	N/A	6.62%
11	Duke Energy Corporation	6.33%	N/A	6.36%	5	6.40%	N/A	6.36%
12	Edison International	7.00%	N/A	8.90%	2	10.40%	N/A	8.77%
13	Entergy Corporation	9.46%	N/A	8.88%	2	9.65%	N/A	9.33%
14	Evergy, Inc.	5.73%	N/A	5.70%	5	6.00%	N/A	5.81%
15	IDACORP, Inc.	8.12%	N/A	8.55%	3	7.90%	N/A	8.19%
16	NorthWestern Corporation	6.87%	N/A	5.73%	5	6.90%	N/A	6.50%
17	OGE Energy Corp.	6.32%	N/A	6.74%	4	5.60%	N/A	6.22%
18	Pinnacle West Capital Corporation	2.12%	N/A	5.25%	4	2.20%	N/A	3.19%
19	Portland General Electric Company	3.35%	N/A	4.95%	6	3.46%	N/A	3.19%
20	The Southern Company	6.77%	N/A N/A	6.97%	3	6.90%	N/A N/A	6.88%
21	Xcel Energy Inc.	7.52%	N/A N/A	7.95%	3 7	8.80%	N/A N/A	8.09%
21	Acei Energy Inc.	7.52%	N/A	7.95%	,	0.00%	N/A	0.09%
22	Average Gas	7.54%	N/A	7.62%	4	9.57%	N/A	7.62%
23	Average Electric	6.46%	N/A	6.93%	4	6.87%	N/A	6.75%
24	Average Combined	6.74%	N/A	7.16%	4	7.34%	N/A	7.04%

Sources

¹ Zacks, http://www.zacks.com/, downloaded on July 18, 2025.

² S&P Global Market Intelligence, https://platform.mi.spglobal.com, downloaded on July 18, 2025.

³ LSEG Workspace, https://www.lseg.com/en/data-analytics/products/workspace, downloaded on July 18, 2025

Constant Growth DCF Model (Consensus Analysts' Growth Rates)

<u>Line</u>	<u>Company</u>	13-Week AVG <u>Stock Price¹</u> (1)	Analysts' <u>Growth²</u> (2)	Annualized <u>Dividend³</u> (3)	Nominal <u>Yield</u> (4)	Adjusted <u>Yield</u> (5)	Constant Growth DCF (6)
1	Atmos Energy Corporation	\$155.40	7.19%	\$3.48	2.24%	2.40%	9.59%
2	New Jersey Resources Corporation	\$46.21	7.90%	\$1.80	3.89%	4.20%	12.10%
3	NiSource Inc.	\$39.37	7.85%	\$1.12	2.84%	3.07%	10.91%
4	Northwest Natural Holding Company	\$41.29	5.75%	\$1.96	4.75%	5.02%	10.77%
5	ONE Gas, Inc.	\$74.47	5.70%	\$2.68	3.60%	3.80%	9.50%
6	Southwest Gas Holdings, Inc.	\$73.10	11.65%	\$2.48	3.39%	3.79%	15.44%
7	Spire Inc.	\$74.28	7.31%	\$3.14	4.23%	4.54%	11.85%
8	Alliant Energy Corporation	\$61.27	6.57%	\$1.92	3.13%	3.34%	9.91%
9	Ameren Corporation	\$96.45	8.12%	\$2.84	2.94%	3.18%	11.30%
10	American Electric Power Company, Inc.	\$103.73	6.62%	\$3.72	3.59%	3.82%	10.44%
11	Duke Energy Corporation	\$117.56	6.36%	\$4.18	3.56%	3.78%	10.15%
12	Edison International	\$53.63	8.77%	\$3.31	6.17%	6.71%	15.48%
13	Entergy Corporation	\$82.50	9.33%	\$2.40	2.91%	3.18%	12.51%
14	Evergy, Inc.	\$67.43	5.81%	\$2.67	3.96%	4.19%	10.00%
15	IDACORP, Inc.	\$115.74	8.19%	\$3.44	2.97%	3.22%	11.41%
16	NorthWestern Corporation	\$54.17	6.50%	\$2.64	4.87%	5.19%	11.69%
17	OGE Energy Corp.	\$44.30	6.22%	\$1.69	3.80%	4.04%	10.26%
18	Pinnacle West Capital Corporation	\$90.87	3.19%	\$3.58	3.94%	4.07%	7.26%
19	Portland General Electric Company	\$41.43	3.92%	\$2.10	5.07%	5.27%	9.19%
20	The Southern Company	\$90.22	6.88%	\$2.96	3.28%	3.51%	10.39%
21	Xcel Energy Inc.	\$69.06	8.09%	\$2.28	3.30%	3.57%	11.66%
22	Average Gas	\$72.02	7.62%	\$2.38	3.56%	3.83%	11.45%
23	Median Gas	\$73.10	7.31%	\$2.48	3.60%	3.80%	10.91%
24	Average Electric	\$77.74	6.75%	\$2.84	3.82%	4.08%	10.83%
25	Median Electric	\$75.78	6.59%	\$2.76	3.57%	3.80%	10.41%
26	Average Combined	\$75.83	7.04%	\$2.69	3.74%	3.99%	11.04%
27	Median Combined	\$73.10	6.88%	\$2.67	3.59%	3.80%	10.77%

Sources:

¹ S&P Global Intelligence, Downloaded on July 18, 2025.

² Exhibit MPG-4.

³ The Value Line Investment Survey , May 9, June 6, and July 18, 2025.

Payout Ratios

		Dividend	s Per Share	Earnings Per Share		Payo	ut Ratio
<u>Line</u>	<u>Company</u>	2024	Projected	2024	Projected	2024	Projected
		(1)	(2)	(3)	(4)	(5)	(6)
1	Atmos Energy Corporation	\$3.22	\$4.45	\$6.83	\$9.35	47.1%	47.6%
2	New Jersey Resources Corporation	\$1.71	\$2.20	\$2.95	\$3.90	58.0%	56.4%
3	NiSource Inc.	\$1.06	\$1.44	\$1.75	\$2.55	60.6%	56.5%
4	Northwest Natural Holding Company	\$1.95	\$2.00	\$2.33	\$3.45	83.7%	58.0%
5	ONE Gas, Inc.	\$2.64	\$2.90	\$3.91	\$5.25	67.5%	55.2%
6	Southwest Gas Holdings, Inc.	\$2.48	\$3.00	\$2.76	\$5.00	89.9%	60.0%
7	Spire Inc.	\$3.02	\$3.70	\$4.19	\$5.25	72.1%	70.5%
8	Alliant Energy Corporation	\$1.92	\$2.43	\$2.69	\$4.25	71.4%	57.2%
9	Ameren Corporation	\$2.68	\$3.57	\$4.59	\$6.60	58.4%	54.1%
10	American Electric Power Company, Inc.	\$3.57	\$4.31	\$5.61	\$7.70	63.6%	56.0%
11	Duke Energy Corporation	\$4.14	\$5.00	\$5.90	\$8.00	70.2%	62.5%
12	Edison International	\$3.17	\$4.15	\$4.91	\$7.00	64.6%	59.3%
13	Entergy Corporation	\$2.30	\$3.00	\$2.45	\$4.20	93.9%	71.4%
14	Evergy, Inc.	\$2.60	\$3.25	\$3.80	\$5.05	68.4%	64.4%
15	IDACORP, Inc.	\$3.35	\$4.20	\$5.50	\$7.10	60.9%	59.2%
16	NorthWestern Corporation	\$2.60	\$2.80	\$3.27	\$4.35	79.5%	64.4%
17	OGE Energy Corp.	\$1.68	\$1.79	\$2.19	\$2.95	76.7%	60.7%
18	Pinnacle West Capital Corporation	\$3.55	\$4.00	\$5.24	\$6.45	67.7%	62.0%
19	Portland General Electric Company	\$1.98	\$2.58	\$3.14	\$4.00	63.1%	64.5%
20	The Southern Company	\$2.86	\$3.10	\$4.06	\$5.60	70.4%	55.4%
21	Xcel Energy Inc.	\$2.19	\$3.00	\$3.50	\$5.00	62.6%	60.0%
22	Average Gas	\$2.30	\$2.81	\$3.53	\$4.96	68.4%	57.7%
23	Average Electric	\$2.76	\$3.37	\$4.06	\$5.59	69.4%	60.8%
24	Average Combined	\$2.60	\$3.18	\$3.88	\$5.38	69.1%	59.8%

Source:

The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

Sustainable Growth Rate

						3 to 5 Yea	ar Projections					Sustainable
		Dividends	Earnings	Book Value	Book Value		Adjustment	Adjusted	Payout	Retention	Internal	Growth
Line	Company	Per Share	Per Share	Per Share	Growth	ROE	Factor	ROE	Ratio	Rate	Growth Rate	Rate
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Atmos Energy Corporation	\$4.45	\$9.35	\$97.30	4.44%	9.61%	1.02	9.82%	47.59%	52.41%	5.15%	8.66%
2	New Jersey Resources Corporation	\$2.20	\$3.90	\$27.65	4.56%	14.10%	1.02	14.42%	56.41%	43.59%	6.29%	7.47%
3	NiSource Inc.	\$1.44	\$2.55	\$25.70	2.50%	9.92%	1.01	10.04%	56.47%	43.53%	4.37%	6.02%
4	Northwest Natural Holding Company	\$2.00	\$3.45	\$40.40	3.24%	8.54%	1.02	8.68%	57.97%	42.03%	3.65%	4.53%
5	ONE Gas, Inc.	\$2.90	\$5.25	\$56.60	1.77%	9.28%	1.01	9.36%	55.24%	44.76%	4.19%	5.57%
6	Southwest Gas Holdings, Inc.	\$3.00	\$5.00	\$58.65	2.68%	8.53%	1.01	8.64%	60.00%	40.00%	3.46%	3.83%
7	Spire Inc.	\$3.70	\$5.25	\$57.80	2.20%	9.08%	1.01	9.18%	70.48%	29.52%	2.71%	4.67%
8	Alliant Energy Corporation	\$2.43	\$4.25	\$31.90	3.17%	13.32%	1.02	13.53%	57.18%	42.82%	5.79%	5.82%
9	Ameren Corporation	\$3.57	\$6.60	\$52.65	4.24%	12.54%	1.02	12.80%	54.09%	45.91%	5.87%	7.53%
10	American Electric Power Company, Inc.	\$4.31	\$7.70	\$60.90	3.76%	12.64%	1.02	12.88%	55.97%	44.03%	5.67%	6.33%
11	Duke Energy Corporation	\$5.00	\$8.00	\$76.50	3.85%	10.46%	1.02	10.65%	62.50%	37.50%	4.00%	4.08%
12	Edison International	\$4.15	\$7.00	\$50.00	6.68%	14.00%	1.03	14.45%	59.29%	40.71%	5.88%	6.14%
13	Entergy Corporation	\$3.00	\$4.20	\$43.45	4.35%	9.67%	1.02	9.87%	71.43%	28.57%	2.82%	4.68%
14	Evergy, Inc.	\$3.25	\$5.05	\$47.50	1.81%	10.63%	1.01	10.73%	64.36%	35.64%	3.82%	3.82%
15	IDACORP, Inc.	\$4.20	\$7.10	\$72.25	3.20%	9.83%	1.02	9.98%	59.15%	40.85%	4.08%	4.73%
16	NorthWestern Corporation	\$2.80	\$4.35	\$53.55	2.82%	8.12%	1.01	8.24%	64.37%	35.63%	2.93%	3.07%
17	OGE Energy Corp.	\$1.79	\$2.95	\$26.25	2.80%	11.24%	1.01	11.39%	60.68%	39.32%	4.48%	4.48%
18	Pinnacle West Capital Corporation	\$4.00	\$6.45	\$70.20	4.36%	9.19%	1.02	9.38%	62.02%	37.98%	3.56%	4.15%
19	Portland General Electric Company	\$2.58	\$4.00	\$42.25	4.02%	9.47%	1.02	9.65%	64.50%	35.50%	3.43%	3.79%
20	The Southern Company	\$3.10	\$5.60	\$32.25	1.56%	17.36%	1.01	17.50%	55.36%	44.64%	7.81%	8.69%
21	Xcel Energy Inc.	\$3.00	\$5.00	\$43.70	5.15%	11.44%	1.03	11.73%	60.00%	40.00%	4.69%	5.42%
22	Average Gas	\$2.81	\$4.96	\$52.01	3.06%	9.87%	1.02	10.02%	57.74%	42.26%	4.26%	5.82%
23	Average Electric	\$3.37	\$5.59	\$50.24	3.70%	11.42%	1.02	11.63%	60.78%	39.22%	4.63%	5.20%
24	Average Combined	\$3.18	\$5.38	\$50.83	3.48%	10.90%	1.02	11.09%	59.76%	40.24%	4.51%	5.40%

Sources and Notes:

Cols. (1), (2) and (3): The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

Col. (4): [Col. (3) / Page 2 Col. (2)] ^ (1/number of years projected) - 1.

Col. (5): Col. (2) / Col. (3).

Col. (6): 2* (1 + Col. (4))] / (2 + Col. (4)). Col. (7): Col. (6) * Col. (5). Col. (8): Col. (1) / Col. (2).

Col. (9): 1 - Col. (8).

Col. (10): Col. (9) * Col. (7).

Col. (11): Col. (10) + Page 2 Col. (9).

Sustainable Growth Rate

		13-Week Average	2024 Book Value	Market to Book	Outstanding (in Millions) ²					<u>S * V</u>
Line	<u>Company</u>	Stock Price1	Per Share ²	Ratio	2024	3-5 Years	Growth	S Factor ³	V Factor⁴	<u>S * V</u>
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Atmos Energy Corporation	\$155.40	\$78.31	1.98	\$155.26	\$185.00	3.57%	7.08%	49.61%	3.51%
2	New Jersey Resources Corporation	\$46.21	\$22.12	2.09	\$99.46	\$105.00	1.09%	2.28%	52.14%	1.19%
3	NiSource Inc.	\$39.37	\$22.71	1.73	\$469.82	\$525.00	2.25%	3.89%	42.32%	1.65%
4	Northwest Natural Holding Company	\$41.29	\$34.45	1.20	\$40.22	\$50.00	4.45%	5.33%	16.57%	0.88%
5	ONE Gas, Inc.	\$74.47	\$51.85	1.44	\$59.88	\$70.00	3.17%	4.56%	30.37%	1.38%
6	Southwest Gas Holdings, Inc.	\$73.10	\$51.39	1.42	\$71.78	\$75.00	0.88%	1.25%	29.70%	0.37%
7	Spire Inc.	\$74.28	\$51.83	1.43	\$57.70	\$72.00	4.53%	6.49%	30.23%	1.96%
8	Alliant Energy Corporation	\$61.27	\$27.29	2.25	\$256.69	\$257.00	0.02%	0.05%	55.46%	0.03%
9	Ameren Corporation	\$96.45	\$42.78	2.25	\$266.93	\$285.00	1.32%	2.97%	55.65%	1.65%
10	American Electric Power Company, Inc.	\$103.73	\$50.63	2.05	\$532.90	\$550.00	0.63%	1.30%	51.19%	0.66%
11	Duke Energy Corporation	\$117.56	\$63.34	1.86	\$776.00	\$780.00	0.10%	0.19%	46.12%	0.09%
12	Edison International	\$53.63	\$36.18	1.48	\$384.78	\$395.00	0.53%	0.78%	32.53%	0.25%
13	Entergy Corporation	\$82.50	\$35.11	2.35	\$429.58	\$460.00	1.38%	3.24%	57.44%	1.86%
14	Evergy, Inc.	\$67.43	\$43.43	1.55	\$229.98	\$230.00	0.00%	0.00%	35.60%	0.00%
15	IDACORP, Inc.	\$115.74	\$61.73	1.88	\$53.96	\$56.00	0.74%	1.40%	46.67%	0.65%
16	NorthWestern Corporation	\$54.17	\$46.60	1.16	\$61.32	\$64.00	0.86%	1.00%	13.97%	0.14%
17	OGE Energy Corp.	\$44.30	\$22.87	1.94	\$200.90	\$200.20	- 0.07%	- 0.14%	48.38%	- 0.07%
18	Pinnacle West Capital Corporation	\$90.87	\$56.71	1.60	\$119.10	\$125.00	0.97%	1.56%	37.59%	0.59%
19	Portland General Electric Company	\$41.43	\$34.70	1.19	\$109.34	\$120.00	1.88%	2.24%	16.25%	0.36%
20	The Southern Company	\$90.22	\$29.85	3.02	\$1,096.00	\$1,120.00	0.43%	1.31%	66.91%	0.88%
21	Xcel Energy Inc.	\$69.06	\$33.99	2.03	\$574.37	\$595.00	0.71%	1.44%	50.78%	0.73%
22	Average Gas	\$72.02	\$44.67	1.61	136.30	154.57	2.85%	4.41%	35.85%	1.56%
23	Average Electric	\$77.74	\$41.80	1.90	363.70	374.09	0.68%	1.24%	43.90%	0.56%
24	Average Combined	\$75.83	\$42.76	1.81	287.90	300.91	1.40%	2.30%	41.21%	0.89%

Sources and Notes:

¹ S&P Global Intelligence, Downloaded on July 18, 2025.

² The Value Line Investment Survey, May 9, June 6, and July 18, 2025. ³ Expected Growth in the Number of Shares, Column (3) * Column (6).

⁴ Expected Profit of Stock Investment, [1 - 1 / Column (3)].

Constant Growth DCF Model (Sustainable Growth Rate)

<u>Line</u>	<u>Company</u>	13-Week AVG <u>Stock Price</u> ¹ (1)	Sustainable <u>Growth²</u> (2)	Annualized <u>Dividend³</u> (3)	Adjusted <u>Yield</u> (4)	Constant Growth DCF (5)
1	Atmos Energy Corporation	\$155.40	8.66%	\$3.48	2.43%	11.09%
2	New Jersey Resources Corporation	\$46.21	7.47%	\$1.80	4.19%	11.66%
3	NiSource Inc.	\$39.37	6.02%	\$1.12	3.02%	9.04%
4	Northwest Natural Holding Company	\$41.29	4.53%	\$1.96	4.96%	9.49%
5	ONE Gas, Inc.	\$74.47	5.57%	\$2.68	3.80%	9.37%
6	Southwest Gas Holdings, Inc.	\$73.10	3.83%	\$2.48	3.52%	7.35%
7	Spire Inc.	\$74.28	4.67%	\$3.14	4.42%	9.10%
8	Alliant Energy Corporation	\$61.27	5.82%	\$1.92	3.32%	9.14%
9	Ameren Corporation	\$96.45	7.53%	\$2.84	3.17%	10.70%
10	American Electric Power Company, Inc.	\$103.73	6.33%	\$3.72	3.81%	10.15%
11	Duke Energy Corporation	\$117.56	4.08%	\$4.18	3.70%	7.78%
12	Edison International	\$53.63	6.14%	\$3.31	6.55%	12.69%
13	Entergy Corporation	\$82.50	4.68%	\$2.40	3.05%	7.73%
14	Evergy, Inc.	\$67.43	3.82%	\$2.67	4.11%	7.94%
15	IDACORP, Inc.	\$115.74	4.73%	\$3.44	3.11%	7.84%
16	NorthWestern Corporation	\$54.17	3.07%	\$2.64	5.02%	8.10%
17	OGE Energy Corp.	\$44.30	4.48%	\$1.69	3.97%	8.45%
18	Pinnacle West Capital Corporation	\$90.87	4.15%	\$3.58	4.10%	8.25%
19	Portland General Electric Company	\$41.43	3.79%	\$2.10	5.26%	9.05%
20	The Southern Company	\$90.22	8.69%	\$2.96	3.57%	12.26%
21	Xcel Energy Inc.	\$69.06	5.42%	\$2.28	3.48%	8.90%
22	Average Gas	\$72.02	5.82%	\$2.38	3.76%	9.59%
23	Median Gas	\$73.10	5.57%	\$2.48	3.80%	9.37%
24	Average Electric	\$77.74	5.20%	\$2.84	4.02%	9.21%
25	Median Electric	\$75.78	4.70%	\$2.76	3.76%	8.68%
26	Average Combined	\$75.83	5.40%	\$2.69	3.93%	9.34%
27	Median Combined	\$73.10	4.73%	\$2.67	3.80%	9.05%

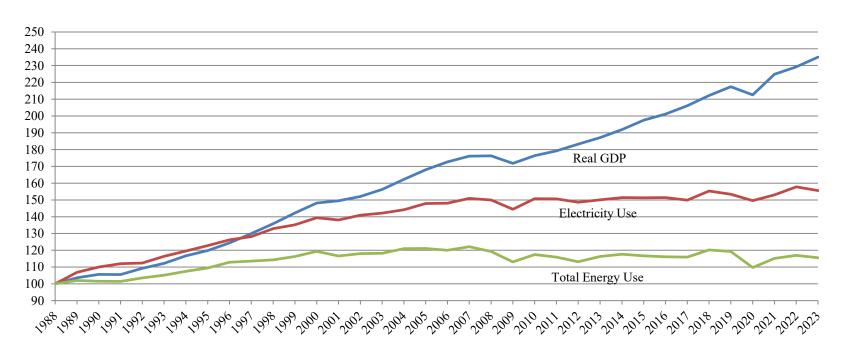
Sources:

¹ S&P Global Intelligence, Downloaded on July 18, 2025.

² Exhibit MPG-7.

³ The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

Electricity Sales Are Linked to U.S. Economic Growth



Note:

1988 represents the base year. Graph depicts increases or decreases from the base year.

Sources:

U.S. Energy Information Administration Federal Reserve Bank of St. Louis

Multi-Stage Growth DCF Model

		13-Week AVG	Annualized	First Stage	Second Stage Growth					Third Stage	Multi-Stage
Line	Company	Stock Price1	Dividend ²	Growth ³	Year 6	Year 7	Year 8	Year 9	Year 10	Growth⁴	Growth DCF
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Atmos Energy Corporation	\$155.40	\$3.48	7.19%	6.68%	6.16%	5.65%	5.13%	4.62%	4.10%	6.94%
2	New Jersey Resources Corporation	\$46.21	\$1.80	7.90%	7.27%	6.63%	6.00%	5.37%	4.73%	4.10%	9.21%
3	NiSource Inc.	\$39.37	\$1.12	7.85%	7.22%	6.60%	5.97%	5.35%	4.72%	4.10%	7.85%
4	Northwest Natural Holding Company	\$41.29	\$1.96	5.75%	5.48%	5.20%	4.93%	4.65%	4.38%	4.10%	9.56%
5	ONE Gas, Inc.	\$74.47	\$2.68	5.70%	5.43%	5.17%	4.90%	4.63%	4.37%	4.10%	8.24%
6	Southwest Gas Holdings, Inc.	\$73.10	\$2.48	11.65%	10.39%	9.13%	7.87%	6.62%	5.36%	4.10%	9.66%
7	Spire Inc.	\$74.28	\$3.14	7.31%	6.78%	6.24%	5.71%	5.17%	4.64%	4.10%	9.45%
8	Alliant Energy Corporation	\$61.27	\$1.92	6.57%	6.16%	5.75%	5.34%	4.92%	4.51%	4.10%	7.91%
9	Ameren Corporation	\$96.45	\$2.84	8.12%	7.45%	6.78%	6.11%	5.44%	4.77%	4.10%	8.05%
10	American Electric Power Company, Inc.	\$103.73	\$3.72	6.62%	6.20%	5.78%	5.36%	4.94%	4.52%	4.10%	8.47%
11	Duke Energy Corporation	\$117.56	\$4.18	6.36%	5.99%	5.61%	5.23%	4.85%	4.48%	4.10%	8.37%
12	Edison International	\$53.63	\$3.31	8.77%	7.99%	7.21%	6.43%	5.66%	4.88%	4.10%	12.45%
13	Entergy Corporation	\$82.50	\$2.40	9.33%	8.46%	7.59%	6.71%	5.84%	4.97%	4.10%	8.30%
14	Evergy, Inc.	\$67.43	\$2.67	5.81%	5.52%	5.24%	4.95%	4.67%	4.38%	4.10%	8.68%
15	IDACORP, Inc.	\$115.74	\$3.44	8.19%	7.51%	6.83%	6.15%	5.46%	4.78%	4.10%	8.10%
16	NorthWestern Corporation	\$54.17	\$2.64	6.50%	6.10%	5.70%	5.30%	4.90%	4.50%	4.10%	9.96%
17	OGE Energy Corp.	\$44.30	\$1.69	6.22%	5.87%	5.51%	5.16%	4.81%	4.45%	4.10%	8.62%
18	Pinnacle West Capital Corporation	\$90.87	\$3.58	3.19%	3.34%	3.49%	3.65%	3.80%	3.95%	4.10%	7.97%
19	Portland General Electric Company	\$41.43	\$2.10	3.92%	3.95%	3.98%	4.01%	4.04%	4.07%	4.10%	9.32%
20	The Southern Company	\$90.22	\$2.96	6.88%	6.42%	5.95%	5.49%	5.03%	4.56%	4.10%	8.17%
21	Xcel Energy Inc.	\$69.06	\$2.28	8.09%	7.43%	6.76%	6.10%	5.43%	4.77%	4.10%	8.51%
22	Average Gas	\$72.02	\$2.38	7.62%	7.03%	6.45%	5.86%	5.27%	4.69%	4.10%	8.70%
23	Median Gas	\$73.10	\$2.48	7.31%	6.78%	6.24%	5.71%	5.17%	4.64%	4.10%	9.21%
24	Average Electric	\$77.74	\$2.84	6.75%	6.31%	5.87%	5.43%	4.98%	4.54%	4.10%	8.78%
25	Median Electric	\$75.78	\$2.76	6.59%	6.18%	5.76%	5.35%	4.93%	4.52%	4.10%	8.42%
26	Average Combined	\$75.83	\$2.69	7.04%	6.55%	6.06%	5.57%	5.08%	4.59%	4.10%	8.75%
27	Median Combined	\$73.10	\$2.67	6.88%	6.42%	5.95%	5.49%	5.03%	4.56%	4.10%	8.47%

Sources:

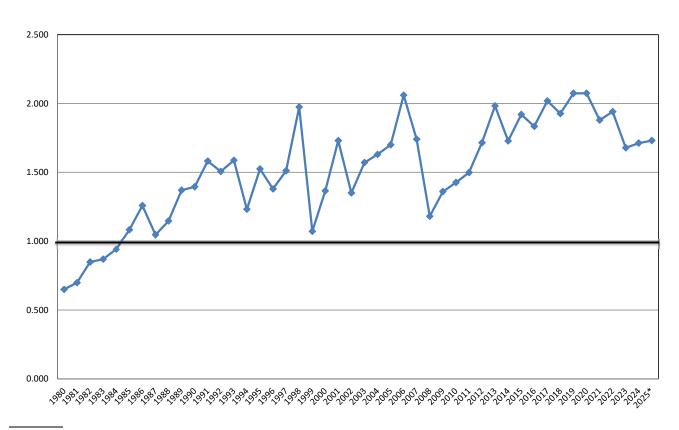
¹ S&P Global Intelligence, Downloaded on July 18, 2025.

² The Value Line Investment Survey, May 9, June 6, and July 18, 2025.

³ Exhibit MPG-4

⁴ Blue Chip Financial Forecasts, June 2, 2025 at page 14.

Common Stock Market/Book Ratio



Source:

1980 - 2000: Mergent Public Utility Manual.

2001 - 2015: AUS Utility Reports, multiple dates.

2016 - 2024: Value Line Investment Survey, multiple dates.

* Value Line Investment Survey Reports, May 9, May 23, June 6, and July 18, 2025.

Equity Risk Premium - Treasury Bond

<u>Line</u>	<u>Year</u>	Authorized Electric <u>Returns¹</u> (1)	30 yr. Treasury <u>Bond Yield²</u> (2)	Indicated Risk <u>Premium</u> (3)	Rolling 5 - Year <u>Average</u> (4)	Rolling 10 - Year <u>Average</u> (5)
1	1986	13.93%	7.80%	6.13%		
2	1987	12.99%	8.58%	4.41%		
3	1988	12.79%	8.96%	3.83%		
4	1989	12.97%	8.45%	4.52%		
5	1990	12.70%	8.61%	4.09%	4.60%	
6	1991	12.55%	8.14%	4.41%	4.25%	
7	1992	12.09%	7.67%	4.42%	4.26%	
8	1993	11.41%	6.60%	4.81%	4.45%	
9	1994	11.34%	7.37%	3.97%	4.34%	
10	1995	11.55%	6.88%	4.67%	4.46%	4.53%
11	1996	11.39%	6.70%	4.69%	4.51%	4.38%
12	1997	11.40%	6.61%	4.79%	4.59%	4.42%
13	1998	11.66%	5.58%	6.08%	4.84%	4.65%
14	1999	10.77%	5.87%	4.90%	5.03%	4.68%
15	2000	11.43%	5.94%	5.49%	5.19%	4.82%
16	2001	11.09%	5.49%	5.60%	5.37%	4.94%
17	2002	11.16%	5.43%	5.73%	5.56%	5.07%
18	2003	10.97%	4.96%	6.01%	5.55%	5.19%
19	2004	10.75%	5.05%	5.70%	5.71%	5.37%
20	2005	10.54%	4.65%	5.89%	5.79%	5.49%
21	2006	10.34%	4.87%	5.47%	5.76%	5.57%
22	2007	10.31%	4.83%	5.48%	5.71%	5.64%
23	2008	10.37%	4.28%	6.09%	5.73%	5.64%
24	2009	10.52%	4.07%	6.45%	5.88%	5.79%
25	2010	10.29%	4.25%	6.04%	5.90%	5.85%
26	2011	10.19%	3.91%	6.28%	6.07%	5.91%
27	2012	10.01%	2.92%	7.09%	6.39%	6.05%
28	2013	9.81%	3.45%	6.36%	6.44%	6.09%
29	2014	9.75%	3.34%	6.41%	6.44%	6.16%
30	2015	9.60%	2.84%	6.76%	6.58%	6.24%
31	2016	9.60%	2.60%	7.00%	6.72%	6.40%
32	2017	9.68%	2.90%	6.79%	6.66%	6.53%
33	2018	9.55%	3.11%	6.44%	6.68%	6.56%
34	2019	9.64%	2.58%	7.06%	6.81%	6.62%
35	2020	9.39%	1.56%	7.83%	7.02%	6.80%
36	2021	9.39%	2.05%	7.34%	7.09%	6.91%
37	2022	9.52%	3.12%	6.41%	7.01%	6.84%
38	2023	9.62%	4.09%	5.53%	6.83%	6.76%
39	2024	9.78%	4.41%	5.37%	6.49%	6.65%
40	2025 ³	9.72%	4.71%	5.01%	5.93%	6.48%
41	Average	10.81%	5.13%	5.68%	5.74%	5.77%
42	Minimum				4.25%	4.38%
43	Maximum				7.09%	6.91%

Sources:

¹ Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3. S&P Global Market Intelligence, RRA Regulatory Focus, Major Electric Rate Case Decisions in the US, January - March 2025, April 25, 2025 at page 3.

^{2006 - 2025} Authorized Returns exclude limited issue rider cases.

² St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.

The yields from 2002 to 2005 represent the 20-Year Treasury yields obtained from the Federal Reserve Bank.

³ Data represents January - March, 2025.

Equity Risk Premium - Treasury Bond

<u>Line</u>	<u>Year</u>	Authorized Gas <u>Returns</u> ¹	30 yr. Treasury <u>Bond Yield²</u>	Indicated Risk <u>Premium</u>	Rolling 5 - Year <u>Average</u>	Rolling 10 - Year <u>Average</u>
		(1)	(2)	(3)	(4)	(5)
1	1986	13.46%	7.80%	5.66%		
2	1987	12.74%	8.58%	4.16%		
3	1988	12.85%	8.96%	3.89%		
4	1989	12.88%	8.45%	4.43%		
5	1990	12.67%	8.61%	4.06%	4.44%	
6	1991	12.46%	8.14%	4.32%	4.17%	
7	1992	12.01%	7.67%	4.34%	4.21%	
8	1993	11.35%	6.60%	4.75%	4.38%	
9	1994	11.35%	7.37%	3.98%	4.29%	
10	1995	11.43%	6.88%	4.55%	4.39%	4.42%
11	1996	11.19%	6.70%	4.49%	4.42%	4.30%
12	1997	11.29%	6.61%	4.68%	4.49%	4.35%
13	1998	11.51%	5.58%	5.93%	4.73%	4.55%
14	1999	10.66%	5.87%	4.79%	4.89%	4.59%
15	2000	11.39%	5.94%	5.45%	5.07%	4.73%
16	2001	10.95%	5.49%	5.46%	5.26%	4.84%
17	2002	11.03%	5.43%	5.60%	5.45%	4.97%
18	2003	10.99%	4.96%	6.03%	5.47%	5.10%
19	2004	10.59%	5.05%	5.54%	5.62%	5.25%
20	2005	10.46%	4.65%	5.81%	5.69%	5.38%
21	2006	10.40%	4.87%	5.53%	5.70%	5.48%
22	2007	10.22%	4.83%	5.39%	5.66%	5.55%
23	2008	10.39%	4.28%	6.11%	5.68%	5.57%
24	2009	10.22%	4.07%	6.15%	5.80%	5.71%
25	2010	10.15%	4.25%	5.90%	5.81%	5.75%
26	2011	9.92%	3.91%	6.01%	5.91%	5.81%
27	2012	9.94%	2.92%	7.02%	6.24%	5.95%
28	2013	9.68%	3.45%	6.23%	6.26%	5.97%
29	2014	9.78%	3.34%	6.44%	6.32%	6.06%
30	2015	9.60%	2.84%	6.76%	6.49%	6.15%
31	2016	9.54%	2.60%	6.94%	6.68%	6.29%
32	2017	9.63%	2.90%	6.74%	6.62%	6.43%
33	2018	9.59%	3.11%	6.48%	6.67%	6.47%
34	2019	9.71%	2.58%	7.13%	6.81%	6.56%
35	2020	9.46%	1.56%	7.90%	7.04%	6.76%
36	2021	9.56%	2.05%	7.51%	7.15%	6.91%
37	2022	9.52%	3.12%	6.41%	7.08%	6.85%
38	2023	9.60%	4.09%	5.51%	6.89%	6.78%
39	2024	9.65%	4.41%	5.25%	6.51%	6.66%
40	2025 ³	9.73%	4.71%	5.02%	5.94%	6.49%
41	Average	10.74%	5.13%	5.61%	5.67%	5.70%
42	Minimum				4.17%	4.30%
43	Maximum				7.15%	6.91%

Sources:

Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3. S&P Global Market Intelligence, RRA Regulatory Focus, Major Electric Rate Case Decisions in the US, January - March 2025, April 25, 2025 at page 3.

² St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.

The yields from 2002 to 2005 represent the 20-Year Treasury yields obtained from the Federal Reserve Bank.

³ Data represents January - March, 2025.

Equity Risk Premium - Utility Bond

<u>Line</u>	<u>Year</u>	Authorized Electric <u>Returns¹</u> (1)	Average "A" Rated Utility <u>Bond Yield²</u> (2)	Indicated Risk <u>Premium</u> (3)	Rolling 5 - Year <u>Average</u> (4)	Rolling 10 - Year <u>Average</u> (5)
1	1986	13.93%	9.58%	4.35%		
2	1987	12.99%	10.10%	2.89%		
3	1988	12.79%	10.49%	2.30%		
4	1989	12.97%	9.77%	3.20%		
5	1990	12.70%	9.86%	2.84%	3.12%	
6	1991	12.55%	9.36%	3.19%	2.88%	
7	1992	12.09%	8.69%	3.40%	2.99%	
8	1993	11.41%	7.59%	3.82%	3.29%	
9	1994	11.34%	8.31%	3.03%	3.26%	
10	1995	11.55%	7.89%	3.66%	3.42%	3.27%
11	1996	11.39%	7.75%	3.64%	3.51%	3.20%
12	1997	11.40%	7.60%	3.80%	3.59%	3.29%
13	1998	11.66%	7.04%	4.62%	3.75%	3.52%
14	1999	10.77%	7.62%	3.15%	3.77%	3.52%
15	2000	11.43%	8.24%	3.19%	3.68%	3.55%
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19	2004	10.75%	6.16%	4.59%	3.86%	3.82%
20	2005	10.54%	5.65%	4.89%	4.20%	3.94%
21	2006	10.34%	6.07%	4.27%	4.39%	4.00%
22	2007	10.31%	6.07%	4.24%	4.48%	4.04%
23	2008	10.37%	6.53%	3.84%	4.37%	3.97%
24	2009	10.52%	6.04%	4.48%	4.34%	4.10%
25	2010	10.29%	5.46%	4.83%	4.33%	4.26%
26	2011	10.19%	5.04%	5.15%	4.51%	4.45%
27	2012	10.01%	4.13%	5.88%	4.84%	4.66%
28	2013	9.81%	4.48%	5.33%	5.13%	4.75%
29	2014	9.75%	4.28%	5.47%	5.33%	4.84%
30	2015	9.60%	4.12%	5.49%	5.46%	4.90%
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32	2017	9.68%	4.00%	5.68%	5.53%	5.18%
33	2018	9.55%	4.25%	5.30%	5.52%	5.33%
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37 38	2022	9.52% 9.62%	4.72% 5.54%	4.80% 4.08%	5.73% 5.48%	5.63% 5.50%
39	2024	9.78%	5.54%	4.24%	5.15%	5.38%
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41	Average	10.81%	6.48%	4.33%	4.39%	4.42%
42	Minimum				2.88%	3.20%
43	Maximum				5.90%	5.73%

¹ Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3. S&P Global Market Intelligence, RRA Regulatory Focus, Major Electric Rate Case Decisions in the US, January - March 2025, April 25, 2025 at page 3.

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³ Data represents January - March, 2025.

Equity Risk Premium - Utility Bond

		Authorized Gas	Average "A" Rated Utility	Indicated Risk	Rolling 5 - Year	Rolling 10 - Year
Line	<u>Year</u>	Returns ¹	Bond Yield ²	Premium	Average	Average
		(1)	(2)	(3)	(4)	(5)
1	1986	13.46%	9.58%	3.88%		
2	1987	12.74%	10.10%	2.64%		
3	1988	12.85%	10.49%	2.36%		
4	1989	12.88%	9.77%	3.11%		
5	1990	12.67%	9.86%	2.81%	2.96%	
6	1991	12.46%	9.36%	3.10%	2.80%	
7	1992	12.01%	8.69%	3.32%	2.94%	
8	1993	11.35%	7.59%	3.76%	3.22%	
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13	1998	11.51%	7.04%	4.47%	3.64%	3.43%
14	1999	10.66%	7.62%	3.04%	3.64%	3.42%
15	2000	11.39%	8.24%	3.15%	3.56%	3.45%
16	2001	10.95%	7.76%	3.19%	3.51%	3.46%
17	2002	11.03%	7.37%	3.66%	3.50%	3.50%
18	2003	10.99%	6.58%	4.41%	3.49%	3.56%
19	2004	10.59%	6.16%	4.43%	3.77%	3.70%
20	2005	10.46%	5.65%	4.81%	4.10%	3.83%
21	2006	10.40%	6.07%	4.33%	4.33%	3.92%
22	2007	10.22%	6.07%	4.15%	4.43%	3.96%
23	2008	10.39%	6.53%	3.86%	4.32%	3.90%
24	2009	10.22%	6.04%	4.18%	4.27%	4.02%
25	2010	10.15%	5.46%	4.69%	4.24%	4.17%
26	2011	9.92%	5.04%	4.88%	4.35%	4.34%
27	2012	9.94%	4.13%	5.81%	4.68%	4.55%
28	2013	9.68%	4.48%	5.20%	4.95%	4.63%
29	2014	9.78%	4.28%	5.50%	5.22%	4.74%
30	2015	9.60%	4.12%	5.49%	5.38%	4.81%
31	2016	9.54%	3.93%	5.61%	5.52%	4.94%
32	2017	9.63%	4.00%	5.63%	5.49%	5.08%
33	2018	9.59%	4.25%	5.34%	5.51%	5.23%
34	2019	9.71%	3.77%	5.94%	5.60%	5.41%
35	2020	9.46%	3.02%	6.44%	5.79%	5.58%
36	2021	9.56%	3.11%	6.45%	5.96%	5.74%
37	2022	9.52%	4.72%	4.80%	5.80%	5.64%
38	2023	9.60%	5.54%	4.06%	5.54%	5.53%
39	2024	9.65%	5.54%	4.11%	5.17%	5.39%
40	2025 ³	9.73%	5.77%	3.96%	4.68%	5.23%
41	Average	10.74%	6.48%	4.26%	4.33%	4.34%
42	Minimum				2.80%	3.11%
43	Maximum				5.96%	5.74%

Sources:

Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3. S&P Global Market Intelligence, RRA Regulatory Focus, Major Electric Rate Case Decisions in the US, January - March 2025, April 25, 2025 at page 3.

² St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.

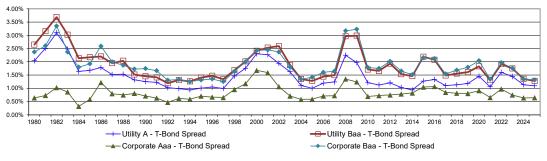
The yields from 2002 to 2005 represent the 20-Year Treasury yields obtained from the Federal Reserve Bank.

³ Data represents January - March, 2025.

Bond Yield Spreads

				Publi	c Utility Bond	Ì		Co	orporate Bond		Utility to	Corporate
		T-Bond			A-T-Bond	Baa-T-Bond			Aaa-T-Bond	Baa-T-Bond	Baa	A-Aaa
Line	Year	Yield ¹	\mathbf{A}^2	Baa ²	Spread	Spread	<u>Aaa³</u>	Baa ³	Spread	Spread	Spread	Spread
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	1980	11.30%	13.34%	13.95%	2.04%	2.65%		13.67%	0.64%	2.37%	0.28%	1.40%
2	1981	13.44%	15.95%	16.60%	2.51%	3.16%	14.17%	16.04%	0.73%	2.60%	0.56%	1.78%
3	1982	12.76%	15.86%	16.45%	3.10%	3.69%			1.03%	3.35%	0.34%	2.07%
4	1983	11.18%	13.66%	14.20%	2.48%	3.02%		13.55%	0.86%	2.38%	0.65%	1.62%
5	1984	12.39%	14.03%	14.53%	1.64%	2.14%		14.19%	0.32%	1.80%	0.34%	1.32%
6	1985	10.79%	12.47%	12.96%	1.68%	2.17%			0.58%	1.93%	0.24%	1.10%
7	1986	7.80%	9.58%	10.00%	1.78%	2.20%	9.02%	10.39%	1.22%	2.59%	-0.39%	0.56%
8	1987	8.58%	10.10%	10.53%	1.52%	1.95%	9.38%	10.58%	0.80%	2.00%	-0.05%	0.72%
9	1988	8.96%	10.49%	11.00%	1.53%	2.04%	9.71%	10.83%	0.75%	1.87%	0.17%	0.78%
10	1989	8.45%	9.77%	9.97%	1.32%	1.52%	9.26%	10.18%	0.81%	1.73%	-0.21%	0.51%
11	1990	8.61%	9.86%	10.06%	1.25%	1.45%	9.32%	10.36%	0.71%	1.75%	-0.30%	0.54%
12	1991	8.14%	9.36%	9.55%	1.22%	1.41%	8.77%	9.80%	0.63%	1.67%	-0.25%	0.59%
13	1992	7.67%	8.69%	8.86%	1.02%	1.19%	8.14%	8.98%	0.47%	1.31%	-0.12%	0.55%
14	1993	6.60%	7.59%	7.91%	0.99%	1.31%	7.22%	7.93%	0.62%	1.33%	-0.02%	0.37%
15	1994	7.37%	8.31%	8.63%	0.94%	1.26%	7.96%	8.62%	0.59%	1.25%	0.01%	0.35%
16	1995	6.88%	7.89%	8.29%	1.01%	1.41%	7.59%	8.20%	0.71%	1.32%	0.09%	0.30%
17	1996	6.70%	7.75%	8.17%	1.05%	1.47%	7.37%	8.05%	0.67%	1.35%	0.12%	0.38%
18	1997	6.61%	7.60%	7.95%	0.99%	1.34%	7.26%	7.86%	0.66%	1.26%	0.09%	0.34%
19	1998	5.58%	7.04%	7.26%	1.46%	1.68%	6.53%	7.22%	0.95%	1.64%	0.04%	0.51%
20	1999	5.87%	7.62%	7.88%	1.75%	2.01%	7.04%	7.87%	1.18%	2.01%	0.01%	0.58%
21	2000	5.94%	8.24%	8.36%	2.30%	2.42%	7.62%	8.36%	1.68%	2.42%	-0.01%	0.62%
22 23	2001 2002	5.49% 5.43%	7.76% 7.37%	8.03%	2.27% 1.94%	2.54%	7.08% 6.49%	7.95% 7.80%	1.59%	2.45%	0.08%	0.68%
23 24	2002	4.96%	6.58%	8.02% 6.84%	1.62%	2.59% 1.89%	5.67%	6.77%	1.06% 0.71%	2.37% 1.81%	0.22% 0.08%	0.88% 0.91%
25	2003	5.05%	6.16%	6.40%	1.11%	1.35%	5.63%	6.39%	0.71%	1.35%	0.00%	0.53%
26	2004	4.65%	5.65%	5.93%	1.00%	1.28%	5.24%	6.06%	0.59%	1.42%	-0.14%	0.41%
27	2006	4.87%	6.07%	6.32%	1.20%	1.44%	5.58%	6.48%	0.71%	1.61%	-0.16%	0.48%
28	2007	4.83%	6.07%	6.33%	1.24%	1.50%	5.56%	6.48%	0.71%	1.65%		0.52%
											-0.15%	
29	2008	4.28%	6.53%	7.25%	2.25%	2.97%	5.63%	7.45%	1.35%	3.17%	-0.20%	0.90%
30	2009	4.07%	6.04%	7.06%	1.97%	2.99%	5.31%	7.30%	1.24%	3.23%	-0.24%	0.73%
31	2010	4.25%	5.46%	5.96%	1.21%	1.71%	4.94%	6.04%	0.69%	1.79%	-0.08%	0.52%
32	2011	3.91%	5.04%	5.57%	1.13%	1.66%	4.64%	5.66%	0.73%	1.75%	-0.10%	0.40%
33	2012	2.92%	4.13%	4.86%	1.21%	1.93%	3.67%	4.94%	0.75%	2.01%	-0.08%	0.46%
34	2013	3.45%	4.48%	4.98%	1.03%	1.54%	4.24%	5.10%	0.79%	1.65%	-0.12%	0.24%
35	2014	3.34%	4.28%	4.80%	0.94%	1.46%	4.16%	4.85%	0.82%	1.51%	-0.05%	0.12%
36	2015	2.84%	4.12%	5.03%	1.27%	2.19%	3.89%	5.00%	1.05%	2.16%	0.03%	0.23%
37	2016	2.60%	3.93%	4.68%	1.34%	2.08%	3.67%	4.72%	1.07%	2.12%	-0.04%	0.27%
38	2017	2.90%	4.00%	4.38%	1.10%	1.48%	3.74%	4.44%	0.85%	1.55%	-0.06%	0.26%
39	2018	3.11%	4.25%	4.67%	1.14%	1.56%	3.93%	4.80%	0.82%	1.69%	-0.13%	0.32%
40	2019	2.58%	3.77%	4.19%	1.19%	1.61%	3.39%	4.38%	0.81%	1.79%	-0.18%	0.38%
41	2020	1.56%	3.02%	3.39%	1.45%	1.83%	2.48%	3.60%	0.91%	2.04%	-0.21%	0.54%
42	2021	2.05%	3.11%	3.36%	1.06%	1.31%	2.71%	3.40%	0.66%	1.35%	-0.04%	0.40%
43	2022	3.12%	4.72%	5.03%	1.61%	1.91%	4.09%	5.08%	0.97%	1.97%	-0.05%	0.64%
44	2023	4.09%	5.54%	5.84%	1.45%	1.75%	4.84%	5.85%	0.75%	1.76%	-0.01%	0.70%
45	2024	4.41%	5.54%	5.76%	1.14%	1.36%	5.04%	5.75%	0.64%	1.35%	0.01%	0.50%
46	2025 4	4.77%	5.87%	6.05%	1.10%	1.28%	5.42%	6.09%	0.65%	1.32%	-0.04%	0.45%
47	Average	6.02%	7.49%	7.91%	1.47%	1.88%	6.85%	7.91%	0.83%	1.89%	0.00%	0.64%

Yield Spreads Treasury Vs. Corporate & Treasury Vs. Utility



Sources:

¹ St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.

The utility yields for the period 1980-2000 were obtained from Mergent Bond Record.

The utility yields for the period 2001-2009 were obtained from the Mergent Bond Record.

The utility yields for the period 2010-2025 were obtained from the Mergent Bond Record.

³ The corporate yields for the period 1980-2009 were obtained from the St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/. The corporate yields from 2010-2025 were obtained from the Mergent Bond Record.
⁴ Data represents January - June, 2025.

3-Month Treasury and Utility Bond Yields

<u>Line</u>	<u>Date</u>	Treasury <u>Bond Yield¹</u> (1)	"A" Rated Utility Bond Yield ² (2)	"Baa" Rated Utility <u>Bond Yield²</u> (3)
1	June-25	4.89%	5.93%	6.12%
2	May-25	4.90%	6.05%	6.23%
3	April-25	4.71%	5.91%	6.11%
4	3-Month Average	4.83%	5.96%	6.15%
5	Unadjusted Stock Yield ³	3.59%		
6	<u>Spreads</u> Utility vs. Treasury Bond		1.13%	1.32%
7	Utility Bond vs. Stock	1.25%	2.38%	2.57%

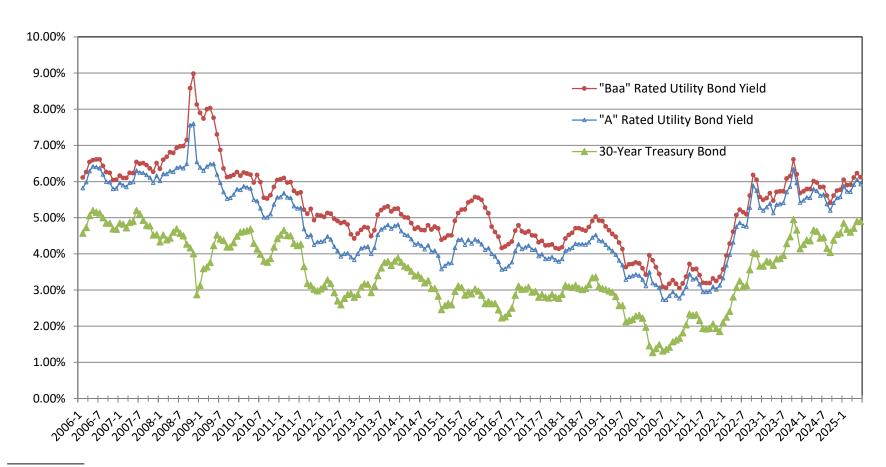
Sources:

¹ St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.

² Mergent Bond Record.

³ Exhibit MPG-5, column 4.

Trends in Bond Yields



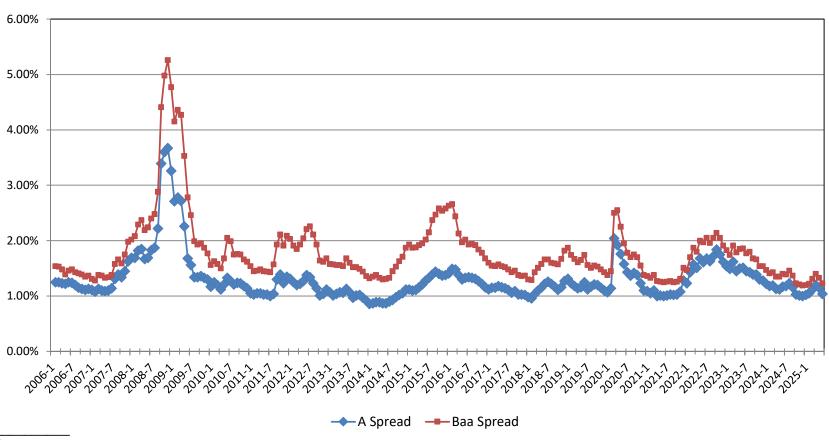
Sources:

Mergent Bond Record.

www.moodys.com, Bond Yields and Key Indicators.

St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/

<u>Yield Spread Between Utility Bonds and 30-Year Treasury Bonds</u>



Sources:

Mergent Bond Record.

www.moodys.com, Bond Yields and Key Indicators.

St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/

Value Line Beta

<u>Line</u>	<u>Company</u>	<u>Beta¹</u> (1)
1	Atmos Energy Corporation	0.75
2	New Jersey Resources Corporation	0.85
3	NiSource Inc.	0.85
4	Northwest Natural Holding Company	0.80
5	ONE Gas, Inc.	0.80
6	Southwest Gas Holdings, Inc.	0.80
7 8	Spire Inc. Alliant Energy Corporation	0.80 0.80
9	Ameren Corporation	0.80
10	American Electric Power Company, Inc.	0.70
11	Duke Energy Corporation	0.70
12	Edison International	0.90
13	Entergy Corporation	0.80
14	Evergy, Inc.	0.75
15	IDACORP, Inc.	0.70
16	NorthWestern Corporation	0.75
17	OGE Energy Corp.	0.85
18	Pinnacle West Capital Corporation	0.75
19	Portland General Electric Company	0.75
20	The Southern Company	0.75
21	Xcel Energy Inc.	0.70
22	Average Gas	0.81
23	Average Electric	0.76
24	Average Combined	0.78

Source:

¹ The Value Line Investment Survey , May 9, June 6, and July 18, 2025.

Value Line <u>Historical Betas</u>

		Long-Term											5-Year CO	VID Betas										
Line	Company	Average ¹	2Q25	1Q25	4Q24	3Q24	2Q24	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20	2Q20	1Q20
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1	Atmos Energy Corporation	0.76	0.75	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.55
2	New Jersey Resources Corporation	0.86	0.85	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.90	0.90	0.65
3	NiSource Inc.	0.78	0.85	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.85	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.55
4	Northwest Natural Holding Company	0.74	0.80	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.55
5	ONE Gas, Inc.	0.76	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.60
6	Southwest Gas Holdings, Inc.	0.84	0.80	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.85	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.65
7	Spire Inc.	0.76	0.80	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.85	0.85	0.80	0.80	0.85	0.85	0.85	0.85	0.85	1.00	0.80	0.80	0.60
8	Alliant Energy Corporation	0.78	0.80	0.95	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.55
9	Ameren Corporation	0.75	0.80	0.90	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.85	0.80	0.80	0.85	0.80	0.80	0.50
10	American Electric Power Company, Inc.	0.70	0.70	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.50
11	Duke Energy Corporation	0.71	0.70	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.85	0.85	0.85	0.85	0.85	0.45
12	Edison International	0.79	0.90	1.05	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	0.95	0.90	0.90	0.55	0.55
13	Entergy Corporation	0.79	0.80	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.60
14	Evergy, Inc.	0.94	0.75	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.05	NMF
15	IDACORP, Inc.	0.75	0.75	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.85	0.80	0.80	0.80	0.80	0.50	0.55
16	NorthWestern Corporation	0.79	0.80	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.55	0.60
17	OGE Energy Corp.	0.96	0.85	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.05	1.05	1.05	1.05	1.05	1.10	1.05	1.05	0.70
18	Pinnacle West Capital Corporation	0.77	0.80	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.90	0.85	0.85	0.45	0.50
19	Portland General Electric Company	0.78	0.80	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.55	0.55
20	The Southern Company	0.73	0.75	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.50
21	Xcel Energy Inc.	0.69	0.75	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.45	0.50
22	Average Gas	0.78	0.81	0.92	0.91	0.89	0.89	0.88	0.88	0.86	0.84	0.86	0.85	0.84	0.84	0.86	0.87	0.87	0.87	0.86	0.88	0.84	0.84	0.59
23	Median Gas	0.76	0.80	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.60
24	Average Electric	0.78	0.78	0.94	0.94	0.93	0.93	0.92	0.91	0.90	0.87	0.88	0.88	0.88	0.87	0.89	0.90	0.90	0.89	0.89	0.88	0.87	0.73	0.54
25	Median Electric	0.77	0.80	0.95	0.95	0.95	0.93	0.93	0.90	0.90	0.88	0.88	0.88	0.88	0.88	0.90	0.93	0.90	0.90	0.88	0.85	0.85	0.78	0.55
26	Average Combined	0.78	0.79	0.94	0.93	0.92	0.92	0.91	0.90	0.89	0.86	0.87	0.87	0.87	0.86	0.88	0.89	0.89	0.88	0.88	0.88	0.86	0.76	0.56
27	Median Combined	0.77	0.80	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.85	0.85	0.85	0.85	0.80	0.55

¹Average of historical Q3 2014 through Q2 2025.

Value Line <u>Historical Betas</u>

Line	<u>Company</u>	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17	4Q16	3Q16	2Q16	1Q16	4Q15	3Q15	2Q15	1Q15	4Q14	3Q14
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
		` '	` '	(-,	` '	,	(-7	` '	,	V-7	,	` '	` '	,	` '	,	,	` '	,	,	,	` '	` ,
1	Atmos Energy Corporation	0.60	0.60	0.65	0.60	0.60	0.60	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.85	0.85	0.85	0.80	0.80
2	New Jersey Resources Corporation	0.70	0.70	0.70	0.70	0.70	0.70	0.80	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.80	0.80	0.80	0.80
3	NiSource Inc.	0.55	0.55	0.55	0.55	0.50	0.55	0.60	0.60	0.60	NMF	0.65	NMF	0.85	0.85	0.85	0.80						
4	Northwest Natural Holding Company	0.60	0.60	0.60	0.65	0.60	0.65	0.70	0.65	0.70	0.70	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70
5	ONE Gas, Inc.	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	N/A										
6	Southwest Gas Holdings, Inc.	0.70	0.70	0.70	0.70	0.70	0.75	0.80	0.75	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.80	0.80	0.85	0.85	0.85	0.85	0.85
7	Spire Inc.	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
8	Alliant Energy Corporation	0.60	0.60	0.60	0.65	0.60	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80
9	Ameren Corporation	0.55	0.55	0.60	0.60	0.55	0.60	0.65	0.65	0.70	0.65	0.65	0.70	0.65	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
10	American Electric Power Company, Inc.	0.55	0.55	0.55	0.55	0.55	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
11	Duke Energy Corporation	0.50	0.50	0.50	0.50	0.55	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.50	0.60	0.60	0.60	0.60	0.60
12	Edison International	0.60	0.60	0.60	0.55	0.60	0.60	0.60	0.65	0.65	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.75
13	Entergy Corporation	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.65	0.70	0.70	0.70	0.70
14	Evergy, Inc.	NMF	NMF	NMF	NMF	NMF	NMF	N/A															
15	IDACORP, Inc.	0.55	0.60	0.60	0.55	0.60	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
16	NorthWestern Corporation	0.60	0.60	0.60	0.55	0.60	0.65	0.65	0.70	0.70	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.70	0.70	0.70	0.70
17	OGE Energy Corp.	0.75	0.80	0.80	0.85	0.85	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.85
18	Pinnacle West Capital Corporation	0.55	0.55	0.55	0.55	0.60	0.65	0.65	0.70	0.70	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.70
19	Portland General Electric Company	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.75
20		0.50	0.50	0.50	0.50	0.50	0.50	0.55	0.65	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.60	0.60	0.55	0.60	0.55	0.55	0.60
21	Xcel Energy Inc.	0.50	0.50	0.50	0.50	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.65
22	Average Gas	0.64	0.64	0.64	0.64	0.63	0.65	0.71	0.69	0.71	0.73	0.71	0.72	0.72	0.73	0.73	0.75	0.75	0.79	0.79	0.79	0.78	0.78
23	Average Electric	0.57	0.58	0.58	0.58	0.60	0.63	0.66	0.68	0.68	0.67	0.67	0.68	0.68	0.70	0.72	0.73	0.72	0.72	0.73	0.72	0.73	0.72
24	Average Combined	0.60	0.60	0.61	0.60	0.61	0.64	0.68	0.69	0.69	0.68	0.69	0.69	0.69	0.71	0.73	0.74	0.73	0.74	0.75	0.74	0.74	0.74

Value Line Electric Industry Historical Betas

Line	Company	Average	2Q25	1Q25	4Q24	3Q24	2Q24	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20	2Q20	1Q20
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
	Electric																							
1	ALLETE, Inc.	0.82	0.80	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.60
2	Alliant Energy Corporation	0.78	0.80	0.95	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.55
3	Ameren Corporation	0.75	0.80	0.90	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.85	0.80	0.80	0.85	0.80	0.80	0.50
4	American Electric Power Company, Inc.	0.70	0.70	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.50
5	Avangrid, Inc.	0.70	N/A	N/A	0.95	0.95	0.95	0.95	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	N/A	0.85	0.80	0.80	0.40
6	Avista Corporation	0.81	0.75	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.95	0.60	0.60
7	Black Hills Corporation	0.92	0.90	1.05	1.05	1.05	1.05	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.65	0.70
8	CenterPoint Energy, Inc.	0.97	0.85	1.10	1.15	1.15	1.15	1.15	1.15	1.10	1.10	1.10	1.10	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.10	1.15	0.70
9	CMS Energy Corporation	0.72	0.70	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.75	0.80	0.80	0.80	0.80	0.75	0.80	0.80	0.80	0.50
10	Consolidated Edison, Inc.	0.64	0.65	0.80	0.80	0.80	0.80	0.80	0.75	0.80	0.75	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.40
11	Dominion Resources, Inc.	0.74	0.75	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.50
12	DTE Energy Company	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.50
13	Duke Energy Corporation	0.71	0.70	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.85	0.85	0.85	0.85	0.85	0.45
14	Edison International	0.79	0.90	1.05	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	0.95	0.90	0.90	0.55	0.55
15	Entergy Corporation	0.79	0.80	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.60
16	Evergy, Inc.	0.94	0.75	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.05	NMF
17	Eversource Energy	0.79	0.85	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.55
18	Exelon Corporation	0.77	NMF	0.95	NMF	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.65									
19	FirstEnergy Corp.	0.75	0.75	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.60
20	Fortis Inc.	0.70	0.55	0.75	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.75	N/A	0.80	0.80	0.60
21	Hawaiian Electric Industries, Inc.	0.77	0.95	0.95	0.95	1.00	1.00	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.55	0.55
22	IDACORP, Inc.	0.75	0.75	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.85	0.80	0.80	0.80	0.80	0.50	0.55
23	MGE Energy, Inc.	0.71	0.80	0.80	0.85	0.80	0.80	0.80	0.75	0.75	0.70	N/A	N/A	N/A	N/A	0.75	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.50
24	NextEra Energy, Inc.	0.79	0.90	1.05	1.00	1.05	1.05	1.00	0.95	0.95	0.95	0.95	0.90	0.95	0.90	0.95	0.90	0.95	0.90	0.90	0.90	0.85	0.85	0.50
25	NorthWestern Corporation	0.79	0.80	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.55	0.60
26	OGE Energy Corp.	0.96	0.85	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.05	1.05	1.05	1.05	1.05	1.10	1.05	1.05	0.70
27	Otter Tail Corporation	0.85	0.90	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.85	0.90	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.70
28	PG&E Corporation	0.78	0.95	1.10	1.15	1.10	1.10	1.10	1.05	N/A														
29	Pinnacle West Capital Corporation	0.77	0.80	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.90	0.85	0.85	0.45	0.50
30	TXNM Energy, Inc.	0.81	0.70	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.50	0.60
31	Portland General Electric Company	0.78	0.80	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.55	0.55
32	PPL Corporation	0.88	0.90	1.10	1.10	1.15	1.15	1.10	1.05	1.10	1.05	1.05	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.15	1.10	1.05	0.65
33	Public Service Enterprise Group Incorporated	0.80	0.90	1.00	0.95	0.95	0.95	0.95	0.90	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.90	0.90	0.90	0.60
34	Sempra Energy	0.86	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	1.00	N/A	0.95	1.00	0.95	0.95	0.65	0.70
35	Southern Company	0.73	0.75	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.50
36	WEC Energy Group, Inc.	0.70	0.70	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.45
37	Xcel Energy Inc.	0.69	0.75	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.45	0.50
38	Electric Average	0.78	0.80	0.95	0.94	0.94	0.94	0.93	0.91	0.90	0.88	0.88	0.88	0.89	0.88	0.89	0.90	0.90	0.89	0.89	0.89	0.88	0.77	0.56

Value Line Natural Gas Industry

Historical Betas

Line	Company	Average	2Q25	1Q25	4Q24	3Q24	2Q24	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20	2Q20	1Q20
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
	Natural Gas																							
1	Atmos Energy Corporation	0.76	0.75	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.55
2	Chesapeake Utilities Corporation	0.73	0.75	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.75	0.80	0.80	0.80	0.75	0.80	0.80	0.80	N/A	N/A	N/A	N/A	N/A	N/A
3	New Jersey Resources Corporation	0.86	0.85	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.90	0.90	0.65
4	NiSource Inc.	0.78	0.85	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.85	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.55
5	Northwest Natural Gas Company	0.74	0.80	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.55
6	ONE Gas, Inc.	0.76	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.60
7	Southwest Gas Corporation	0.83	0.80	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.85	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.65
8	Spire Inc.	0.76	0.80	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.80	0.85	0.85	0.80	0.80	0.85	0.85	0.85	0.85	0.85	1.00	0.80	0.80	0.60
9	UGI Corporation	0.97	1.10	1.15	1.15	1.10	1.10	1.10	1.10	1.05	1.05	1.05	1.05	1.00	1.05	1.05	1.05	1.05	N/A	N/A	1.00	1.00	0.95	0.75
10	Natural Gas Average	0.80	0.83	0.94	0.93	0.91	0.91	0.89	0.89	0.88	0.86	0.88	0.87	0.86	0.86	0.88	0.88	0.88	0.87	0.86	0.89	0.86	0.85	0.61

Source: Value Line Software Analyzer

Value Line Water Industry

Historical Betas

Line	Company	Average	2Q25	1Q25	4Q24	3Q24	2Q24	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20	2Q20	1Q20
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
	Water																							
1	American States Water Company	0.70	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.65	0.70	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
2	American Water Works Company, Inc.	0.77	0.85	1.00	1.00	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
3	California Water Service Group	0.72	0.85	0.75	0.75	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.70	0.65	0.65	0.70	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
4	Essential Utilities, Inc.	0.83	0.90	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	N/A	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90
5	Middlesex Water Company	0.73	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.70	0.75	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
6	SJW Group	0.76	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
7	Water Average	0.75	0.83	0.86	0.85	0.83	0.83	0.83	0.83	0.78	0.80	0.78	0.78	0.77	0.77	0.74	0.77	0.77	0.77	0.77	0.76	0.76	0.76	0.76

Value Line Electric Industry Historical Betas

Line	Company	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17	4Q16	3Q16	2Q16	1Q16	4Q15	3Q15	2Q15	1Q15	4Q14
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	Electric																					
1	ALLETE, Inc.	0.65	0.65	0.65	0.65	0.65	0.70	0.75	0.75	0.80	0.75	0.80	0.80	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80
2	Alliant Energy Corporation	0.60	0.60	0.60	0.65	0.60	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80
3	Ameren Corporation	0.55	0.55	0.60	0.60	0.55	0.60	0.65	0.65	0.70	0.65	0.65	0.70	0.65	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75
4	American Electric Power Company, Inc.	0.55	0.55	0.55	0.55	0.55	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70
5	Avangrid, Inc.	0.40	0.40	0.40	0.40	0.30	0.30	0.40	0.35	NMF	NMF	NMF	NMF	NMF	N/A							
6	Avista Corporation	0.60	0.60	0.65	0.65	0.65	0.70	0.70	0.75	0.75	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80
7	Black Hills Corporation	0.70	0.75	0.80	0.75	0.80	0.85	0.90	0.90	0.90	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90
8	CenterPoint Energy, Inc.	0.80	0.80	0.80	0.80	0.85	0.85	0.90	0.85	0.90	0.90	0.85	0.85	0.85	0.80	0.85	0.85	0.85	0.80	0.80	0.80	0.75
9	CMS Energy Corporation	0.50	0.55	0.55	0.55	0.55	0.55	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.75	0.75	0.70	0.75	0.75	0.70
10	Consolidated Edison, Inc.	0.45	0.45	0.45	0.45	0.45	0.45	0.50	0.50	0.50	0.50	0.50	0.55	0.55	0.55	0.55	0.55	0.60	0.60	0.60	0.60	0.60
11	Dominion Resources, Inc.	0.55	0.55	0.55	0.55	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.70	0.65	0.70	0.70	0.70	0.78	0.70	0.70	0.70	0.70
12	DTE Energy Company	0.55	0.55	0.55	0.55	0.55	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.75	0.75	0.75	0.75	0.75	0.75
13	Duke Energy Corporation	0.50	0.50	0.50	0.50	0.55	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.50	0.60	0.60	0.60	0.60
14	Edison International	0.60	0.60	0.60	0.55	0.60	0.60	0.60	0.65	0.65	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75
15	Entergy Corporation	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.65	0.70	0.70	0.70
16	Evergy, Inc.	NMF	NMF	NMF	NMF	NMF	NMF	N/A														
17	Eversource Energy	0.55	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75
18	Exelon Corporation	0.70	0.70	0.70	0.70	0.65	0.65	0.70	0.70	0.70	0.70	0.65	0.70	0.65	0.70	0.65	0.70	0.70	0.65	0.70	0.70	0.70
19	FirstEnergy Corp.	0.65	0.60	0.65	0.65	0.60	0.60	0.65	0.70	0.70	0.65	0.65	0.65	0.65	0.65	0.70	0.65	0.70	0.65	0.70	0.70	0.70
20	Fortis Inc.	0.60	0.65	0.65	0.65	0.60	0.65	0.70	0.70	0.70	0.70	0.65	0.65	0.65	N/A							
21	Hawaiian Electric Industries, Inc.	0.55	0.55	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80
22	IDACORP, Inc.	0.55	0.60	0.60	0.55	0.60	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80
23	MGE Energy, Inc.	0.55	0.55	0.55	0.60	0.60	0.65	0.70	0.70	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.70	0.70
24	NextEra Energy, Inc.	0.55	0.55	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.75	0.70	0.75	0.70	0.70
25	NorthWestern Corporation	0.60	0.60	0.60	0.55	0.60	0.65	0.65	0.70	0.70	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.70	0.70	0.70
26	OGE Energy Corp.	0.75	0.80	0.80	0.85	0.85	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90
27	Otter Tail Corporation	0.70	0.65	0.70	0.70	0.75	0.80	0.85	0.85	0.90	0.90	0.90	0.85	0.85	0.85	0.80	0.85	0.85	0.85	0.90	0.90	0.90
28	PG&E Corporation	N/A	N/A	N/A	N/A	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.65	0.65	0.65	0.65	0.65
29	Pinnacle West Capital Corporation	0.55	0.55	0.55	0.55	0.60	0.65	0.65	0.70	0.70	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.70	0.70	0.70	0.70
30	TXNM Energy, Inc.	0.60	0.60	0.65	0.65	0.60	0.75	0.70	0.75	0.75	0.75	0.70	0.75	0.75	0.80	0.80	0.80	0.85	0.85	0.85	0.85	0.85
31	Portland General Electric Company	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80
32	PPL Corporation	0.70	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.65	0.65	0.65	0.60
33	Public Service Enterprise Group Incorporated	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.65	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75
34	Sempra Energy	0.75	0.75	0.75	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.80	0.80	0.80	0.80	0.75	0.75
35	Southern Company	0.50	0.50	0.50	0.50	0.50	0.50	0.55	0.65	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.60	0.60	0.55	0.60	0.55	0.55
36	WEC Energy Group, Inc.	0.50	0.50	0.50	0.55	0.50	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.65	0.65
37	Xcel Energy Inc.	0.50	0.50	0.50	0.50	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70
38	Electric Average	0.59	0.60	0.61	0.61	0.61	0.64	0.68	0.69	0.70	0.69	0.69	0.70	0.69	0.71	0.73	0.74	0.75	0.74	0.75	0.74	0.73

Value Line Natural Gas Industry Historical Betas

Line	Company	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17	4Q16	3Q16	2Q16	1Q16	4Q15	3Q15	2Q15	1Q15	4Q14
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	Natural Gas																					
1	Atmos Energy Corporation	0.60	0.60	0.65	0.60	0.60	0.60	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.85	0.85	0.85	0.80
2	Chesapeake Utilities Corporation	N/A	N/A	0.65	0.70	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.65	0.60	0.60	0.65	0.65	0.65	0.65	NA	0.65
3	New Jersey Resources Corporation	0.70	0.70	0.70	0.70	0.70	0.70	0.80	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.80	0.80	0.80
4	NiSource Inc.	0.55	0.55	0.55	0.55	0.50	0.55	0.60	0.60	0.60	NMF	0.65	NMF	0.85	0.85	0.85						
5	Northwest Natural Gas Company	0.60	0.60	0.60	0.65	0.60	0.65	0.70	0.65	0.70	0.70	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70
6	ONE Gas, Inc.	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	N/A									
7	Southwest Gas Corporation	0.70	0.70	0.70	0.70	0.70	0.75	0.80	0.75	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.80	0.80	0.85	0.85	0.85	0.85
8	Spire Inc.	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
9	UGI Corporation	N/A	N/A	0.80	0.80	0.80	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.90	0.85
10	Natural Gas Average	0.64	0.64	0.66	0.67	0.65	0.68	0.73	0.71	0.73	0.74	0.73	0.74	0.74	0.74	0.74	0.76	0.76	0.79	0.79	0.81	0.78

Source: Value Line Software Analyzer

Value Line Water Industry

Historical Betas

Line	Company	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17	4Q16	3Q16	2Q16	1Q16	4Q15	3Q15	2Q15	1Q15	4Q14
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	Water																					
1	American States Water Company	0.65	0.65	0.65	0.65	0.75	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
2	American Water Works Company, Inc.	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70
3	California Water Service Group	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.70
4	Essential Utilities, Inc.	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.70
5	Middlesex Water Company	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.70
6	SJW Group	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.75	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.85
7	Water Average	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.73	0.73	0.73	0.73	0.73

CAPM Return

<u>Line</u>	<u>Description</u>	CAPM <u>Parameters</u> (2)
1	Risk-Free Rate ¹	4.60%
2	Risk Premium ²	6.82%
3	Beta ³	0.77
4	CAPM	9.85%

Sources:

¹ Blue Chip Financial Forecasts, July 1, 2025.

² Morningstar Direct.

³ Exhibit MPG-16, Page 1.

Standard & Poor's Credit Metrics

(Kentucky Utilities Company)

		С	ost of Service		S&P Benchm	ark	
Line	<u>Description</u>		Amount	Intermediate	Significant (2)	<u>Aggressive</u>	Reference
			(1)	(2)	(3)	(4)	(5)
1	Rate Base	\$	6,186,741,227				Schedule A.
2	Weighted Common Return		5.02%				Page 2, Line 3, Col. 4.
3	Pre-Tax Rate of Return		9.03%				Page 2, Line 4, Col. 5.
4	Income to Common	\$	310,665,659				Line 1 x Line 2.
5	EBIT	\$	558,836,478				Line 1 x Line 3.
6	Depreciation & Amortization	\$	421,404,049				Schedule C-1.
7	Imputed Amortization	\$	16,119,600				S&P Capital IQ, downloaded August 13, 2025.
8	Capitalized Interest	\$	(36,212,513)				Response to DOD_DR1_KU_Q-12.
9	Deferred Income Taxes & ITC	\$	-				N/A.
10	Funds from Operations (FFO)	\$	711,976,795				Sum of Line 4 and Lines 6 through 9.
11	Imputed Interest Expense	\$	4,039,888				S&P Capital IQ, downloaded August 13, 2025.
12	EBITDA	\$	1,000,400,015				Sum of Lines 5 through 7 and Line 11.
13	Adjusted Debt	\$	2,523,686,011				Page 3, Line 3, Col. 1
14	Total Adjusted Debt Ratio		48.1%				Page 3, Line 4, Col 2.
15	Debt to EBITDA		2.5x	2.5x - 3.5x	3.5x - 4.5x	4.5x - 5.5x	Line 13 / Line 12.
16	FFO to Total Debt		28%	23% - 35%	13% - 23%	9% - 13%	Line 10 / Line 13.
17	Indicative Credit Rating			Α	Α-	ВВВ	S&P Methodology, November 19, 2013.

Sources:

Standard & Poor's: "Criteria: Corporate Methodology," November 19, 2013.

Note:

KU has an S&P credit rating of A- with an "Excellent" business risk and a "Significant" financial risk profile assessed under the medial volatility table.

S&P	Business/Financia	l Risk Profile Ma	atrix
Business Risk	Fi	nancial Risk Pro	file
Profile	4 (intermediate)	4 (significant)	5 (aggressive)
1 (excellent)	a+/a	a-	bbb
2 (strong)	a-/bbb+	bbb	bb+
3 (satisfactory)	bbb/bbb-	bbb-/bb+	bb

Standard & Poor's Credit Metrics

(Louisville Gas & Electric Company)

		С	ost of Service		S&P Benchm	ark	_
Line	<u>Description</u>		Amount	Intermediate	Significant (2)	Aggressive (4)	Reference
			(1)	(2)	(3)	(4)	(5)
1	Rate Base	\$	5,144,452,329				Schedule A Total.
2	Weighted Common Return		5.03%				Page 2, Line 7, Col. 4.
3	Pre-Tax Rate of Return		9.05%				Page 2, Line 8, Col. 5.
4	Income to Common	\$	258,675,399				Line 1 x Line 2.
5	EBIT	\$	465,594,580				Line 1 x Line 3.
6	Depreciation & Amortization	\$	421,404,049				Schedule C-1.
7	Imputed Amortization	\$	16,000,000				S&P Capital IQ, downloaded August 13, 2025.
8	Capitalized Interest	\$	(42,280,208)				Response to DOD_DR1_KU_Q-12.
9	Deferred Income Taxes & ITC	\$	-				N/A.
10	Funds from Operations (FFO)	\$	653,799,240				Sum of Line 4 and Lines 6 through 9.
11	Imputed Interest Expense	\$	16,000,000				S&P Capital IQ, downloaded August 13, 2025.
12	EBITDA	\$	918,998,629				Sum of Lines 5 through 7 and Line 11.
13	Adjusted Debt	\$	2,523,686,011				Page 3, Line 3, Col. 1
14	Total Adjusted Debt Ratio		48.1%				Page 3, Line 4, Col 2.
15	Debt to EBITDA		2.7x	2.5x - 3.5x	3.5x - 4.5x	4.5x - 5.5x	Line 13 / Line 12.
16	FFO to Total Debt		26%	23% - 35%	13% - 23%	9% - 13%	Line 10 / Line 13.
17	Indicative Credit Rating			Α	Α-	ввв	S&P Methodology, November 19, 2013.

Sources:

Standard & Poor's: "Criteria: Corporate Methodology," November 19, 2013.

Note:

LGE has an S&P credit rating of A- with an "Excellent" business risk and a "Significant" financial risk profile assessed under the medial volatility table.

S&P Business/Financial Risk Profile Matrix								
Business Risk	Financial Risk Profile							
Profile	4 (intermediate)	4 (significant)	5 (aggressive)					
1 (excellent)	a+/a	a-	bbb					
2 (strong)	a-/bbb+	bbb	bb+					
3 (satisfactory)	bbb/bbb-	bbb-/bb+	bb					

Standard & Poor's Credit Metrics (Pre-Tax Rate of Return)

Kentucky Utilities Company

Line	<u>Description</u>	Amount (1)	Weight (2)	<u>Cost</u> (3)	Weighted <u>Cost</u> (4)	Pre-Tax Weighted <u>Cost</u> (5)
1	Short-Term Debt	\$ 157,536,900	2.55%	4.46%	0.11%	0.11%
2	Long-Term Debt	\$ 2,759,039,499	44.60%	4.93%	2.20%	2.20%
3	Common Equity	\$ 3,270,164,828	52.86%	9.50%	<u>5.02%</u>	6.72%
4	Total	\$ 6,186,741,227	100.00%		7.34%	9.03%

Louisville Gas & Electric Company

							Pre-Tax
						Weighted	Weighted
<u>Line</u>	Description		<u>Amount</u>	<u>Weight</u>	Cost	Cost	Cost
			(1)	(2)	(3)	(4)	(5)
5	Short-Term Debt	\$	88,225,863	1.71%	4.46%	0.08%	0.08%
6	Long-Term Debt	\$	2,333,327,528	45.36%	4.95%	2.25%	2.25%
7	Common Equity	\$	2,722,898,938	<u>52.93%</u>	9.50%	<u>5.03%</u>	<u>6.73%</u>
8	Total	\$	5,144,452,329	100.00%		7.35%	9.05%
9	Tax Conversion Fac	ctor*					1.33809

Sources:

Schedule J-1.1/J-1.2.

*Schedule A-1.

Standard & Poor's Credit Metrics (Financial Capital Structure)

		KU		LG&E			
<u>Line</u>	Description	Amount	Weight		<u>Amount</u>	Weight	
		(1)	(2)		(3)	(4)	
1	Short-Term Debt	\$ 157,536,900	2.52%	\$	88,225,863	1.68%	
2	Long-Term Debt	\$2,759,039,499	44.11%	\$	2,333,327,528	44.47%	
3	Off-Balance Sheet Debt*	\$ 68,566,497	<u>1.10</u> %	\$	102,132,621	<u>1.95</u> %	
4	Total Debt	\$ 2,985,142,896	47.72%	\$	2,523,686,011	48.10%	
5	Common Equity	\$3,270,164,828	52.28%	\$	2,722,898,938	<u>51.90%</u>	
6	Total	\$6,255,307,724	100.00%	\$	5,246,584,950	100.00%	

Sources:

Schedule J-1.1/J-1.2.

*S&P Capital IQ, dowloaded August 13, 2025.

D'Ascendis' Revised Multi-Stage Growth DCF Model

		60-Day AVG	Annualized	First Stage	Second Stage Growth				Third Stage	Multi-Stage	
Line	Company	Stock Price1	Dividend ²	Growth ³	Year 6	Year 7	Year 8	Year 9	Year 10	Growth⁴	Growth DCF
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<u>Gas</u>										
1	Atmos Energy Corporation	\$142.74	\$3.48	6.85%	6.39%	5.93%	5.48%	5.02%	4.56%	4.10%	7.12%
2	New Jersey Resources Corporation	\$47.15	\$1.80	5.45%	5.23%	5.00%	4.78%	4.55%	4.33%	4.10%	8.42%
3	NiSource Inc.	\$37.55	\$1.12	8.54%	7.80%	7.06%	6.32%	5.58%	4.84%	4.10%	8.20%
4	Northwest Natural Holding Company	\$40.50	\$1.96	6.00%	5.68%	5.37%	5.05%	4.73%	4.42%	4.10%	9.75%
5	ONE Gas, Inc.	\$71.04	\$2.68	3.78%	3.83%	3.89%	3.94%	3.99%	4.05%	4.10%	7.95%
6	Southwest Gas Holdings, Inc.	\$73.67	\$2.48	9.05%	8.23%	7.40%	6.58%	5.75%	4.93%	4.10%	8.85%
7	Spire Inc.	\$70.27	\$3.14	5.71%	5.44%	5.17%	4.91%	4.64%	4.37%	4.10%	9.23%
8	Average	\$68.99	\$2.38	6.48%	6.09%	5.69%	5.29%	4.89%	4.50%	4.10%	8.50%
9	Median	\$70.27	\$2.48	6.00%	5.68%	5.37%	5.05%	4.73%	4.42%	4.10%	8.42%
	Electric										
10	Alliant Energy Corporation	\$60.07	\$2.03	6.38%	6.00%	5.62%	5.24%	4.86%	4.48%	4.10%	8.16%
11	Ameren Corporation	\$93.16	\$2.84	6.66%	6.23%	5.81%	5.38%	4.95%	4.53%	4.10%	7.83%
12	American Electric Power Company, Inc.	\$97.27	\$3.72	6.36%	5.98%	5.61%	5.23%	4.85%	4.48%	4.10%	8.68%
13	Duke Energy Corporation	\$111.01	\$4.18	6.21%	5.86%	5.51%	5.16%	4.80%	4.45%	4.10%	8.57%
14	Edison International	\$66.01	\$3.31	7.75%	7.14%	6.53%	5.93%	5.32%	4.71%	4.10%	10.57%
15	Entergy Corporation	\$79.33	\$2.40	6.13%	5.79%	5.45%	5.12%	4.78%	4.44%	4.10%	7.68%
16	Evergy, Inc.	\$63.65	\$2.67	6.36%	5.98%	5.61%	5.23%	4.85%	4.48%	4.10%	9.12%
17	IDACORP, Inc.	\$111.15	\$3.44	7.13%	6.63%	6.12%	5.62%	5.11%	4.61%	4.10%	8.00%
18	NorthWestern Corporation	\$53.30	\$2.64	5.44%	5.22%	4.99%	4.77%	4.55%	4.32%	4.10%	9.69%
19	OGE Energy Corp.	\$42.46	\$1.69	6.23%	5.88%	5.52%	5.17%	4.81%	4.46%	4.10%	8.81%
20	Pinnacle West Capital Corporation	\$87.48	\$3.58	5.33%	5.13%	4.92%	4.72%	4.51%	4.31%	4.10%	8.70%
21	Portland General Electric Company	\$43.12	\$2.00	8.54%	7.80%	7.06%	6.32%	5.58%	4.84%	4.10%	10.38%
22	The Southern Company	\$84.36	\$2.88	6.64%	6.22%	5.79%	5.37%	4.95%	4.52%	4.10%	8.27%
23	TXNM Energy	\$48.96	\$1.63	4.23%	4.21%	4.19%	4.17%	4.14%	4.12%	4.10%	7.59%
24	Xcel Energy Inc.	\$67.80	\$2.28	6.92%	6.45%	5.98%	5.51%	5.04%	4.57%	4.10%	8.28%
25	Average	\$73.94	\$2.75	6.42%	6.03%	5.65%	5.26%	4.87%	4.49%	4.10%	8.69%
26	Median	\$67.80	\$2.67	6.36%	5.98%	5.61%	5.23%	4.85%	4.48%	4.10%	8.57%

Sources

¹ 2025 PSC DR1 KU LGE Attach to Q54 - D'Ascendis Direct Testimony Exhibits and Workpapers, Proxy Prices tab.

² 2025 PSC DR1 KU LGE Attach to Q54 - D'Ascendis Direct Testimony Exhibits and Workpapers, Proxy Prices tab.

³ Exhibit DWD-3, column 6, page 1 of 23.

⁴ Blue Chip Financial Forecasts, June 2, 2025 at page 14.