Exhibit No.:	
Issue(s):	*Rate of Return*
Witness:	*Seoung Joun Won, PhD*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Rebuttal Testimony*
Case No.:	*GR-2024-0369*
Date Testimony Prepared:	*April 4, 2025*

MISSOURI PUBLIC SERVICE COMMISSION

FINANCIAL AND BUSINESS ANALYSIS DIVISION

FINANCIAL ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

SEOUNG JOUN WON, PhD

UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI

Case No. GR-2024-0369

Jefferson City, Missouri
April 4, 2025

****** Denotes Confidential Information ******

TABLE OF CONTENTS OF

REBUTTAL TESTIMONY OF

SEOUNG JOUN WON, PhD

UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI

CASE NO. GR-2024-0369

I. EXECUTIVE SUMMARY 2

II. RESPONSE TO TESTIMONY OF AMEREN MISSOURI WITNESSES 4

1. Proposed ROE 5

2. Proxy Group Criteria 7

3. Growth Rates for Discounted Cash Flow Models 10

4. Market Return of Capital Asset Pricing Models 12

5. Empirical Capital Asset Pricing Model 17

6. Bond Yield Risk Premium Analysis 18

7. Recalculated Ms. Bulkley's COE Estimates 22

8. Authorized ROEs 23

9. Regulatory and Business Risks 27

10. Cost of Capital and Capital Structure 30

III. RESPONSE TO TESTIMONY OF OPC WITNESS 34

1. Recommended ROE 34

2. Capital Structure 36

IV. SUMMARY AND CONCLUSIONS 42

REBUTTAL TESTIMONY

OF

SEOUNG JOUN WON, PhD

UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI

CASE NO. GR-2024-0369

Q. Please state your name and business address.

A. My name is Seoung Joun Won and my business address is P.O. Box 360, Jefferson City, Missouri 65102.

Q. Who is your employer and what is your present position?

A. I am employed by the Missouri Public Service Commission ("Commission") as a member of the Commission's Staff ("Staff") and my title is Regulatory Compliance Manager for the Financial Analysis Department, in the Financial and Business Analysis Division.

Q. Are you the same Seoung Joun Won who filed Direct Testimony on February 28, 2025?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimonies of Ann E. Bulkley, Darryl T. Sagel, and David Murray regarding rate of return ("ROR") related issues including return on equity ("ROE") and capital structure. Ms. Bulkley and Mr. Sagel sponsored testimonies on behalf of Union Electric Company, d/b/a Ameren Missouri ("Ameren Missouri"), a subsidiary of Ameren Corporation ("Ameren Corp."). Mr. Murray sponsored testimonies on behalf of the Missouri Office of the Public Counsel ("OPC").

I. EXECUTIVE SUMMARY

Q. What is the overview of your response to the testimonies of Ameren Missouri's witnesses, Ms. Bulkley and Mr. Sagel?

A. The Staff's rebuttal will focus on the overall ROR, incorporating Ms. Bulkley's ROE estimation and Mr. Sagel's cost of capital components, which include long-term debt cost, preferred stock cost, and capital structure. Ms. Bulkley proposed an ROE of 10.25% within a range of 10.25% to 11.25%.[1] Mr. Sagel proposed an ROR of 7.40%, based on the projected capital structure and cost of capital of Ameren Missouri as of December 31, 2024.[2] This proposed ROR consisted of ** [redacted] **.[3]

During the review process, Staff discerned that Ms. Bulkley introduced a series of biased estimates for her cost of equity ("COE"), resulting in an overstated ROE recommendation.[4] Ms. Bulkley overestimated her COE by using inflated input data and improper estimation methods in her direct testimony. In this rebuttal testimony, Staff will provide a detailed explanation of how Ms. Bulkley used unreasonable and upwardly-biased input data in the Constant Growth form of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and the Bond Yield Risk Premium ("BYRP" or "Risk Premium") analysis.[5]

[1] Page 8, lines 11-14, Bulkley's Direct Testimony.
[2] Page 16, lines 14-15, Sagel's Direct Testimony.
[3] Table 2 (Page 11) and Schedule DTS-D1, Sagel's Direct Testimony.
[4] Ms. Bulkley incorrectly used the terms ROE and COE interchangeably (e.g. Footnote No. 1 of page 4 in her direct testimony for ER-2024-0319). As explained in Footnote No. 2 of Won's Direct Testimony, COE is the return required by investors; ROE is the return set by a regulatory utility commission.
[5] Page 6, lines 11-14, Bulkley's Direct Testimony.

Mr. Sagel's proposed ROR is based on Ameren Missouri's projected capital structure, which reflects a reasonable balance between the cost of capital and financial strength and stability,[6] and cost of debt as of December 31, 2024,[7] along with Ms. Bulkley's recommended ROE of 10.25%.[8] For ratemaking purposes, Mr. Sagel asserted that he proposed a projected embedded cost of debt of ** [redacted] **.[9] However, Staff found that it exceeds Ameren Missouri's actual embedded cost of debt, which was 4.30% as of December 31, 2024.[10]

At this time, Staff will not address any major issues regarding the projected standalone capital structures of Ameren Missouri. Currently, the updated changes to Ameren Missouri's and Ameren Corp's true-up capital structures are under review. Staff will make a final recommendation in subsequent testimony filings after investigating the reasons for the changes in Ameren Missouri's actual capital structure and its actual embedded cost of capital. Staff's analyses and conclusions are supported by the data presented in Staff's rebuttal workpapers.

Q. What is the overview of your response to the testimony of Mr. Murray?

A. Mr. Murray recommended an ROE of 9.50% within a range of 9.00% to 9.50% and a ROR of 6.38% based on his recommended use of Ameren Corp.'s capital structure of 42.00% common equity, 0.60% preferred stock and 57.40% long-term debt and applying Ameren Missouri's cost of preferred stock of 4.18% and embedded cost of long-term debt of 4.12%.[11]

[6] Page 7, lines 13-14, Sagel's Direct Testimony.
[7] Page 10, lines 16-17, Sagel's Direct Testimony.
[8] Page 16, lines 12-15, Sagel's Direct Testimony and Page 10, lines 2-4, Bulkley's Direct Testimony.
[9] Schedule DTS-D1, Sagel's Direct Testimony.
[10] Staff's Data Request No. 0113.
[11] Page 2, lines 3-5, and Schedule DM-D-9, Murray's Direct Testimony.

Mr. Murray's recommended equity ratio of 42.00% is significantly lower than Ameren Missouri's recent common equity ratios, which have an approximate average of 51.87% in 2024.[12] Staff does not have any major concerns with Mr. Murray's recommended ROE of 9.50% because it falls within Staff's reasonable recommended range of 9.39% to 9.89%.[13] Staff expresses concern with Mr. Murray's recommended capital structure using Ameren Corp.'s capital structure ratios instead of Ameren Missouri's.

After reviewing the updated changes to Ameren Missouri's and Ameren Corp's true-up capital structures, Staff will make a final recommendation in subsequent testimony filings after investigating the reasons for the changes in Ameren Missouri's actual capital structure and its actual embedded cost of capital.

II. RESPONSE TO TESTIMONY OF AMEREN MISSOURI WITNESSES

Q. What are the specific areas in which Staff is responding to Ameren Missouri's witnesses?

A. Staff is responding to the testimonies of Ms. Bulkley and Mr. Sagel. The areas in which Staff addresses issues of Ms. Bulkley's direct testimony include:

- Proposed ROE,
- Proxy Group Criteria,
- Growth Rates for DCF Model,
- Market Risk Premium for CAPM,
- Empirical CAPM Method,
- BYRP Analysis, and
- Regulatory and Business Risks.

[12] Table 2 (Page 38), Won's Direct Testimony.
[13] Page 4, line 1, Won's Direct Testimony.

Then, Staff will briefly address Mr. Sagel's proposed ratemaking capital structure. Staff will discuss each in turn, below.

1. Proposed ROE

Q. What is Ms. Bulkley's proposed ROE for Ameren Missouri in this proceeding?

A. Ms. Bulkley proposed an ROE of 10.25%, within a range of 10.25% to 11.25%, for use in this proceeding.[14]

Q. How did Ms. Bulkley determine her proposed ROE?

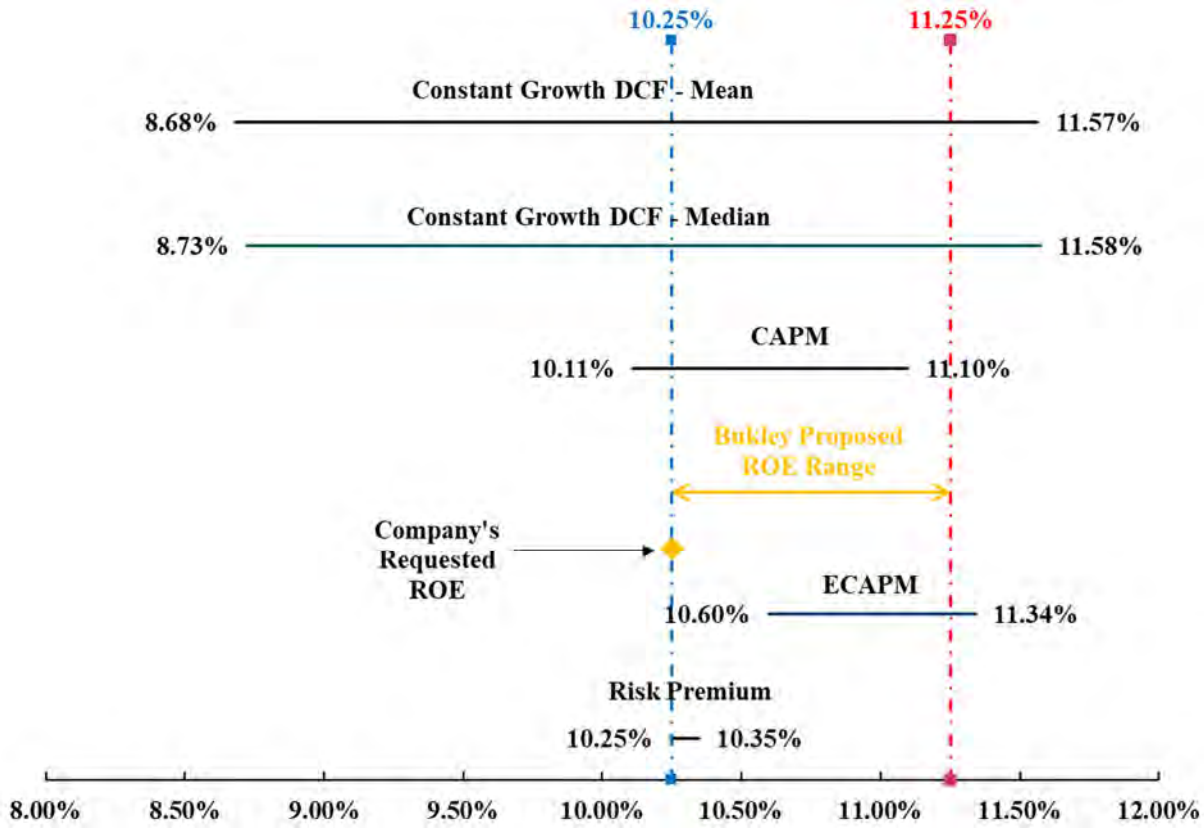
A. Ms. Bulkley determined her proposed ROE from a range of the results of her COE estimates. Ms. Bulkley calculated a COE estimate range of 8.68% to 11.58%.[15] For her proposed ROE, Ms. Bulkley considered company-specific risk factors along with current and prospective capital market conditions.[16] However, Ms. Bulkley did not precisely state her procedure for selecting the recommended ROE point estimation of 10.25% or the ends of her reasonable ROE range of 10.25% to 11.25% from within her COE estimate analytic results of 8.68% to 11.58%.[17]

Q. How did Ms. Bulkley estimate her COE?

A. Ms. Bulkley applied COE estimation models such as constant-growth DCF, the CAPM, the ECAPM, and the BYRP to her Natural Gas Service ("NGS") utility proxy group.[18] Ms. Bulkley's estimated COE for each analysis method and proposed ROE are summarized in Figure 1:[19]

[14] Page 8, lines 11-14, Bulkley's Direct Testimony.
[15] Schedule AEB-D2, Attachment 1, Bulkley's Direct Testimony.
[16] Page 8, lines 4-7, Bulkley's Direct Testimony.
[17] Figure 1 (Page 7) and Schedule AEB-D2, Attachment 1, Bulkley's Direct Testimony.
[18] Page 6, lines 11-14, Bulkley's Direct Testimony.
[19] Figure 1 (Page 7) and Schedule AEB-D2, Attachment 1, Bulkley's Direct Testimony.

Figure 1. Ms. Bulkley's COE Estimates and Proposed ROE



Q. What are Staff's concerns with Ms. Bulkley's recommended ROE?

A. Staff's concern is that Ms. Bulkley's recommended ROE of 10.25% is too high compared to the average authorized ROE of 9.72% for NGS utility rate cases completed in 2024.[20] Ms. Bulkley's recommended ROE is based on her overstated COE estimates. Ms. Bulkley presented unreasonable COE estimation procedures using exaggerated input values for her COE estimation models. Ms. Bulkley utilized a variety of data sources and analysis methods to produce inflated input values.

[20] S&P Capital IQ Pro, Retrieved on March 7, 2025.

The following summarizes the steps that led to Ms. Bulkley's overestimation of her COE:

1. Selecting inappropriate biased data,
2. Producing overestimated input values, and
3. Utilizing inadequate estimation methods.

Staff will describe how each of Ms. Bulkley's COE estimates are overstated by presenting detailed investigation results later in this testimony.

2. Proxy Group Criteria

Q. What is Ms. Bulkley's proxy group for estimating Ameren Missouri's COE?

A. Ms. Bulkley selected six (6) NGS utility companies for her proxy group for Ameren Missouri's COE estimation.[21] Ms. Bulkley selected her NGS utility proxy group from companies classified by Value Line Investment Survey ("Value Line") as Natural Gas Distribution Utilities, using six (6) screening criteria during the selection process.[22] The following is the list of Ms. Bulkley's NGS utility proxy group, associated ticker symbols, and Standard & Poor's ("S&P") issuer credit ratings:

Table 1. Natural Gas Utility Proxy Group and Ticker[23]

	Company	Ticker	S&P
1	Atmos Energy Corporation	ATO	A-
2	NiSource Inc.	NI	BBB+
3	Northwest Natural Gas Company	NWN	A
4	ONE Gas, Inc.	OGS	A-
5	Southwest Gas Corporation	SWX	BBB-
6	Spire, Inc.	SR	BBB+

[21] Figure 6 (Page 22) and Schedule AEB-D2, Attachment 2, Bulkley's Direct Testimony.
[22] Pages 21-22 and Schedule AEB-D2, Attachment 2, Bulkley's Direct Testimony.
[23] Figure 6 (Page 22) and Schedule AEB-D2, Attachment 2, Bulkley's Direct Testimony.

Q. What is Staff's concern with Ms. Bulkley's proxy group selection?

A. Staff's concern with Ms. Bulkley's proxy group is that her screening criteria did not include whether a company's dividends had been reduced. When selecting a proxy group for this proceeding, it is crucial to assess whether the proxy company has a comparable risk to Ameren Missouri's regulated NGS. A company's history of dividend reductions or negative growth rates can significantly impact the assessment of its risk and financial performance.

One of Ms. Bulkley's proxy companies, NiSource Inc. ("NI"), reported dividend reductions in two consecutive years, 2015 and 2016, as well as a negative book value and dividend growth rates of -3.0% and -0.5%, respectively.[24] One of the necessary assumptions of the DCF model is that the company's dividends or cash flows increase at a constant rate forever.[25] Ms. Bulkley utilized the DCF model for COE estimation, but NI had financial records showing several instances of decreased revenue per share and dividend per share over the past ten years.[26]

Q. How does a past decrease in dividends impact the estimation of the COE in a proxy group?

A. A past decrease in dividends can impact the estimation of the COE in a proxy group through multiple channels, affecting both investor perception and key financial metrics used in COE calculations. First, a dividend reduction may indicate financial instability, increased earnings volatility, or shifting capital allocation priorities. Investors may perceive higher risk, leading to an increased required return and, consequently, a higher estimated COE.

[24] Value Line Report, Published November 22, 2024.
[25] Koller, T., Goedhart, M., & Wessels, D. (2010). Valuation: measuring and managing the value of companies. John Wiley & Sons.
[26] Value Line Report, Published November 22, 2024.

Second, if the COE is estimated using the Dividend Discount Model ("DDM") such as a constant growth DCF model, which is used by both Ms. Bulkley and Staff, a past dividend decrease lowers expected future dividends (D) and may signal a lower growth rate (g). These factors can lead to an inflated COE estimate when applying the constant growth DCF model:[27]

$$k = (1 + 0.5g)D \,/\, P \; + \; g.$$

where k is investors' required return from the stock,
D is the current dividend,
P is the common stock price, and
g is the expected growth rate in dividend,

Third, a history of dividend reductions can signal weakened financial performance or a shift away from shareholder returns, which may increase the equity risk premium. A higher risk premium leads to a higher estimated COE. In addition, dividend cuts can lead to increased stock price volatility, raising the firm's beta (β). Since beta is a key input in the CAPM, a higher beta results in a higher estimated COE: [28]

$$k = R_f + \beta(R_m - R_f)$$

where, k is the expected return on equity for a security,
R_f is the risk-free rate,
R_m is the expected market return,
β is beta, and
$R_m - R_f$ is the market risk premium,

If multiple firms in the proxy group exhibit increased volatility due to dividend reductions, the group's average beta may be inflated, potentially overestimating the COE.

[27] Pages 41-43, Won's Direct Testimony.
[28] Pages 43-45, Won's Direct Testimony.

Therefore, if a proxy group includes firms with a history of dividend cuts, their COE estimates may not accurately reflect the COE for a firm with stable dividends. Including NI in the proxy group in this proceeding introduces bias in the COE estimation, making it inappropriate with respect to commensurate risk.

3. Growth Rates for Discounted Cash Flow Models

Q. What is Staff's concern with Ms. Bulkley's constant-growth DCF model?

A. Ms. Bulkley used unreasonably high growth rates in her constant-growth DCF model, which overstated her COE estimates. While Ms. Bulkley utilized three sources of long-term projected earnings per share ("EPS") growth rates (Zacks Investment Research ("Zacks"); Thomson First Call provided by Yahoo! Finance; and Value Line), she exclusively used projected EPS growth rates, which she erroneously called long-term earnings growth rates.[29] Analysts' projected EPS growth rates are for periods of three to five years, which is considered short given the infinite investment horizon assumed in the DCF.[30] Because of the overstated growth rates, Ms. Bulkley's DCF COE estimates are unreasonably upward biased.

Q. What is wrong with using exclusively projected earnings growth rates for Ms. Bulkley's constant-growth DCF COE estimates?

A. Analysts' projected earnings growth rates are not suitable for use, exclusively, in the constant-growth DCF model because the projected earnings growth rates, including those utilized by Ms. Bulkley, are not perpetual growth rates and are often shorter than five-year projected growth rates. The constant-growth DCF model assumes a perpetual investment

[29] Pages 27-28, Bulkley's Direct Testimony.
[30] Value Line, Inc., How to Read a Value Line Report (2017).

horizon.[31] By exclusively using these analysts' projected earnings growth rates in the context of the constant-growth DCF model, Ms. Bulkley makes an unreasonable assumption that NGS utilities will grow at these often high and precarious shorter-term growth rates, in perpetuity.

Analysts are of the concurring opinion that long-term growth rates for utilities will eventually converge to the level of long-term gross domestic product ("GDP").[32] Staff has consistently held the view that while it is possible that a company or industry may grow at a rate faster than the GDP in the short to medium term, no company or industry will do so in perpetuity. Currently, the nominal GDP is projected to grow at a longer run rate of 3.80% and 3.90% as reported by the Federal Open Market Committee ("FOMC") and the Congressional Budget Office ("CBO"), respectively.[33] An example of Ms. Bulkley's unreasonably high growth rates is the Value Line Earnings growth rate of 10.00% with the 180-day average stock price that was used to produce Southwest Gas Corporation's high DCF COE estimate of 13.77%.[34] Such high growth rates should not be used in constant-growth DCF COE estimates because no NGS utility can sustain a growth rate of 10.00% perpetually.

Q. What growth rates should Ms. Bulkley have used?

A. As Staff alluded to above, appropriate growth rates for use in the constant-growth DCF model should give consideration to the long-term growth rates,

[31] Page 129, David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.
[32] Page 302, Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.
[33] Federal Open Market Committee, Summary of Economic Projections, Published on March 19, 2025, (https://www.federalreserve.gov/newsevents/pressreleases/monetary20250319b.htm).
An Update to the Economic Outlook: 2025 to 2035, Congressional Budget Office, January 2025, (https://www.cbo.gov/publication/61172).
[34] Schedule AEB-D2, Attachment 3, Bulkley's Direct Testimony.

represented by the projected long-term nominal GDP growth rates of 3.90%.[35] For example, the Federal Energy Regulatory Commission ("FERC") incorporates long-term GDP growth rates into calculations within the constant-growth DCF by using a ratio of 80% analyst projected long-term growth rates to 20% long-term GDP growth rates.[36] If Ms. Bulkley had used a similar approach with an appropriate GDP growth rate in the constant-growth DCF model, excluding negative or unavailable growth rates and using only comparable proxy utilities, the median of her DCF COE estimates for the average growth rate would be 9.67% instead of 10.06%.[37] Therefore, reasonable DCF COE results are lower than Ms. Bulkley's estimations.

4. Market Return of Capital Asset Pricing Models

Q. Please explain Ms. Bulkley's CAPM COE estimation methods.

A. Ms. Bulkley employed the traditional CAPM and the ECAPM using Value Line Beta, Bloomberg Beta, and Value Line long-term average Beta of 0.88, 0.76, and 0.75 with three different risk-free rates of 4.23%, 4.12%, and 4.30% and a total market return of 12.07% resulting in three different market risk premiums ("MRP") of 7.84%, 7.95%, and 7.77%.[38] For her natural gas utility proxy group, the ranges of Ms. Bulkley's CAPM and ECAPM COE estimates are 10.11% to 11.10% and 10.60% to 11.34%, respectively.[39]

Q. What is Staff's concern with Ms. Bulkley's CAPM and ECAPM COE estimates?

A. Due to the use of overstated input variables, Ms. Bulkley's CAPM and ECAPM COE estimates are too high. Even compared to her average COE estimate of 10.06% using

[35] Page 37, Table 2-3, An Update to the Economic Outlook: 2024 to 2034, Congressional Budget Office, June 2024, (https://www.cbo.gov/publication/60419).
[36] *Entergy Arkansas, Inc.*, Opinion No. 575, 175 FERC ¶ 61,136 (2021).
[37] Schedule AEB-D2, Attachment 1, Bulkley's Direct Testimony and 1 Summary, Won's Rebuttal Workpaper.
[38] Schedule AEB-D2, Attachment 3 and Attachment 4, Bulkley's Direct Testimony.
[39] Schedule AEB-D2, Attachment 1, Bulkley's Direct Testimony.

median results of constant-growth DCF, Ms. Bulkley's average CAPM and ECAPM COE estimate of 10.47% and 10.87%, respectively, are too high.[40] Staff found that Ms. Bulkley's CAPM COE estimates are too high mainly because she used unreasonably high market return. Ms. Bulkley's market return of 12.07% is much higher than the US regular market return estimates of around 7.58% to 10.51%.[41]

Q. How were Ms. Bulkley's market return and MRPs estimated?

A. Ms. Bulkley utilized her market return as the expected market return on the S&P 500 Index, and calculated her MRPs as the difference between the expected market return on the S&P 500 Index and the risk-free rate. For estimating expected market return, Ms. Bulkley conducted several steps of calculations. Step 1, using the data of companies on the S&P 500 Index, Ms. Bulkley calculated an estimated weighted average dividend yield of 1.54% and an estimated weighted average long-term growth rate of 10.45%.[42] Step 2, using the constant growth DCF model with her estimated dividend yield and growth rate, Ms. Bulkley estimated the required market return of 12.07%.[43] Step 3, Ms. Bulkley calculated implied MRPs estimated as the difference between the implied expected equity market return and the various risk-free rates. Ms. Bulkley's implied MRP over the current 30-day average of the 30-year US Treasury bond yield, and projected yields on the 30-year US Treasury bond, range from 7.77% to 7.95%.[44] Table 2 shows Ms. Bulkley's three MRP estimates and their associated estimation methods:[45]

[40] 1 Summary, Won's Rebuttal Workpaper.
[41] Forbes Advisor, Average Stock Market Return, retrieved November 8, 2024, https://www.forbes.com/advisor/investing/average-stock-market-return/.
[42] Schedule AEB-D2, Attachment 6, Bulkley's Direct Testimony.
[43] Ibid.
[44] Schedule AEB-D2, Attachment 4, Bulkley's Direct Testimony.
[45] Ibid.

Table 2. Bulkley's Market Risk Premium Estimation

	Estimate Method	MRP
[1]	Current 30-day average of 30-year Treasury bond yield	7.84%
[2]	Near-term projected 30-year US Treasury bond yield (Q4 2024 - Q4 2025)	7.95%
[3]	Projected 30-year US Treasury bond yield (2026 - 2030)	7.77%
	Average	7.85%

Q. What is wrong with Ms. Bulkley's constant-growth DCF model estimation of the required market return of 12.07% in Step 2 for estimating expected market return?

A. Ms. Bulkley's constant-growth DCF procedure in Step 2 has two critical faults. First, for her expected total market return estimation using the DCF model, Ms. Bulkley's data set included companies that do not pay dividends or for which dividend information was unavailable.[46] Dividend yield information is essential to utilizing the DCF model.[47]

Second, consistent with Staff's position that the DCF model assumes a long-term investment horizon, Staff further finds that the growth rates that Ms. Bulkley used are short-term in horizon, which makes them unsuitable for the constant-growth DCF model she used to estimate her expected market return. Staff recalculated an expected total return, including only companies with available dividend yields, and found a reasonable total market return of 10.02%, which is 205 basis points lower than Ms. Bulkley's total market return of 12.07%.[48] Taking into account all three risk-free rates that Ms. Bulkley used results in estimated MRPs of less than 6.00%.[49]

[46] Schedule AEB-D2, Attachment 6, Bulkley's Direct Testimony.
[47] David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.
[48] 6 Market Return, Won's Rebuttal Workpaper.
[49] 4 CAPM, Won's Rebuttal Workpaper.

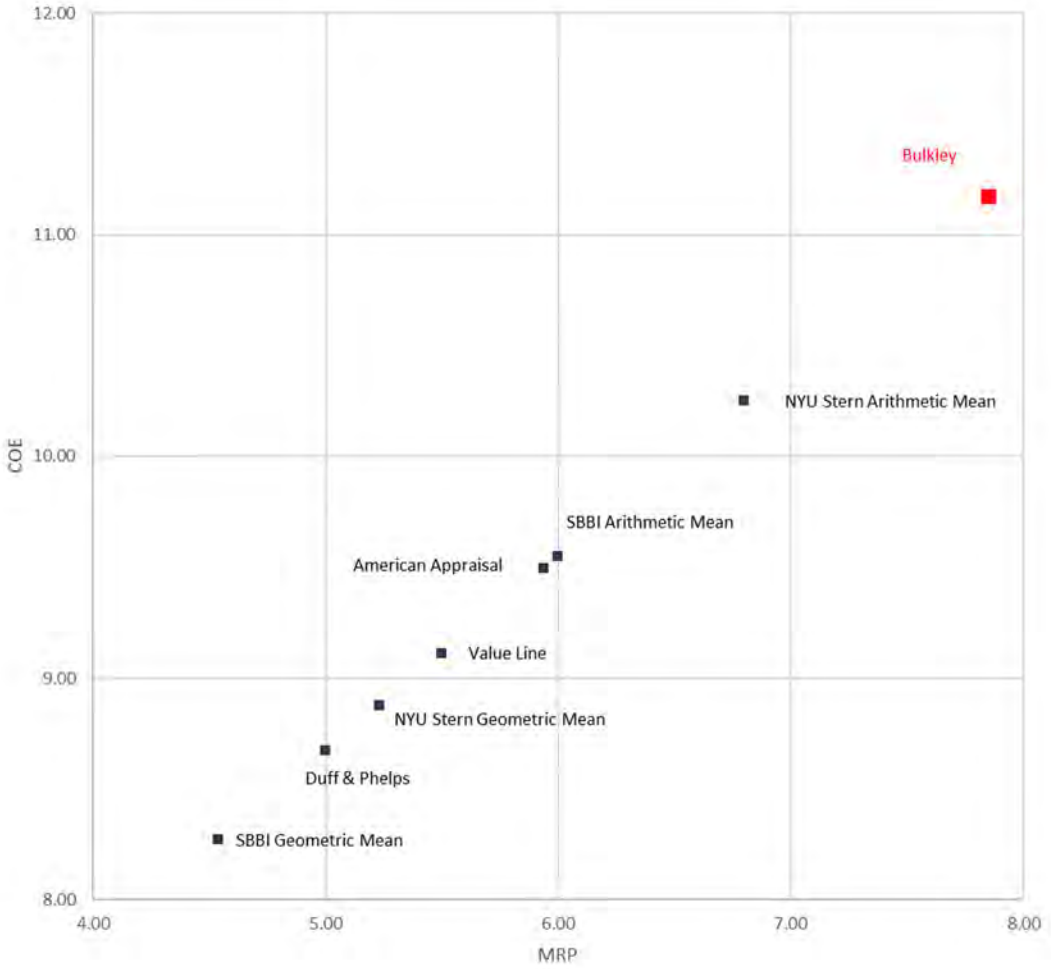
Q. What are other financial institutions' current MRP estimates?

A. Other financial institutions' MRP estimates range from 4.54% to 6.80%.[50] According to a 2021 survey research based on 1,794 responses from business and economic professors, the North America average MRP estimate is 5.55%.[51] The American Appraisal Risk Premium Quarterly, Value Line, and Duff & Phelps (now Kroll) calculated MRPs of 6.0%, 5.5%, and 5.0%, respectively.[52] On February 8, 2024, The Kroll recommended US equity risk premium remains at 5.0%.[53] Kroll's current MRPs range from 4.54% (geometric average) to 5.94% (arithmetic average) using the historical Stocks, Bonds, Bills, and Inflation (SBBI®) Monthly Dataset from 1926 to 2023.[54] Professor Aswath Damodaran of NYU Stern School of Business, a noted equity valuation professor, currently estimates MRPs in the range of 5.23% (geometric average) to 6.80% (arithmetic average):[55]

Figure 2 compares COE estimates with their corresponding MRPs, for Ms. Bulkley's natural gas proxy group, calculated with other reputable financial institution's reasonable MRPs and Ms. Bulkley's unreasonable MRPs, assuming the same projected 30-year US Treasury bond yield of 4.30% used in Ms. Bulkley's estimation.[56] As shown in Figure 2, Ms. Bulkley's CAPM COE estimate of 11.17%, with her corresponding average MRP of 7.85%, is an extreme outlier when compared with the other reliable published estimates.[57] This clearly indicates that Ms. Bulkley's MRPs are too high resulting in her COE estimates being too high as well.

[50] *See* Figure 2, "MRP and corresponding COE".
[51] Fernandez, P., Bañuls, S., & Fernandez Acin, P. (2021). Survey: Market Risk Premium and Risk-Free Rate used for 88 countries in 2021. SSRN-Social Science Research Network, 1–17.
[52] FERC Opinion No. 569, 169 FERC ¶ 61,129.
[53] Kroll, Kroll Lowers its Recommended US Equity Risk Premium to 5.0%, Effective June 5, 2024.
[54] Kroll, The Stocks, Bonds, Bills, and Inflation (SBBI®) Monthly Dataset.
[55] Risk Premium, Damodaran Online, Stern School of Business of New York University, updated January 1, 2024.
[56] Schedule AEB-D2, Attachment 4, Bulkley's Direct Testimony.
[57] 4 CAPM, Won's Rebuttal Workpaper.

Figure 2. MRP and corresponding COE



Q. Please summarize your concern with Ms. Bulkley's MRPs.

A. As presented in Table 2, Ms. Bulkley used three MRP estimates. As Staff already pointed out, all three MRP estimates are too high compared to other widely accepted MRP estimates in the financial industry. The unreasonably high MRPs are the result of Ms. Bulkley's miscalculated market return of 12.07%.[58]

[58] Schedule AEB-D2, Attachment 6, Bulkley's Direct Testimony.

Q. What would Ms. Bulkley's CAPM COE estimates be if she had used proper input data?

A. With more reasonable assumptions, such as a market return of 10.02%, Ms. Bulkley's average CAPM COE estimate would be 8.79%.[59] This is well within the range of Staff's COE estimates of 8.25% to 9.93%,[60] and much lower than Ms. Bulkley's average CAPM COE estimate of 10.47%.

5. Empirical Capital Asset Pricing Model

Q. What is your concern with Ms. Bulkley's ECAPM model?

A. Like her average CAPM COE estimate of 10.47%, Ms. Bulkley's average ECAPM COE estimate of 10.87% is unreasonably high because she assumes an excessively high market return of 12.07%.[61] In addition, the ECAPM model itself overestimates COE because of an adjustment to account for the supposed tendency of the CAPM method to underestimate COE for companies with low Beta coefficients.

Q. How did Ms. Bulkley adjust her CAPM COE to ECAPM COE?

A. Ms. Bulkley multiplied 75% of her MRPs by the Beta coefficient and added the remaining 25% MRPs, unadjusted.[62] This adjustment is consistent with Dr. Roger Morin's formula. Dr. Morin's formula was based on his finding, with data between 1926 and 1984, that the regular CAPM underestimated returns by about 2.00%.[63] The academic literature has estimated a fairly wide range of adjustment parameters, with much of the variation between

[59] 1 Summary, Won's Rebuttal Workpaper.
[60] Schedule SJW-d15, Won's Direct Testimony.
[61] 1 Summary, Won's Rebuttal Workpaper.
[62] Original CAPM COE estimate equals Risk-Free Rate + Beta × MRP but ECAMP COE estimate equals Risk Free Rate + 0.25 × MRP + 0.75 × Beta × MRP or Risk-Free Rate + Alpha + Beta × (MRP – Alpha) where Alpha = 0.25 × MRP.
[63] Page 190, Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.

studies arising from differences in methodology and time periods, so the alpha estimates are not strictly comparable.[64] Furthermore, Dr. Morin also cited other studies that found that the CAPM produced returns between -9.61% and 13.56%, meaning that the CAPM actually overestimated COE in some instances.[65] Such variations in findings do not lend credibility to Ms. Bulkley's use of the ECAPM.

Q. What is Staff's conclusion regarding Ms. Bulkley's ECAPM?

A. Given the lack of consensus among researchers on a reliable adjustment factor for ECAPM, Staff has shown that Ms. Buckley's ECAPM COE estimation method is based on an unreliable opinion. Staff recommends that the Commission not consider Ms. Bulkley's ECAPM COE estimation method as reliable information for determining a just and reasonable authorized ROE.

6. Bond Yield Risk Premium Analysis

Q. What is Bond Yield Risk Premium Analysis?

A. The conventional bond yield risk premium analysis is based on the idea that since investors in stocks take greater risks than investors in bonds, the former expect to earn a return on a stock investment that reflects a premium over and above the return they expect to earn on a bond investment.[66] This premium required by investors for an investment in common stock over an investment in corresponding debt is called the risk premium.[67]

[64] Page 20, The Brattle Group, Estimating the Cost of Equity for Regulated Companies.
[65] Page 190, Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.
[66] Brigham, E. F., Shome, D. K., & Vinson, S. R. (1985). The risk premium approach to measuring a utility's cost of equity. Financial Management, 33-45.
[67] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 108.

Multiple approaches have been developed to determine the risk-premium for a utility. Ms. Bulkley's BYRP is different from the conventional method.

Q. What is Ms. Bulkley's BYRP method?

A. Ms. Bulkley's BYRP used a regression analysis based on authorized ROEs for utility companies relative to risk-free rates (30-year Treasury bond yields).[68] Ms. Bulkley used quarterly average data of risk-free rates and authorized ROEs derived from natural gas utility rate cases from 1980 through August 2024 as reported by Regulatory Research Associates ("RRA").[69] Ms. Bulkley's regression analysis results in the following equation:

Risk Premium (%) = 0.0790% – 0.4312 Risk-Free Rate (%).[70]

Because Ms. Bulkley defined the risk premium as the authorized ROE minus the risk-free rate, Ms. Bulkley's BYRP ROE estimates are only determined by 30-year Treasury bond yields. While in contrast, DCF and CAPM are able to estimate COE using multiple input variables. For example, Ms. Bulkley's CAPM COE estimates are determined by not only the risk-free rate (30-year Treasury bond yield) but also the total market risk ("MRP") and a stock's risk (Beta). The major determinant of 30-year Treasury bond yields is government intervention through the Federal Reserve's ("Fed") monetary policy, not solely the financial market. Therefore, Ms. Bulkley's BYRP is a biased method for estimating a fair ROE, considering the 30-year Treasury bond yields have changed extremely in recent years.[71]

Q. What are Ms. Bulkley's BYRP ROE estimates?

[68] Page 37, lines 5-17, Bulkley's Direct Testimony.
[69] Page 37, lines 15-17, Bulkley's Direct Testimony.
[70] Figure 10 (Page 38), Bulkley's Direct Testimony.
[71] 30-year Treasury yields increased by 295 bps from 1.69% on December 3, 2021, to 4.64% on July 1, 2024.

A. Ms. Bulkley's BYRP ROE estimates range from 10.25% to 10.35%, with a mean of 10.30%.[72] For her BYRP ROE estimation, Ms. Bulkley used three risk-free rates: 30-day average of the 30-year US Treasury bond yield (i.e., 4.23%), the near-term (Q4 2024 – Q4 2025) projections of the 30-year US Treasury bond yield (i.e., 4.12%), and a longer-term (2026 – 2030) projection of the 30-year US Treasury bond yield (i.e., 4.30%).[73]

Q. What are Staff's concerns with Ms. Bulkley's BYRP ROE estimates?

A. Staff has multiple concerns with Ms. Bulkley's BYRP model. First, Ms. Bulkley used a risk premium defined as the difference between authorized ROEs of NGS utilities and 30-year Treasury bond yields. In her regression analysis for her BYRP estimation method, Ms. Bulkley assumed a linear relationship between authorized ROEs of natural gas utilities and 30-year Treasury bond yields for the period from 1980 to 2024.[74] However, the relationship between authorized ROEs of NGS and 30-year Treasury bond yields changed significantly after the COVID-19 pandemic as shown in Figure 3. Therefore, Ms. Bulkley's BYRP analysis is not capable of providing a reliable ROE estimation.

Second, the 30-year Treasury yield increased too much to accurately estimate an ROE as a result of the COVID-19 pandemic. Intended to combat the highest inflation in four decades, the Fed increased interest rates with unusual speed from March 17, 2022 to July 26, 2023. For example, the aggregate effect of the Fed's actions was an increase in 30-year Treasury yields from 1.69% on December 3, 2021, to a high of 5.09% on October 25, 2023.[75] In addition, the Fed is actively adjusting its federal funds rate, marking a third consecutive rate cut in 2024,

[72] Figure 11 (Page 38), Bulkley's Direct Testimony.
[73] Page 38, lines 4-7. and Schedule AEB-D2, Attachment 7, Bulkley's Direct Testimony.
[74] Schedule AEB-D2, Attachment 7, Bulkley's Direct Testimony.
[75] Federal Reserve Economic Data, Market Yield on US Treasury Securities at 30-Year Constant Maturity, https://fred.stlouisfed.org/series/DGS30.

totaling one percentage point across its September, November, and December meetings.[76] Because Ms. Bulkley's estimates are solely determined by the 30-year Treasury yield, these significant changes result in unreliable BYRP ROE estimates. Figure 3 shows the authorized ROE of natural gas utilities and the 30-year Treasury bond yield from 2014 to 2024.

Figure 3. Authorized ROE of Natural Gas Utility and 30-year Treasury Bond Yield[77]

Third, as mentioned above, Ms. Bulkley's regression analysis for BYRP was conducted based on a period of more than 40 years, from 1980 to 2023. Staff has not found any statistical evidence or theoretical conclusions that the relationship between the 30-year Treasury yield and authorized ROEs is constant over time. These stale authorized ROEs might not provide a proper up to date COE estimate.

[76] CBS News, Federal Reserve made a 3rd consecutive rate cut today. Here's how it will impact your money. https://www.cbsnews.com/news/federal-reserve-meeting-rate-cut-interest-rates-december/.
[77] S&P RRA and FRED Economic Data, https://fred.stlouisfed.org/series/DGS30.

Staff agrees with FERC that the BYRP is likely to provide a less accurate current COE estimate than the DCF or CAPM models because it relies on previous ROE determinations, whose resulting ROE may not necessarily be directly determined by a market-based method.[78] Ms. Bulkley's use of unusually inflated risk-free rates should be rejected because it introduces significant biased speculation in ratemaking. In conclusion, Staff recommends that the Commission not consider Ms. Bulkley's BYRP COE estimate as reliable information to determine a just and reasonable authorized ROE.

7. Recalculated Ms. Bulkley's COE Estimates

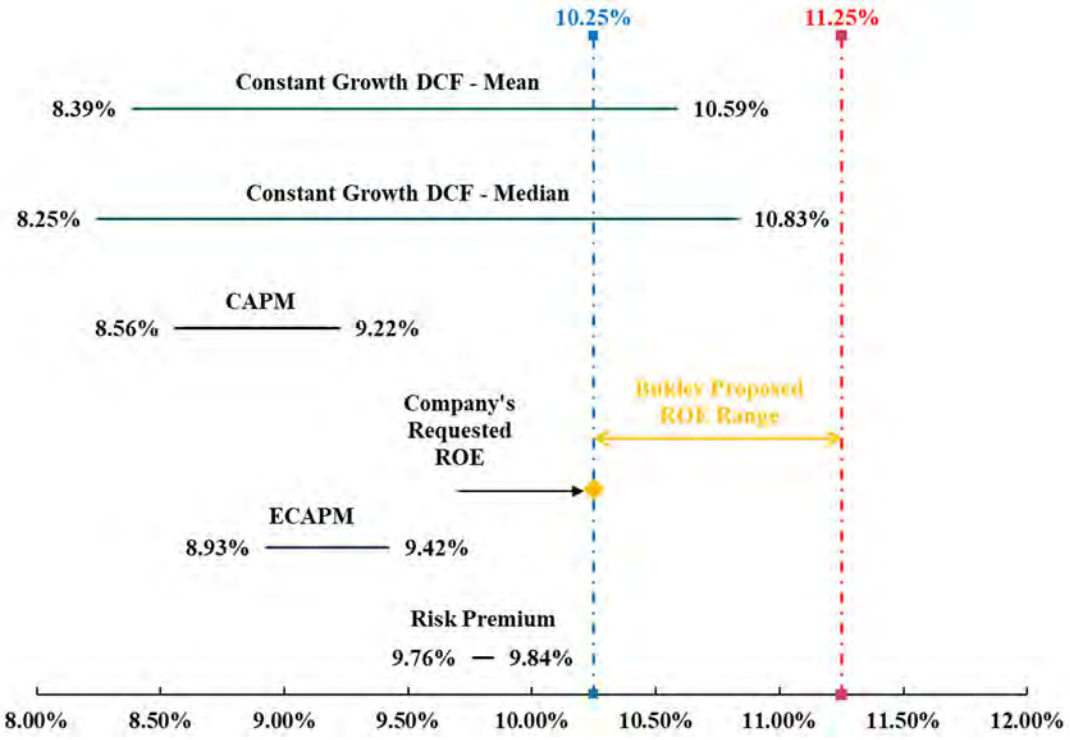
Q. Has Staff recalculated Ms. Bulkley's COE estimate for Ameren Missouri using proper inputs and models?

A. Staff's recalculated results of Ms. Bulkley's COE estimates, using proper inputs and models, are summarized in Table 3:

Table 3. Bulkley's Estimation and Staff's Recalculation[79]

	Cost of Equity - Average	
COE Estimation Methods	Bulkley Estimation	Staff Recalculation
DCF (Mean)	10.10%	9.47%
DCF (Median)	10.12%	9.58%
CAPM	10.47%	8.79%
ECAPM	10.87%	9.10%
BYRP	10.30%	9.81%
Average	10.37%	9.35%

[78] Paragraph 342, FERC Opinion No. 569, 169 FERC ¶ 61,129.
[79] 1 Summary, Won's Rebuttal Workpaper.



As is evident in Table 3, Ms. Bulkley's COE estimates are too high compared to Staff's recalculation of Ms. Bulkley's COE, which uses more reasonable inputs. Although DCF and CAPM are reliable COE estimation methods, Ms. Bulkley's COE estimates are unreasonably high due to her choice of biased input values in the model. Staff recommends that Ms. Bulkley's DCF and CAPM COE estimates should not be utilized for calculating a just and reasonable authorized ROE.

8. Authorized ROEs

Q. Did Ms. Bulkley properly differentiate authorized ROE and COE in her testimonies?

A. No. The distinction between ROE and COE remains unclear in her testimonies, even though Ms. Bulkley insisted that she endeavored to clarify the differences throughout her

direct testimony to avoid confusion between the terms.[80] In Ameren Missouri's most recent electric rate case, No. ER-2024-0319, Ms. Bulkley stated "I use the phrases "return on equity" and "cost of equity" interchangeably just as the interest rate on debt instruments and the cost of debt are interchangeable."[81] Ms. Bulkley's interchangeable use of ROE and COE introduces significant confusion to the Commission because, generally, ROE and COE are not interchangeable in financial analysis, as they represent different concepts. ROE is a measure of a company's profitability in relation to shareholders' equity; it indicates how efficiently a company is generating profits from its equity base and is calculated as:

$$\text{ROE} = \text{Net Income} / \text{The Book Value of Shareholders' Equity}$$

In contrast, COE represents the required return that investors expect from an equity investment in the company and reflects the compensation investors demand for the risk of investing in the company's stock. For example, COE is often calculated using models like the CAPM:

$$\text{COE} = \text{Risk-Free Rate} + \beta\,(\text{Market Return} - \text{Risk-Free Rate})$$[82]

In utility regulation, COE and 'authorized ROE' are more clearly differentiated. Authorized ROE refers to the rate of return that a utility company is allowed to earn on its equity investments, as determined by the regulatory authority. It represents the percentage of profit that the utility is permitted to make on the equity portion of its capital structure in the rate base. Authorized ROE is typically set by regulatory agencies through a process that considers

[80] Staff Data Request No. 0138.
[81] Footnote No. 1 (Page 4), Bulkley's Direct Testimony, ER-2024-0319.
[82] β (CAPM Beta) is a concept used in finance to measure the volatility or systematic risk of a security or portfolio in comparison to the overall market.

factors such as the company's risk profile, prevailing market conditions, and the need to attract investors while ensuring fair and reasonable rates for consumers.

Q. Why do authorized ROEs in other jurisdictions necessarily need to be considered when recommending a just and reasonable authorized ROE for Ameren Missouri?

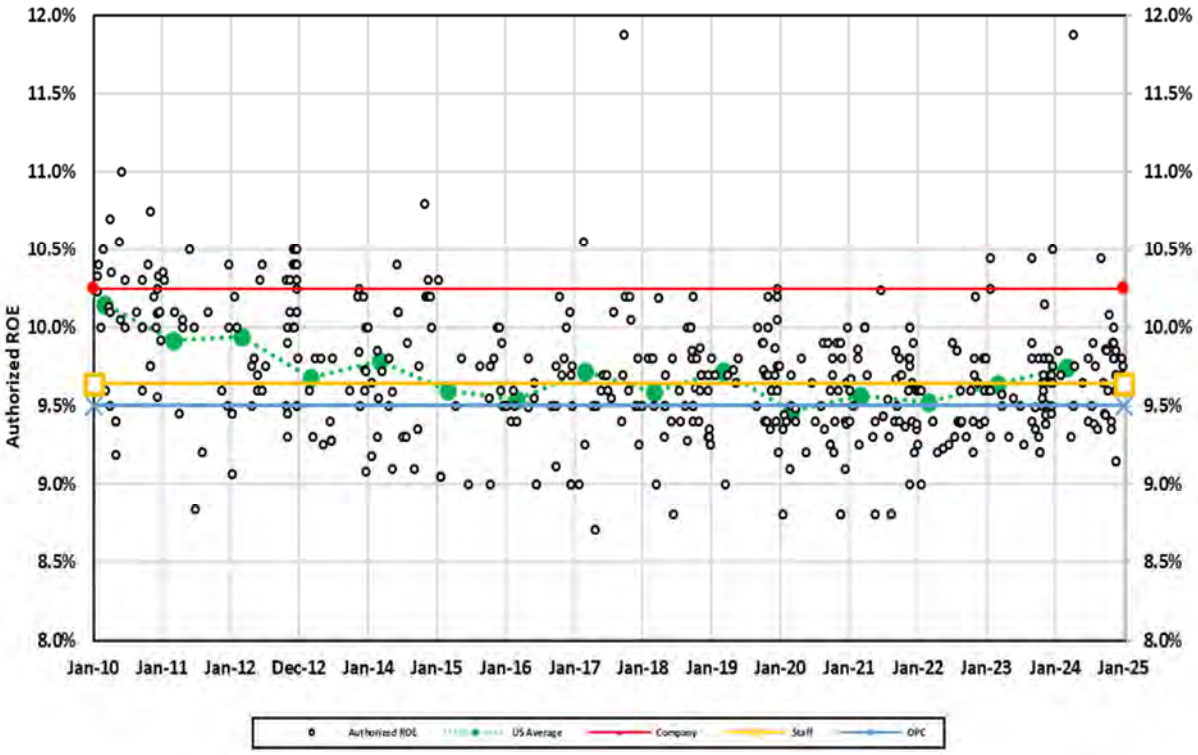
A. According to the regulatory principles established by the *Hope* and *Bluefield* cases, an authorized ROE of a utility should be comparable to other investments of commensurate risk.[83] As investors evaluate the authorized ROE of one utility in comparison to the returns offered by other regulated utilities with similar risk profiles, the regulatory decisions of other commissions serve as a fundamental test of a just and reasonable authorized ROE. Staff conducted a comparative analysis of authorized ROEs to assess the reasonableness of Ms. Bulkley's proposed ROE of 10.25%.

Q. Please explain Staff's comparative analysis of authorized ROEs.

A. Staff utilized the 'Rate Case History' dataset reported by Regulatory Research Associates, a group within S&P Global Market Intelligence, to analyze the authorized ROEs of US utilities from January 2010 to December 2024. Figure 4 displays the authorized ROE for NGS utilities in the US, alongside Ms. Bulkley's proposed ROE of 10.25% and the ROE recommendations of 9.64% and 9.50% from Staff and Mr. Murray, respectively. In the calendar year 2024, recently authorized comparable ROEs ranged from 9.15% to 11.88%, with an average of 9.724% for the 44 NGS utility cases in the US.[84]

[83] *Bluefield Waterworks & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679, 43 S.Ct. 675, 67 L.Ed. 1176 (1923); *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 64 S.Ct. 281, 88 L.Ed. 333 (1944).
[84] S&P Global Market Intelligence, Retrieved in March 7, 2025.

Figure 4. Authorized ROE – NGS Utilities in the US (2010-2024)



Of the 44 NGS rate case decisions regarding authorized ROEs in the US in 2024, only two (2) authorized ROEs fall within Ms. Bulkley's reasonable ROE range of 10.25% to 11.25%,[85] while 29 authorized ROEs fall within Staff's reasonable ROE range from 9.49% to 9.99%.[86] Among the fifteen (15) exceptions outside Staff's reasonable ROE range, eleven (11) authorized ROEs are lower than 9.49%, and only four (4) authorized ROEs are greater than 9.99%. These four (4) higher authorized ROEs were 10.00%, 10.08%, 10.44%, and 11.88%. An outlier ROE of 11.88% was determined by the Alaska Public Utilities Commission in 2024.[87]

[85] RRA, S&P Capital IQ Pro and Page 58, lines 8-9, Bulkley's Direct Testimony.
[86] Page 40, line 20, Won's Direct Testimony.
[87] RRA, S&P Capital IQ Pro.

Q. What is the conclusion of Staff's comparative analysis of authorized ROEs?

A. Based on the regulatory principles established by the *Hope* and *Bluefield* cases, Ms. Bulkley's proposed ROE of 10.25% is not comparable to the authorized ROEs of other electric utilities of commensurate risk in the US.

9. Regulatory and Business Risks

Q. What adjustments to COE did Ms. Bulkley make in her recommendation of authorized ROE regarding Ameren Missouri's business and regulatory risks?

A. Ms. Bulkley did not make specific adjustments to the COE in her recommendation of an authorized ROE when estimating the effects of Ameren Missouri's business and regulatory risks.[88] However, Ms. Bulkley did consider business and regulatory risks when determining where Ameren Missouri's required ROE falls within the range of COE estimates based on her analytical results.[89]

Q. What are Staff's concerns regarding Ms. Bulkley's consideration of Ameren Missouri's business and regulatory risks?

A. While Staff also considers Ameren Missouri's business and regulatory risks when recommending an authorized ROE to the Commission, Staff is concerned about Ms. Bulkley's biased approach, which inflates Ameren Missouri's business and regulatory risks, adding to her already overstated range of COE estimates. As a result, Ms. Bulkley's proposed ROE of 10.25% exceeds the average authorized ROE of the 44 NGS utility rate cases completed in calendar year 2024 (9.72%) by 53 basis points.[90] Even when considering only the

[88] Page 6, lines 19-23, Bulkley's Direct Testimony.
[89] Page 39, lines 7-12, Bulkley's Direct Testimony.
[90] Schedule SJW-r3-1, Won's Rebuttal Testimony, and S&P Capital IQ Pro, Retrieved on January 2, 2025.

eighteen (18) fully litigated NGS utility decisions in calendar year 2024, the average authorized ROE stands at 9.78%, which still remains 47 basis points lower than Ms. Bulkley's proposed ROE.[91]

Q. Do you agree with Ms. Bulkley's statement, I believe it is important to consider the small size of Ameren Missouri's natural gas operations in Missouri in the determination of where, within the range of analytical results, the Company's required ROE falls. Therefore, the additional risk associated with small size indicates that the Company's ROE should be established above the mean results for the proxy group companies.?[92]

A. No, I do not. While it is true that Ameren Missouri's natural gas operations are smaller than the mean for the proxy group companies in terms of market capitalization and that there is a size premium in COE estimation in general, Ameren Missouri is not a case that needs to consider the size premium within the range of COE estimates. Mr. Sagel, the Vice President and Treasurer of Ameren Missouri, stated, "From a financial standpoint, the entirety of Ameren Missouri's operations function as one entity."[93] According to response to Staff's Data Request No. 0136, Darryl T. Sagel presents Ameren Missouri's overall capital structure, cost of long-term debt, and cost of preferred stock and does not allocate such components based on the Ameren Missouri's natural gas distribution activities. Mr. Sagel also stated, "Ameren Missouri finances its natural gas operational division in concert with its electric operational division under the Ameren Missouri umbrella organization, thereby deriving financial economies of scale."[94] Based on these facts, there is no reason to consider

[91] Schedule SJW-r3-1, Won's Rebuttal Testimony, and S&P Capital IQ Pro, Retrieved on January 2, 2025.
[92] Page 45, lines 6-9, Bulkley's Direct Testimony.
[93] Staff Data Request No. 0137.
[94] Staff Data Request No. 0136.

Ameren Missouri's natural gas operations as financially independent and small in terms of market capitalization. Therefore, it is unreasonable for Ameren Missouri's NGS ROE to be established above the mean results for the proxy group companies.

Q. Do you agree with Ms. Bulkley that the risk level for Ameren Missouri is greater than her proxy group companies because of their capital expenditure requirements?[95]

A. No. Ms. Bulkley's argument is that the ratio of expected capital expenditures as a percentage of net utility plant ("capital expenditure ratio") for Ameren Missouri is higher compared to her proxy group companies and as a result, their risk profiles are adversely affected.[96] Ms. Bulkley cited S&P's explanation of the importance of regulatory support for utilities' significant capital expenditures.[97] While Staff agrees with S&P's explanation, Staff disagrees with Ms. Bulkley's argument that Ameren Missouri should have a higher authorized ROE due to higher capital expenditure requirements, for several reasons.

The NGS division of Ameren Missouri's capital expenditures ratio of 70.68% does not mean that Ameren Missouri faces a higher risk of under-recovery than the proxy group thus warranting a higher authorized ROE. If Ms. Bulkley's assertion is true, then Ameren Missouri's risk profiles would be affected by their significant capital expenditures and their credit rating should have been changed. Actually, as a whole company, considering both their NGS and electric distributions, Ameren Missouri's capital expenditures ratio is 80%.[98] However, Ameren Corp. and Ameren Missouri's credit ratings have not changed in the past five years.[99] Ameren Corp. and Ameren Missouri are currently rated by Moody's and S&P. The corporate

[95] Page 50, lines 8-10, Bulkley's Direct Testimony.
[96] Page 48, lines 14-20 and Pages 49-50, Bulkley's Direct Testimony.
[97] Pages 46-47, Bulkley's Direct Testimony.
[98] Schedule AEB-D2, Attachment 8, Bulkley's Direct Testimony, ER-2024-0319.
[99] S&P Capital IQ Pro.

credit ratings assigned to Ameren Corp by Moody's and S&P are 'Baa1' and 'BBB+', respectively.[100] The corporate credit ratings assigned to Ameren Missouri by Moody's and S&P are also 'Baa1' and 'BBB+', respectively.[101]

Q. Do you agree with Ms. Bulkley that Ameren Missouri has greater risk than the proxy group?[102]

A. No. Ameren Missouri takes advantage of several alternative regulatory mechanisms.[103] It is true there are some regulatory lag and time limits, but Staff does not find any evidence that Ameren Missouri has a significantly greater risk than the proxy group that requires an upward adjustment to the ROE to reflect any incremental risk. Even Ms. Bulkley recognized and stated, "Ameren Missouri does have some protection against volumetric risk in Missouri through the Delivery Charge Adjustment ("DCA") which is a partial revenue decoupling mechanism for the Company's residential and general service rate classes."[104] The topic of Ameren Missouri's regulatory lag is also addressed in the rebuttal testimony of Staff witness Keith Majors.

10. Cost of Capital and Capital Structure

Q. What cost of preferred stock, cost of debt and capital structure for the ROR did Mr. Sagel propose for Ameren Missouri in this proceeding?

A. In his direct testimony filed on September 30, 2024, Mr. Sagel proposed an authorized ROR of 7.399%, calculated using Ms. Bulkley's proposed ROE of 10.25% and projected embedded costs as of December 31, 2024, a cost of preferred stock of 4.180% and a

[100] S&P Rating Report – Ameren Corporation.
[101] S&P Rating Report - Union Electric Company.
[102] Page 57, lines 19-21, Bulkley's Direct Testimony.
[103] Schedule AEB-D2, Attachment 10, Bulkley's Direct Testimony.
[104] Page 54, lines 7-10, Bulkley's Direct Testimony.

cost of debt of 4.313%, applied to a projected capital structure consisting of 52.00% common equity, 0.54% preferred stock and 47.46% long-term debt.[105]

Q. Does Staff have concerns about the cost of the preferred stock proposed by Ameren Missouri's witness?

A. Staff has no major concerns with Ameren Missouri's proposed cost of preferred stock. Mr. Sagel stated that his proposed embedded cost of preferred stock of ** [redacted] ** was computed by dividing forecasted annualized dividends by the net proceeds received for the forecasted preferred stock outstanding as of December 31, 2024.[106] Mr. Sagel stated "The preferred stock balance of ** [redacted] ** reflected in Ameren Missouri's proposed capital structure reflects the expected carrying value of, and the net proceeds received for, Ameren Missouri's projected preferred stock outstanding as of December 31, 2024."[107] According to its response to Staff's data request, Ameren Missouri reported the actual embedded cost of preferred stock of 4.18% as of December 31, 2024.[108]

Q. Does Staff have concerns about the cost of the long-term debt proposed by Ameren Missouri's witness?

A. Staff has concerns with Mr. Sagel's proposed cost of the long-term debt. Mr. Sagel stated that his proposed embedded cost of long-term debt of ** [redacted] ** was computed by dividing the forecasted annualized interest expense as of December 31, 2024, by the forecasted long-term debt carrying value as of such date.[109] According to its response to

[105] Table 2 (Page 11) and Schedule DTS-D1, Sagel' Direct Testimony.
[106] Page 15, lines 3-5, Sagel' Direct Testimony.
[107] Page 14, lines 19-22, Sagel' Direct Testimony.
[108] Staff Data Request No. 0113.
[109] Page 14, lines 7-9, Sagel' Direct Testimony.

Staff's data request, Ameren Missouri reported the embedded cost of long-term debt of 4.296% as of December 31, 2024.[110]

Q. Does Staff have concerns about the capital structure proposed by Ameren Missouri's witness?

A. Staff has concerns with Mr. Sagel's proposed ratemaking capital structure consisting of ** [redacted] **.[111] The capital structure that Mr. Sagel proposed is based on Ameren Missouri's forecasted debt, preferred stock, and common stock balances as of December 31, 2024.[112] However, in Ameren Missouri's response to Staff's request, Mr. Sagel's forecast capital structure is slightly different from its actual capital structure of 51.96% common equity, 0.54% preferred stock, and 47.50% long-term debt.[113]

Staff is investigating the difference between Ameren Missouri's proposed capital structure and its actual capital structure as of December 31, 2024. Also, Staff is investigating how Ameren Corp.'s and Ameren Missouri's actual true-up capital structures, as of December 31, 2024, are attained from the previously provided capital structures. From Q1 2024 to Q4 2024, Ameren Corp.'s average capital structure was approximately 40.92% common equity, 0.45% preferred stock, and 58.63% long-term debt, and Ameren Missouri's average capital structure was 51.87% common equity, 0.57% preferred stock, and 47.56% long-term debt.[114] As of December 31, 2024, Ameren Corp. reported approximately 41.26% common equity, 0.44% preferred stock, and 58.29% long-term debt, and Ameren Missouri

[110] Staff Data Request No. 0113.
[111] Table 2 (Page 11) and Schedule DTS-D1, Sagel' Direct Testimony.
[112] Page 2, lines 12-14, Sagel' Direct Testimony.
[113] Staff Data Request No. 0112.
[114] See Schedule SJW-r2, Won's Rebuttal Testimony.

reported approximately 51.96% common equity, 0.54% preferred stock, and 47.50% long-term debt.[115] Currently, Staff is reviewing the changes in Ameren Missouri's actual capital structure and cost of debt through December 31, 2024, the end of the true-up period. Staff will address its final recommended capital structure in its surrebuttal and true-up testimony at a later point in the case.

continued on next page

[115] Staff Data Request No. 0112.

III. RESPONSE TO TESTIMONY OF OPC WITNESS

Q. What are the specific areas in which Staff is responding to OPC's witness?

A. Staff is responding to the testimony of Mr. Murray. The areas in which Staff addresses issues of Mr. Murray's direct testimony include:

- Recommended ROE, and
- Capital Structure.

Staff will discuss each in turn, below.

1. Recommended ROE

Q. What is Mr. Murray's recommended ROE for use in this proceeding?

A. Mr. Murray recommended that the Commission set Ameren Missouri's authorized ROE for its electric utility operations at 9.50% based on a range of 9.00% to 9.50%.[116]

Q. Please explain how Mr. Murray's recommended ROE was determined.

A. Mr. Murray asserted that his ROE recommendation is based on his recommended authorized ROE range of 9.00% to 9.50% considering (1) the current similarity in stock valuation levels between the local natural gas distribution ("LDC") industry and the electric utility industry; (2) the similarity in price-to-earnings ("P/E") ratios between the current level and the 2015 level; (3) the LDC industry's COE range of 7.8% to 8.5%; (4) Ameren Corp's COE range of 7.7% to 7.9%; (5) the similarity of his COE estimation between the LDC industry and the electric utility industry in Ameren Missouri's electric utility rate case, Case No. ER-2024-0319; (6) the fact that his COE estimates are lower than the average authorized ROEs of 9.72% for the LDC industry during 2024; and (7) that a recommended ROE of 8.72%

[116] Page 2, lines 3-4, Murray's Direct Testimony.

to 10.72% is generally considered reasonable under the Commission's typical zone of reasonableness ("ZOR") standard.[117] However, Mr. Murray did not explicitly explain how he arrived at his recommended authorized ROE range of 9.00% to 9.50% in his direct testimony. Mr. Murray estimated Ameren Missouri's COE of 7.7% to 7.9% and 8.3% to 8.6% using a multi-stage DCF approach and a CAPM analysis, respectively.[118] Mr. Murray stated he estimated the COE for regulated LDCs to be in the range of 7.8% to 8.5%.[119]

For reasonableness tests of his COE estimates, Mr. Murray first used a simple rule of thumb suggested in the Chartered Financial Analyst ("CFA") curriculum to estimate the COE. By adding a 3% risk premium to a range of recent yield-to-maturity ("YTM") values for Ameren Missouri's long-term bonds, which are around 5.7%, he derived a COE of approximately 8.7%.[120] Second, he stated "Assuming LDC stocks generated 50% of returns from capital gains over the long-term, this attribution translates into a 7.4% required return based on the current average LDC dividend yield of approximately 3.7%."[121] However, Mr. Murray did not clearly explain how the second method supports the reasonableness of his COE estimates.

Q. What are Staff's concerns with Mr. Murray's recommended ROE?

A. Although Staff does not agree with Mr. Murray's detailed estimation procedures for his recommended ROE, Staff found no substantial deficiency in Mr. Murray's ROE recommendation of 9.50% because it is within Staff's recommended range of ROE of 9.39% to 9.89%.[122]

[117] Page 2, lines 6-23, Murray's Direct Testimony.
[118] Page 29, line 8-9, and Page 35, lines 15-17, Murray's Direct Testimony.
[119] Page 3, lines 20-22, Murray's Direct Testimony.
[120] Page 35, lines 24-27, Murray's Direct Testimony.
[121] Page 36, lines 5-7, Murray's Direct Testimony.
[122] Schedule SJW-d16, Won's Direct Testimony.

2. Capital Structure

Q. What is Mr. Murray's recommended capital structure for use in this proceeding?

A. For Ameren Missouri, Mr. Murray recommends a capital structure that consists of approximately 42% common equity, 0.60% preferred stock and 57.40% long-term debt based on his analysis of Ameren Corp.'s consolidated capital structures.[123] Mr. Murray stated "While not exactly the same as Ameren Corp's consolidated capital structure as of March 31, 2024, this recommendation is in line with Ameren Corp's recent targeted consolidated capital structure.".[124]

Q. What is Staff's concern with Mr. Murray's capital structure recommendation?

A. Staff has one major concern with Mr. Murray's recommendation. Mr. Murray's recommended capital structure was developed based on Ameren Corp.'s consolidated capital structure, instead of Ameren Missouri's.[125] Mr. Murray stated, "It is clear that Ameren Corp dynamically manages its consolidated capital structure to take advantage of the debt capacity provided by its regulated utility subsidiaries, but targets a static 52% equity ratio at Ameren Missouri for ratemaking purposes"[126] Based on his presumption, Mr. Murray concluded that, for Ameren Missouri's ratemaking capital structure, the proportion of the common equity ratio would be lowered by around 10%, from 52% (Ameren Missouri) to 42% (Ameren Corp.), net short-term debt.[127] However, according to Ameren Missouri's response to Staff's data request, Ameren Missouri has neither internally identified nor externally communicated a targeted capital structure.[128]

[123] Schedule DM-D-9, Murray's Direct Testimony.
[124] Page 37, lines 19-21, Murray's Direct Testimony.
[125] Pages 37-38, Murray's Direct Testimony.
[126] Page 39, lines 17-19, Murray's Direct Testimony.
[127] Page 47, lines 8-10, Murray's Direct Testimony.
[128] Staff's Data Request No. 0117.

Q. Please explain more about equity ratios used in other NGS utility rate cases.

A. According to RRA, there were 44 natural gas rate cases in the US that reported specific equity ratios in 2024. The average equity ratios from fully litigated and settled rate cases have been 50.91% and 52.72%, respectively, and the average equity ratio of all 44 natural gas rate cases in 2024 is 51.97%.

Considering the historical average equity ratio of approximately 51% used for calculating the allowed ROR for natural gas utility rate cases in the US, Mr. Murray's recommended equity ratio of 42% appears to be low. Table 4 presents information compiled and published by RRA, which details the average equity ratios from Commissions around the US in the years 2010 to the 2024, along with the number of cases considered:

Table 4. Equity Ratios of NGS Utility Rate Cases (2010-2024)[129]

	Natural Gas Utility								
	Fully Litigated			Settled			Natural Gas Total		
Year	ROE (%)	Equity (%)	Case (No.)	ROE (%)	Equity (%)	Case (No.)	ROE (%)	Equity (%)	Case (No.)
2010	10.08	48.72	27	10.30	48.87	12	10.15	48.76	39
2011	9.76	52.64	8	10.08	51.82	8	9.92	52.33	16
2012	9.92	51.06	21	9.99	50.97	14	9.94	51.03	35
2013	9.59	51.98	12	9.80	48.53	9	9.68	50.60	21
2014	9.98	52.86	15	9.51	48.61	11	9.78	51.06	26
2015	9.58	51.17	5	9.60	49.32	11	9.60	49.94	16
2016	9.61	52.11	10	9.50	48.60	16	9.54	50.01	26
2017	9.82	50.39	7	9.68	50.63	17	9.72	50.55	24
2018	9.59	50.56	17	9.59	50.27	23	9.59	50.39	40
2019	9.74	52.00	12	9.70	52.47	21	9.72	52.29	33
2020	9.44	52.38	12	9.48	52.66	23	9.47	52.56	35
2021	9.63	50.59	13	9.53	51.02	30	9.56	50.89	43
2022	9.67	52.51	9	9.47	50.70	24	9.53	51.22	33
2023	9.77	53.37	21	9.52	51.01	22	9.64	52.19	43
2024	9.78	50.91	18	9.67	52.72	26	9.72	51.97	44
Average	9.73	51.55	14	9.70	50.55	18	9.70	51.05	32

[129] S&P Capital IQ Pro: Regulatory Research Association, retrieved March 7, 2025.

Q. Does Mr. Murray's recommendation to use the parent company's capital structure meet the standard of generally-accepted utility ratemaking procedures?

A. No. Mr. Murray's recommendation is not compatible with typical regulatory practices on when to use a parent company's capital structure instead of a subsidiary's own capital structure for the subsidiary's ratemaking. The Society of Utility and Regulatory Financial Analysts ("SURFA") lists the following four guidelines for determining when to use a parent company's capital structure in its guidebook, The Cost of Capital – A Practitioner's Guide ("CRRA Guide"):

> 1. Whether the subsidiary utility obtains **all** of its capital from its parent, or issues its own debt and preferred stock;
> 2. Whether the parent guarantees **any** of the securities issued by the subsidiary;
> 3. Whether the subsidiary's capital structure is independent of its parent (i.e., existence of double leverage, absence of proper relationship between risk and leverage of utility and **non**-utility subsidiaries); and,
> 4. Whether the parent (or consolidated enterprise) is diversified into **non**-utility operations [emphasis added].[130]

There is nothing in these guidelines that suggests that it is appropriate to use Ameren Corp.'s (the parent company of Ameren Missouri) capital structure to set Ameren Missouri's ROR.

For the first guideline, except for common stock and equity contributions, Ameren Missouri has not received any other long-term financing or preferred stock from Ameren Corp.

[130] David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.

since January 1, 2022.[131] Although Ameren Missouri has predominantly issued commercial paper to external investors for short-term funds, it has borrowed from affiliates via the utility money pool from time to time.[132] This is a usual financial relationship between the holding company and its subsidiaries. Also, Ameren Missouri's standalone capital structure supports its own bond rating.[133] Ameren Missouri and Ameren Corp. are rated by S&P and Moody's.[134] Therefore, Ameren Missouri meets the first criterion. For the second guideline, neither Ameren Corp. nor Ameren Corp.'s other subsidiaries guarantee the securities issued by Ameren Missouri.[135] Also, Ameren Missouri's assets have not secured Ameren Corp. or its subsidiaries' debts, nor do they secure each other's debts.[136] For the third guideline, Staff has not found the existence of double leverage, or an absence of a proper relationship between risk and leverage of utility and non-utility subsidiaries.[137] For the fourth guideline, according to Ameren Corp.'s consolidated balance sheet in 2023, Ameren Corp.'s non-utility assets and revenue are less than 1.0% of Ameren Corp.'s total assets and total revenue.[138] This is not concerning because Ameren Corp.'s non-utility operations are insignificant.

As another example, the FERC adopted a similar test to determine whether the ratemaking capital structure should deviate from the actual standalone capital structure. While the standalone capital structure is consistently and universally appropriate for ratemaking,

[131] Staff's Data Request No. 0130 (1).
[132] Staff's Data Request No. 0130 (2).
[133] Ameren Missouri, Ratings Score Snapshot, RatingsDirect, S&P Global Ratings. December 14, 2024.
[134] S&P Capital IQ Pro.
[135] Staff's Data Request No. 0130 (5).
[136] Staff's Data Request No. 0130 (6).
[137] Staff's Data Request No. 0133.
[138] Staff's Data Request No. 0132.

a consolidated capital structure is appropriate only in special cases.[139] The actual standalone capital structure is used for ratemaking if the utility satisfies three conditions: (1) it issues its own non-guaranteed debt, (2) it has its own bond rating, and (3) it has an equity ratio within the historical range approved by the Commission.[140] As previously explained, Ameren Missouri satisfies all three of these conditions.[141] Therefore, Mr. Murray's recommendation to use the parent company's capital structure does not meet the standard of generally-accepted utility ratemaking procedures.

Q. Do you agree with Mr. Murray's statement that "It is clear that Ameren Corp dynamically manages its consolidated capital structure to take advantage of the debt capacity provided by its regulated utility subsidiaries, but targets a static 52% equity ratio at Ameren Missouri for ratemaking purposes."?[142]

A. No. Staff cannot find conclusive evidence in Mr. Murray's direct testimony to support the statement. Mr. Murray explained how Ameren Corp. managed its consolidated capital structure over the past several years, but did not provide clear evidence that Ameren Missouri managed a 52% equity ratio for ratemaking purposes.[143]

Q. Do you agree with Mr. Murray's statement that "Ameren Corp allocates capital to its rate regulated subsidiaries to target and achieve ratemaking common equity ratios."?[144]

A. No. Mr. Murray did not provide clear evidence to support the statement in his direct testimony. In addition, Staff has not found any evidence of the statement's intent.

[139] Pettway, R. H., & Jordan, B. D. (1983). Diversification, double leverage, and the cost of capital. Journal of Financial Research, 6(4), 289-300.
[140] Attachment A, Docket No. 25-EKCE-294-RTS.
[141] Staff's Data Request No. 0130.
[142] Page 39, lines 17-19, Murray's Direct Testimony.
[143] Pages 39-40, Murray's Direct Testimony.
[144] Page 47, lines 5-6, Murray's Direct Testimony.

According to its response to Staff data request, Ameren Missouri stated "Ameren Corp. has neither identified nor communicated a targeted consolidated capital structure. However, Ameren Corp. considers similar factors with respect to managing its consolidated capital structure – specifically, striking an appropriate balance between cost of capital and corporate financial strength."[145]

Q. Do you agree with Mr. Murray's statement that: "Based on Ameren Corp's continued management of Ameren Missouri's capital structure to a 52% common equity ratio, it is evident that Ameren Corp is trying to reward shareholders with the financial benefits enabled by SB 564, rather than passing the reduced cost of capital through to ratepayers by adjusting its equity ratio. The Commission can ensure ratepayers realize the benefits of the lower risk they financially support by authorizing Ameren Missouri's ROR based on a lower common equity ratio."?[146]

A. No. It is true that Ameren Missouri's business risk declined due to Senate Bill ("SB") 564 and Ameren Missouri's decision to elect PISA in September 2018.[147] However, the benefit of lower business risk should be passed on to ratepayers through a lower cost of debt, not a lower equity ratio. This is already reflected when Ameren Missouri issues its bonds.

Q. What is Staff's conclusion regarding Mr. Murray's capital structure?

A. Mr. Murray's recommendation to use Ameren Corp's capital structure is based on conjecture and speculation that are not supported by conclusive evidence. Staff recommends that the Commission not consider Mr. Murray's recommendation to use Ameren Corp's capital structure for the ratemaking capital structure of Ameren Missouri.

[145] Staff's Data Request No. 0117.
[146] Page 40, lines 12-17, Murray's Direct Testimony.
[147] Page 40, lines 3-5, Murray's Direct Testimony.

IV. SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your rebuttal testimony.

A. Ms. Bulkley's recommended ROE of 10.25% for Ameren Missouri is not just and reasonable considering her inappropriate reliance on unreasonable inputs to her DCF and CAPM analyses. In addition, Staff asserts that a single independent input, the 30-year Treasury yield, used in Ms. Bulkley's BYRP method is inappropriate for estimating proper COE estimates. Staff has no major concerns with the recommended authorized ROE of 9.50% by OPC witness Mr. Murray as it falls within Staff's reasonable authorized ROE range. Given the interest rate remains at its current level, Staff recommends a reasonable authorized ROE of 9.64%, within a range of 9.39% to 9.89%.

For the ratemaking cost of capital components, Mr. Sagel proposed using Ameren Missouri's projected capital structure and cost of debt as of December 31, 2024. Staff is monitoring the actual realized costs of capital components during the true-up period. Staff disagrees with Mr. Murray's recommendation to use Ameren Corp's consolidated capital structure, with a 42% equity ratio, for Ameren Missouri's ratemaking capital structure. Staff is reviewing Ameren Missouri's true-up capital structure and cost of debt and will provide its final ROR recommendation in its surrebuttal and true-up testimony for this proceeding.

Q. Does this conclude your rebuttal testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Natural Gas Service	)))	Case No. GR-2024-0369

AFFIDAVIT OF SEOUNG JOUN WON, PhD

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW SEOUNG JOUN WON, PhD and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Seoung Joun Won, PhD*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

SEOUNG JOUN WON, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 31st day of March 2025.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

Notary Public

Union Electric Company, d/b/a Ameren Missouri
Case No. GR-2024-0369

Historical Consolidated Capital Structures for Ameren Corporation

(*Dollars in Millions)*

Capital Components	March 31, 2022	June 30, 2022	September 30, 2022	December 31, 2022
Common Equity	$9,804.7	$9,879.0	$10,200.0	$10,507.9
Preferred Stock	$129.6	$129.6	$129.6	$129.6
Long-Term Debt	$12,820.4	$13,341.7	$13,484.1	$13,784.4
Total Capitalization	$22,754.7	$23,350.4	$23,813.7	$24,421.9

Capital Components	March 31, 2023	June 30, 2023	September 30, 2023	December 31, 2023
Common Equity	$10,507.9	$10,606.2	$10,696.6	$11,349.0
Preferred Stock	$129.6	$129.6	$129.6	$129.6
Long-Term Debt	$13,784.4	$14,281.1	$14,678.0	$15,970.2
Total Capitalization	$24,421.9	$25,016.9	$25,504.3	$27,448.8

Capital Components	March 31, 2024	June 30, 2024	September 30, 2024	December 31, 2024
Common Equity	$11,443.1	$11,537.9	$11,832.4	$12,114.5
Preferred Stock	$129.6	$129.6	$129.6	$129.6
Long-Term Debt	$16,315.9	$17,079.4	$16,723.1	$17,113.9
Total Capitalization	$27,888.6	$28,746.8	$28,685.1	$29,358.1

Historical Consolidated Capital Structures for Ameren Missouri

(*Dollars in Millions)*

Capital Components	March 31, 2022	June 30, 2022	September 30, 2022	December 31, 2022
Common Equity	$5,880.1	$5,980.9	$6,377.9	$6,347.1
Preferred Stock	$81.8	$81.8	$81.8	$81.8
Long-Term Debt	$5,322.5	$5,842.7	$5,844.4	$5,798.6
Total Capitalization	$11,284.5	$11,905.5	$12,304.1	$12,227.6

Capital Components	March 31, 2023	June 30, 2023	September 30, 2023	December 31, 2023
Common Equity	$6,375.0	$6,476.7	$6,887.6	$6,882.5
Preferred Stock	$81.8	$81.8	$81.8	$81.8
Long-Term Debt	$6,294.4	$6,295.5	$6,297.2	$6,298.9
Total Capitalization	$12,751.2	$12,854.0	$13,266.6	$13,263.2

Capital Components	March 31, 2024	June 30, 2024	September 30, 2024	December 31, 2024
Common Equity	$6,907.5	$7,385.5	$7,766.8	$7,917.2
Preferred Stock	$81.8	$81.8	$81.8	$81.8
Long-Term Debt	$6,644.1	$6,790.2	$6,791.9	$7,238.6
Total Capitalization	$13,633.5	$14,257.5	$14,640.5	$15,237.6

Sources:

Form 10-Q, 10-K.

Staff Data Request No. 0112.

Union Electric Company, d/b/a Ameren Missouri
Case No. GR-2024-0369

Historical Consolidated Capital Structures for Ameren Corporation

(*Dollars in Millions)*

Capital Components	March 31, 2022	June 30, 2022	September 30, 2022	December 31, 2022
Common Equity	43.09%	42.31%	42.83%	43.03%
Preferred Stock	0.57%	0.56%	0.54%	0.53%
Long-Term Debt	56.34%	57.14%	56.62%	56.44%
Total Capitalization	100.00%	100.00%	100.00%	100.00%

Capital Components	March 31, 2023	June 30, 2023	September 30, 2023	December 31, 2023
Common Equity	43.03%	42.40%	41.94%	41.35%
Preferred Stock	0.53%	0.52%	0.51%	0.47%
Long-Term Debt	56.44%	57.09%	57.55%	58.18%
Total Capitalization	100.00%	100.00%	100.00%	100.00%

Capital Components	March 31, 2024	June 30, 2024	September 30, 2024	December 31, 2024
Common Equity	41.03%	40.14%	41.25%	41.26%
Preferred Stock	0.46%	0.45%	0.45%	0.44%
Long-Term Debt	58.50%	59.41%	58.30%	58.29%
Total Capitalization	100.00%	100.00%	100.00%	100.00%

Historical Consolidated Capital Structures for Ameren Missouri

(*Dollars in Millions)*

Capital Components	March 31, 2022	June 30, 2022	September 30, 2022	December 31, 2022
Common Equity	52.11%	50.24%	51.84%	51.91%
Preferred Stock	0.73%	0.69%	0.67%	0.67%
Long-Term Debt	47.17%	49.08%	47.50%	47.42%
Total Capitalization	100.00%	100.00%	100.00%	100.00%

Capital Components	March 31, 2023	June 30, 2023	September 30, 2023	December 31, 2023
Common Equity	50.00%	50.39%	51.92%	51.89%
Preferred Stock	0.64%	0.64%	0.62%	0.62%
Long-Term Debt	49.36%	48.98%	47.47%	47.49%
Total Capitalization	100.00%	100.00%	100.00%	100.00%

Capital Components	March 31, 2024	June 30, 2024	September 30, 2024	December 31, 2024
Common Equity	50.67%	51.80%	53.05%	51.96%
Preferred Stock	0.60%	0.57%	0.56%	0.54%
Long-Term Debt	48.73%	47.63%	46.39%	47.50%
Total Capitalization	100.00%	100.00%	100.00%	100.00%

Sources:

Form 10-Q, 10-K.

Staff Data Request No. 0112.

Union Electric Company, d/b/a Ameren Missouri
Case No. GR-2024-0369

Authorized ROE and Equity Ratio of the US Utility by Sector
2010-2024

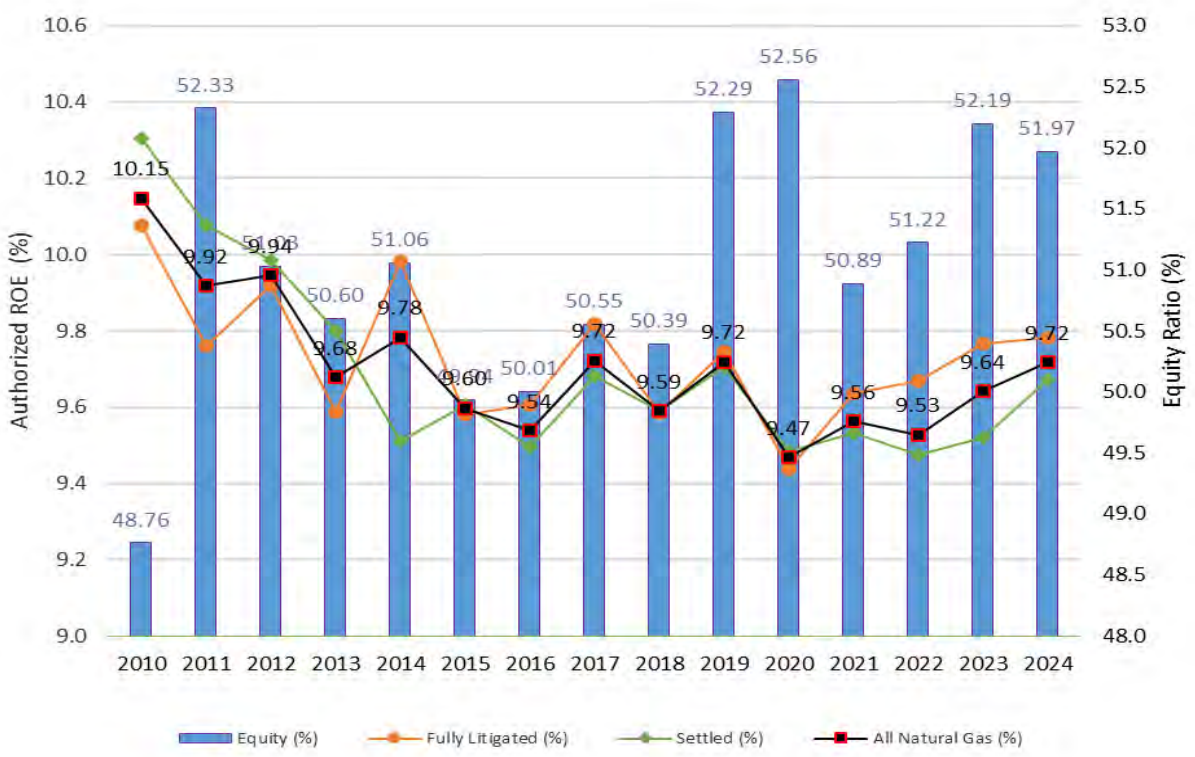
	Natural Gas Utility								
	Fully Litigated			Settled			Natural Gas Total		
Year	ROE (%)	Equity (%)	Case (No.)	ROE (%)	Equity (%)	Case (No.)	ROE (%)	Equity (%)	Case (No.)
2010	10.08	48.72	27	10.30	48.87	12	10.15	48.76	39
2011	9.76	52.64	8	10.08	51.82	8	9.92	52.33	16
2012	9.92	51.06	21	9.99	50.97	14	9.94	51.03	35
2013	9.59	51.98	12	9.80	48.53	9	9.68	50.60	21
2014	9.98	52.86	15	9.51	48.61	11	9.78	51.06	26
2015	9.58	51.17	5	9.60	49.32	11	9.60	49.94	16
2016	9.61	52.11	10	9.50	48.60	16	9.54	50.01	26
2017	9.82	50.39	7	9.68	50.63	17	9.72	50.55	24
2018	9.59	50.56	17	9.59	50.27	23	9.59	50.39	40
2019	9.74	52.00	12	9.70	52.47	21	9.72	52.29	33
2020	9.44	52.38	12	9.48	52.66	23	9.47	52.56	35
2021	9.63	50.59	13	9.53	51.02	30	9.56	50.89	43
2022	9.67	52.51	9	9.47	50.70	24	9.53	51.22	33
2023	9.77	53.37	21	9.52	51.01	22	9.64	52.19	43
2024	9.78	50.91	18	9.67	52.72	26	9.72	51.97	44

Note:

Source: S&P Global Market Intelligence, Retrieved in March 7 , 2025

Union Electric Company, d/b/a Ameren Missouri
Case No. GR-2024-0369

Authorized ROE and Equity Ratio of the US Utility by Sector
Natural Gas Distribution Utility
2010-2024



Note:

Source: S&P Global Market Intelligence, Retrieved in March 7, 2025