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|---|---|
| *Exhibit No.:* | |
| *Issue(s):* | *Rate of Return* |
| *Witness:* | *Seoung Joun Won, PhD* |
| *Sponsoring Party:* | *MoPSC Staff* |
| *Type of Exhibit:* | *Rebuttal Testimony* |
| *Case No.:* | *ER-2024-0319* |
| *Date Testimony Prepared:* | *January 17, 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. ER-2024-0319

***Jefferson City, Missouri***
***January 17, 2024***

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

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**CASE NO. ER-2024-0319**

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 December 3, 2024?

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, David Murray, and Christopher C. Walters 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 and Mr. Walters sponsored testimonies on behalf of the

Missouri Office of the Public Counsel ("OPC") and the Missouri Industrial Energy Consumers ("MIEC"), respectively.

## 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 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

[1] Page 10, lines 2-4, Bulkley's Direct Testimony.
[2] Page 16, lines 22-23, Sagel's Direct Testimony.
[3] Schedule DTS-D1, Sagel's Direct Testimony.
[4] Ms. Bulkley incorrectly used the terms ROE and COE interchangeably (Footnote No.1 of page 4 in her direct testimony). 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.

Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and the Bond Yield Risk Premium ("BYRP" or "Risk Premium") analysis.[5]

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 4.24% as of June 30, 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

[5] Page 6, lines 5-8, Bulkley's Direct Testimony.
[6] Page 7, lines 17-18, Sagel's Direct Testimony.
[7] Page 16, lines 22-23, 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. 0108.

Ameren Missouri's cost of preferred stock of 4.18% and embedded cost of long-term debt of 4.12%.[11]

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 52%.[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 9.49% to 9.99%.[13] Staff expresses concern with Mr. Murray's recommended capital structure using Ameren Corp.'s capital structure ratios instead of Ameren Missouri's.

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

A. Mr. Walters recommended an ROE of 9.50% within a range of 9.00% to 10.00%, and a ROR of 7.01% based on his recommended use of Ameren Missouri's proposed ratemaking capital structure of ** [redacted] ** and applying Ameren Missouri's cost of preferred stock of 4.18% and embedded cost of long-term debt of ** [redacted] **.[14]

Although Staff does not agree with all of the detailed methods regarding Mr. Walters' ROR analysis, Staff has no major concerns. Because Mr. Walters' recommended ROE of 9.50% falls within Staff's reasonable recommended range of 9.49% to 9.99%, Staff considers his recommended ROE reasonable. Regarding Mr. Walters' capital structure and other cost of capital components, he relied on Ameren Missouri Confidential Schedule DTS-D1.

[11] Page 2, lines 3-4, and Schedule DM-D-8, Murray's Direct Testimony.
[12] Table 2 (Page 38), Won's Direct Testimony.
[13] Page 4, line 1, Won's Direct Testimony.
[14] Staff's Data Request No. 0678.

In this rebuttal testimony, Staff will not address any major issues regarding Walters' recommended ROE and the projected standalone capital structures of Ameren Missouri due to the reasons explained above. 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 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.

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.[15]

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 10.07% to 12.17%.[16] For her proposed ROE, Ms. Bulkley considered company-specific risk factors along with current and prospective capital market conditions.[17] 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 10.07% to 12.17%.[18]

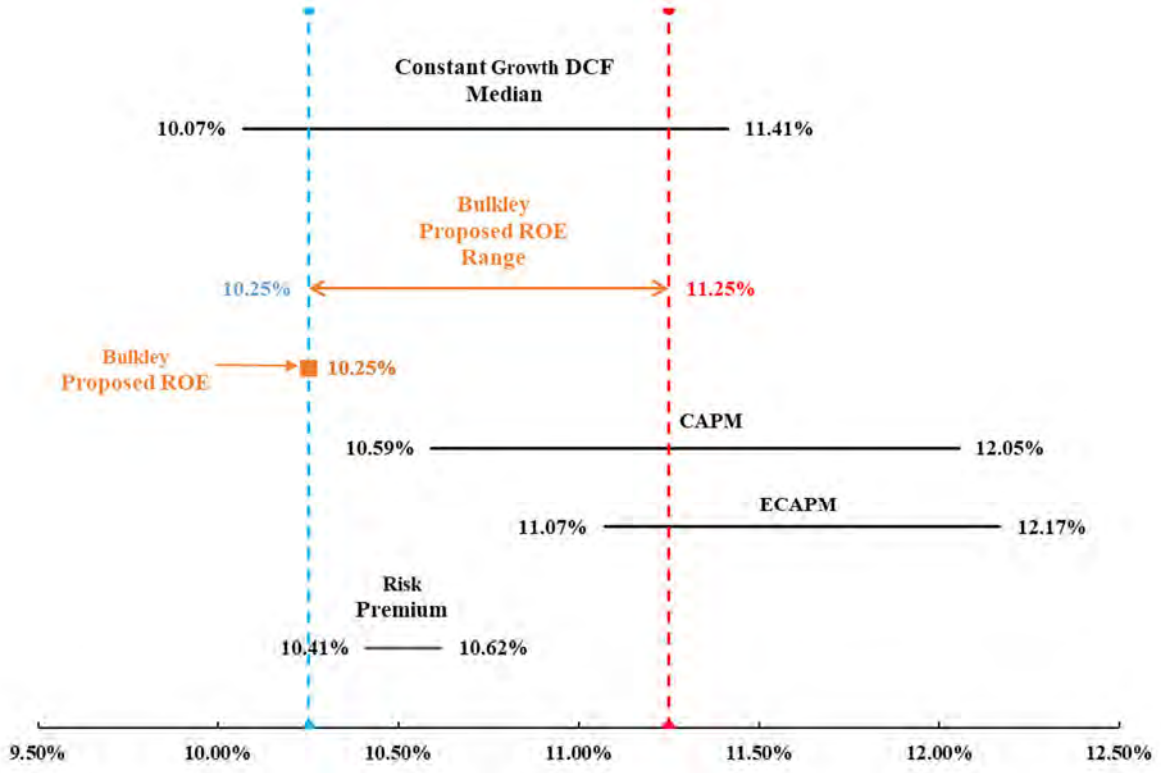
Q. How did Ms. Bulkley estimate her COE?

A. Ms. Bulkley applied COE estimation models such as constant-growth DCF, the CAPM, the ECAPM, and the BYRP to her electric utility proxy group.[19] Ms. Bulkley's estimated COE for each analysis method and proposed ROE are summarized in Figure 1:[20]

*continued on next page*

[15] Page 10, lines 1-4, Bulkley's Direct Testimony.
[16] Schedule AEB-D2, Attachment 1, Bulkley's Direct Testimony.
[17] Page 8, lines 4-7, Bulkley's Direct Testimony.
[18] Figure 1 (Page 8) and Schedule AEB-D2, Attachment 1, Bulkley's Direct Testimony.
[19] Page 6, lines 5-8, Bulkley's Direct Testimony.
[20] Figure 1 (Page 8) 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 9.74% for electric utility rate cases completed in 2024.[21] 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. The following summarizes the steps that led to Ms. Bulkley's overestimation of her COE:

[21] S&P Capital IQ Pro, Retrieved on January 2, 2025.

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 seventeen (17) electric utility companies for her proxy group for Ameren Missouri's COE estimation.[22] Ms. Bulkley selected her electric utility proxy group from thirty-six (36) publicly-traded companies classified by Value Line Investment Survey ("Value Line") as electric utilities, using seven (7) screening criteria during the selection process.[23] The following is the list of Ms. Bulkley's electric utility proxy group, associated ticker symbols, and Standard & Poor's ("S&P") issuer credit ratings:

**Table 1. Electric Utility Proxy Group and Ticker**

| | Company | Ticker | S&P |
|---|---|---|---|
| 1 | Alliant Energy Corporation | LNT | A- |
| 2 | American Electric Power Company, Inc. | AEP | BBB+ |
| 3 | Avista Corporation | AVA | BBB |
| 4 | CMS Energy Corporation | CMS | BBB+ |
| 5 | DTE Energy Company | DTE | BBB+ |
| 6 | Duke Energy Corporation | DUK | BBB+ |
| 7 | Entergy Corporation | ETR | BBB+ |
| 8 | Evergy, Inc. | EVRG | BBB+ |
| 9 | IDACORP, Inc. | IDA | BBB |
| 10 | NextEra Energy, Inc. | NEE | A- |
| 11 | NorthWestern Corporation | NWE | BBB |
| 12 | OGE Energy Corporation | OGE | BBB+ |
| 13 | Pinnacle West Capital Corporation | PNW | BBB+ |
| 14 | Portland General Electric Company | POR | BBB+ |
| 15 | PPL Corporation | PPL | A- |
| 16 | Southern Company | SO | A- |
| 17 | Xcel Energy Inc. | XEL | BBB+ |

[22] Figure 7 (Page 30) and Schedule AEB-D2, Bulkley's Direct Testimony.
[23] Pages 29-30, 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 she did not include within her screening criteria whether most of a company's assets are regulated. When selecting a proxy group for this proceeding, it is crucial to assess whether the proxy company is comparable to Ameren Missouri, a regulated electric utility. The portion of total assets that is not regulated can significantly impact the risk and financial performance of a company.

For instance, Edison Electric Institute ("EEI") reported two categories of regulated electric utility companies: one is classified as 'Regulated,' where 80% or more of total assets are regulated, and the other is classified as 'Mostly Regulated,' where less than 80% of total assets are regulated.[24] Ms. Bulkley included NextEra Energy, Inc. ("NEE") in her proxy group.[25] EEI classified NEE as 'Mostly Regulated,' whereas Ameren Corp. was classified as 'Regulated.'[26] According to Ameren Missouri's response to Staff's data request, approximately 99% of Ameren Missouri's consolidated total assets were regulatory operation assets as of March 31, 2024.[27]

Q. Why is it important to consider the portion of total assets that are non-regulated when choosing a proxy group?

A. When constructing a proxy group for estimating the range of COEs to recommend an ROE, it is important to ensure that the included companies have similar regulatory profiles to facilitate meaningful comparisons. Companies facing similar regulatory

[24] EEI, 2023 Financial Review: Annual Report of the U.S. Investor-Owned Electric Utility Industry.
[25] Figure 7 (Page 30) and Schedule AEB-D2, Bulkley's Direct Testimony.
[26] EEI, 2023 Financial Review: Annual Report of the U.S. Investor-Owned Electric Utility Industry.
[27] Staff Data Request No. 0125.1.

constraints and operating conditions are more directly comparable in terms of financial metrics, valuation multiples, and risk factors.

Utilities operating in regulated industries are subject to oversight and regulation by governmental agencies. The regulatory environment can affect various aspects of a company's operations, including pricing, capital investment, and profit margins. By only including companies in the proxy group with a significant portion of regulated assets for the purpose of ratemaking of the utility, it ensures that the group reflects the stability and predictability inherent in regulated industries.

Considering the proportion of regulated assets when choosing a proxy group helps to ensure that the group accurately represents the characteristics, risk profile, and financial performance of companies operating within regulated industries like utilities. This approach enhances the reliability and relevance of estimating Ameren Missouri's COE analysis conducted using the proxy group.

Q. What percentage of Ameren Corp's and Ameren Missouri's total assets are non-regulatory assets?

A. The average percentage of non-regulated assets from Ameren Corp.'s and Ameren Missouri's total assets has been approximately 1% and 0.03%, respectively, for the past three years.[28]

Q. Is NEE comparable for estimating Ameren Missouri's COE with commensurate risks?

[28] Staff Data Request Nos. 0125 and 0125.1.

A. No. EEI reported that NEE's non-regulated assets are more than 20% of their total assets.[29] Their non-regulated assets provide a less stable source of revenue for companies compared to their regulated assets that typically involve long-term contracts or agreements with regulatory bodies. Utilities with a larger portion of non-regulated assets tend to have higher risk profiles compared to those with a lower proportion of unregulated assets, which may be subject to lower market volatility and more economic certainty.

The proportion of regulated assets can also impact the financial performance of companies within the proxy group. Regulated utilities, for example, may have more predictable cash flows and earnings due to the steady demand for essential services like electricity. Including utilities with a significant portion of regulated assets, such as Ameren Missouri, can therefore provide stability and consistency in financial performance metrics such as revenue, earnings, and dividends. A lower risk associated with utilities leads to a lower required return from investors. In contrast, a higher proportion of non-regulatory businesses requires a higher return, resulting in a higher estimated COE compared to regulatory businesses.

**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

[29] EEI, 2023 Financial Review: Annual Report of the U.S. Investor-Owned Electric Utility Industry.

rates.[30] 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.[31] 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 earning 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 horizon.[32] 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 electric 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").[33] 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 3.70% and 4.10% as reported by the Federal Open Market Committee ("FOMC") and the Congressional

[30] Pages 36-37, Bulkley's Direct Testimony.
[31] Value Line, Inc., How to Read a Value Line Report (2017).
[32] Page 129, David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.
[33] Page 302, Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.

Budget Office ("CBO"), respectively.[34] An example of Ms. Bulkley's unreasonably high growth rates is the Yahoo! Finance Earnings growth rate of 12.50% with the 180-day average stock price that was used to produce Portland General Electric Company's high DCF COE estimate of 17.38%.[35] Such high growth rates should not be used in constant-growth DCF COE estimates because no electric utility can sustain a growth rate of 12.50% 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, represented by the projected long-term nominal GDP growth rates of 3.90%.[36] 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.[37] 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 minimum growth rate would be 9.64% instead of 10.07%.[38] Therefore, reasonable DCF COE results are lower than Ms. Bulkley's estimations.

[34] Federal Open Market Committee, retrieved on October 20, 2024, (https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20240918.pdf).
An Update to the Economic Outlook: 2024 to 2034, Congressional Budget Office, June 2024, (https://www.cbo.gov/publication/60419).
[35] Schedule AEB-D2, Attachment 3, Bulkley's Direct Testimony.
[36] 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).
[37] *Entergy Arkansas, Inc*., Opinion No. 575, 175 FERC ¶ 61,136 (2021).
[38] Schedule AEB-D2, Attachment 1, Bulkley's Direct Testimony and 1 Summary, Won's Rebuttal Workpaper.

**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 0.94, 0.80, and 0.77 with three different risk-free rates of 4.66%, 4.40%, and 4.30% and a total market return of 12.51% resulting in three different market risk premiums ("MRP") of 7.86%, 8.11%, and 8.21%.[39] For her electric utility proxy group, the ranges of Ms. Bulkley's CAPM and ECAPM COE estimates are 10.59% to 12.05% and 11.07% to 12.17%, respectively.[40]

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 10.74% using median results of constant-growth DCF, Ms. Bulkley's average CAPM and ECAPM COE estimate of 11.19% and 11.52%, respectively, are too high.[41] 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 12.51% is much higher than the US regular market return estimates of around 7.5% to 10.5%.[42]

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

[39] Schedule AEB-D2, Attachment 3 and Attachment 4, Bulkley's Direct Testimony.
[40] Schedule AEB-D2, Attachment 1, Bulkley's Direct Testimony.
[41] 1 Summary, Won's Rebuttal Workpaper.
[42] Forbes Advisor, Average Stock Market Return, retrieved November 8, 2024, https://www.forbes.com/advisor/investing/average-stock-market-return/.

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 1.60% and an estimated weighted average long-term growth rate of 10.83%.[43] Step 2, using the constant growth DCF model with her estimated dividend yield and growth rate, Ms. Bulkley estimated the required market return of 12.51%.[44] 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 U.S. Treasury bond yield, and projected yields on the 30-year U.S. Treasury bond, range from 7.86% to 8.21%.[45] Table 2 shows Ms. Bulkley's three MRP estimates and their associated estimation methods:[46]

**Table 2. Bulkley's Market Risk Premium Estimation**

| | Estimate Method | MRP |
|---|---|---|
| [1] | Current 30-day average of 30-year U.S. Treasury bond yield | 7.86% |
| [2] | Near-term projected 30-year U.S. Treasury bond yield | 8.11% |
| [3] | Blue Chip Projected 30-year U.S. Treasury bond yield | 8.21% |
| | Average | 8.06% |

Q. What is wrong with Ms. Bulkley's constant-growth DCF model estimation of the required market return of 12.56% 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

[43] Schedule AEB-D2, Attachment 6, Bulkley's Direct Testimony.
[44] Ibid.
[45] Schedule AEB-D2, Attachment 4, Bulkley's Direct Testimony.
[46] Ibid.

was unavailable.[47] Dividend yield information is essential to utilizing the DCF model.[48] 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 10.75%, which is 176 basis points lower than Ms. Bulkley's total market return of 12.51%.[49] Taking into account all three risk-free rates that Ms. Bulkley used results in estimated MRPs of less than 7%.[50]

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

A. Other financial institutions' MRP estimates range from 4.54% to 6.80%.[51] 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%.[52] The American Appraisal Risk Premium Quarterly, Value Line, and Duff & Phelps (now Kroll) calculated MRPs of 6.0%, 5.5%, and 5.0%, respectively.[53] On February 8, 2024, The Kroll recommended U.S. equity risk premium remains at 5.5%.[54] 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.[55] Professor Aswath Damodaran of NYU Stern School of

[47] Schedule AEB-D2, Attachment 6, Bulkley's Direct Testimony.
[48] David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.
[49] 6 Market Return, Won's Rebuttal Workpaper.
[50] 4 CAPM, Won's Rebuttal Workpaper.
[51] *See* Figure 2, "MRP and corresponding COE".
[52] 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.
[53] FERC Opinion No. 569, 169 FERC ¶ 61,129.
[54] Kroll Cost of Capital Recommendations and Potential Upcoming Changes – February 8, 2024 Update.
[55] Kroll, the Stocks, Bonds, Bills, and Inflation (SBBI®) Monthly Dataset.

Business, a noted equity valuation professor, currently estimates MRPs in the range of 5.23% (geometric average) to 6.80% (arithmetic average):[56]

**Figure 2. MRP and corresponding COE**

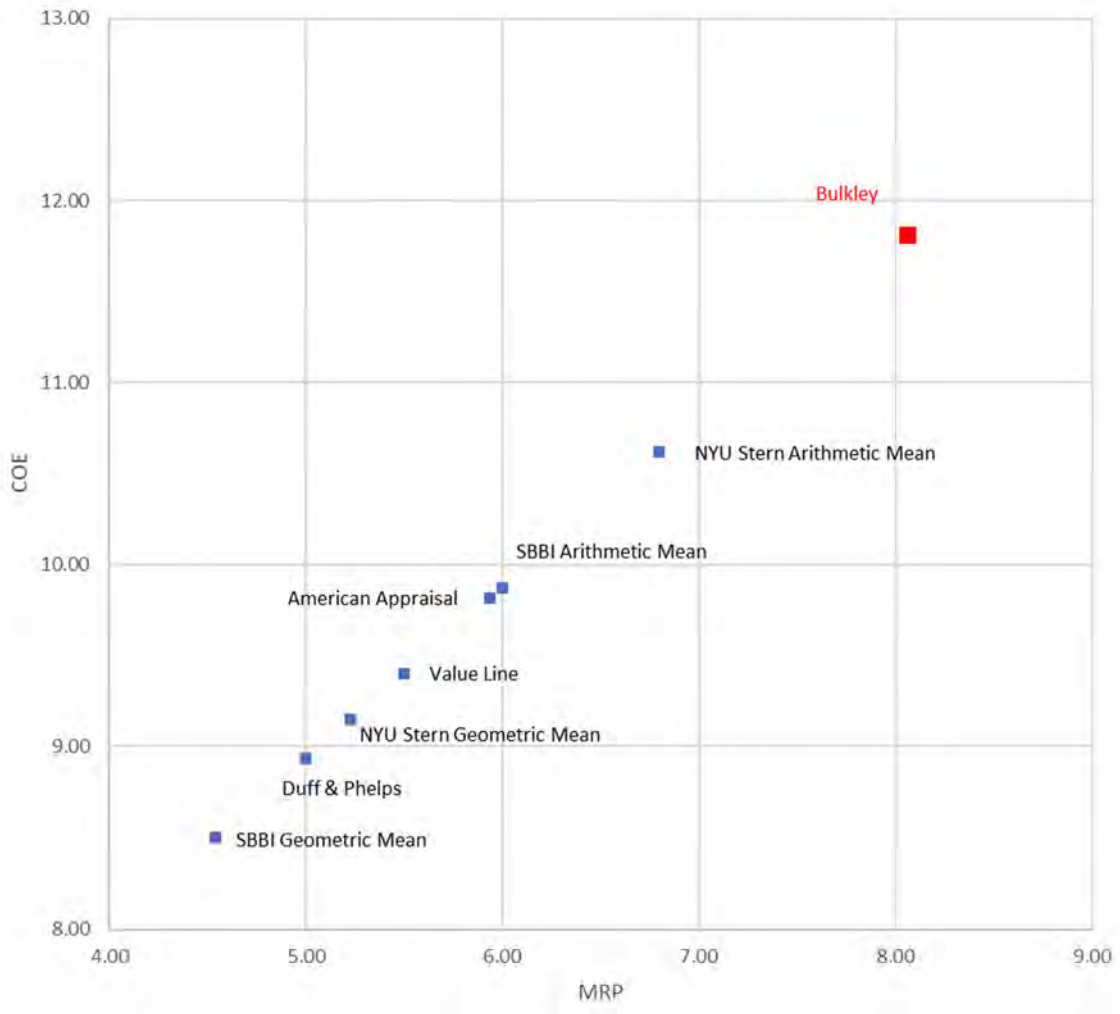



Figure 2 compares COE estimates with their corresponding MRPs, for Ms. Bulkley's electric proxy group, calculated with other reputable financial institution's reasonable MRPs and Ms. Bulkley's unreasonable MRPs, assuming the same projected 30-year U.S. Treasury

[56] Risk Premium, Damodaran Online, Stern School of Business of New York University, updated January 1, 2024.

bond yield of 4.30% used in Ms. Bulkley's estimation.[57] As shown in Figure 2, Ms. Bulkley's CAPM COE estimate of 11.89%, with her corresponding average MRP of 8.06%, is an extreme outlier when compared with the other reliable published estimates. This clearly indicates that Ms. Bulkley's MRPs are too high resulting in her COE estimates being too high as well.

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 12.56%.

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 10.75%, Ms. Bulkley's average CAPM COE estimate would be 9.72%.[58] This is well within the range of Staff's COE estimates of 8.28% to 10.06%,[59] and much lower than Ms. Bulkley's average CAPM COE estimate of 11.18%.

**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 11.19%, Ms. Bulkley's average ECAPM COE estimate of 11.52% is unreasonably high because she assumes an excessively high market return of 12.51%.[60] In addition, the ECAPM model itself overestimates COE

[57] Schedule AEB-4, Bulkley's Direct Testimony.
[58] 1 Summary, Won's Rebuttal Workpaper.
[59] Schedule SJW-d15, Won's Direct Testimony.
[60] 1 Summary, Won's Rebuttal Workpaper.

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.[61] 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%.[62] The academic literature has estimated a fairly wide range of adjustment parameters, with much of the variation between studies arising from differences in methodology and time periods, so the alpha estimates are not strictly comparable.[63] 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.[64] 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.

[61] 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.
[62] Page 190, Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.
[63] Page 20, The Brattle Group, Estimating the Cost of Equity for Regulated Companies.
[64] Page 190, Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.

**6. Bond Yield Risk Premium Analysis**

Q. What is BYRP analysis?

A. The conventional BYRP 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.[65] This premium required by investors for an investment in common stock over an investment in corresponding debt is called the risk premium.[66] 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).[67] Ms. Bulkley used quarterly average data of risk-free rates and authorized ROEs derived from electric utility rate cases from Q1 1980 through Q2 2024 as reported by Regulatory Research Associates ("RRA").[68] Ms. Bulkley's regression analysis results in the following equation:

$$\text{Risk Premium (\%)} = 0.079\% - 0.4157 \text{ Risk-Free Rate (\%)}.$$[69]

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

[65] 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.
[66] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 108.
[67] Page 46, lines 5-15, Bulkley's Direct Testimony.
[68] Page 47, lines 15-17, Bulkley's Direct Testimony.
[69] Figure 11 (p.48), Bulkley's Direct Testimony.

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.[70]

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

A. Ms. Bulkley's BYRP ROE estimates range from 10.41% to 10.62%, with a mean of 10.50%.[71] For her BYRP ROE estimation, Ms. Bulkley used three risk-free rates: 30-day average of the 30-year U.S. Treasury bond yield (i.e., 4.66%), the near-term (Q3 2024 – Q3 2025) projections of the 30-year U.S. Treasury bond yield (i.e., 4.40%), and a longer-term (2025 – 2029) projection of the 30-year U.S. Treasury bond yield (i.e., 4.30%).[72]

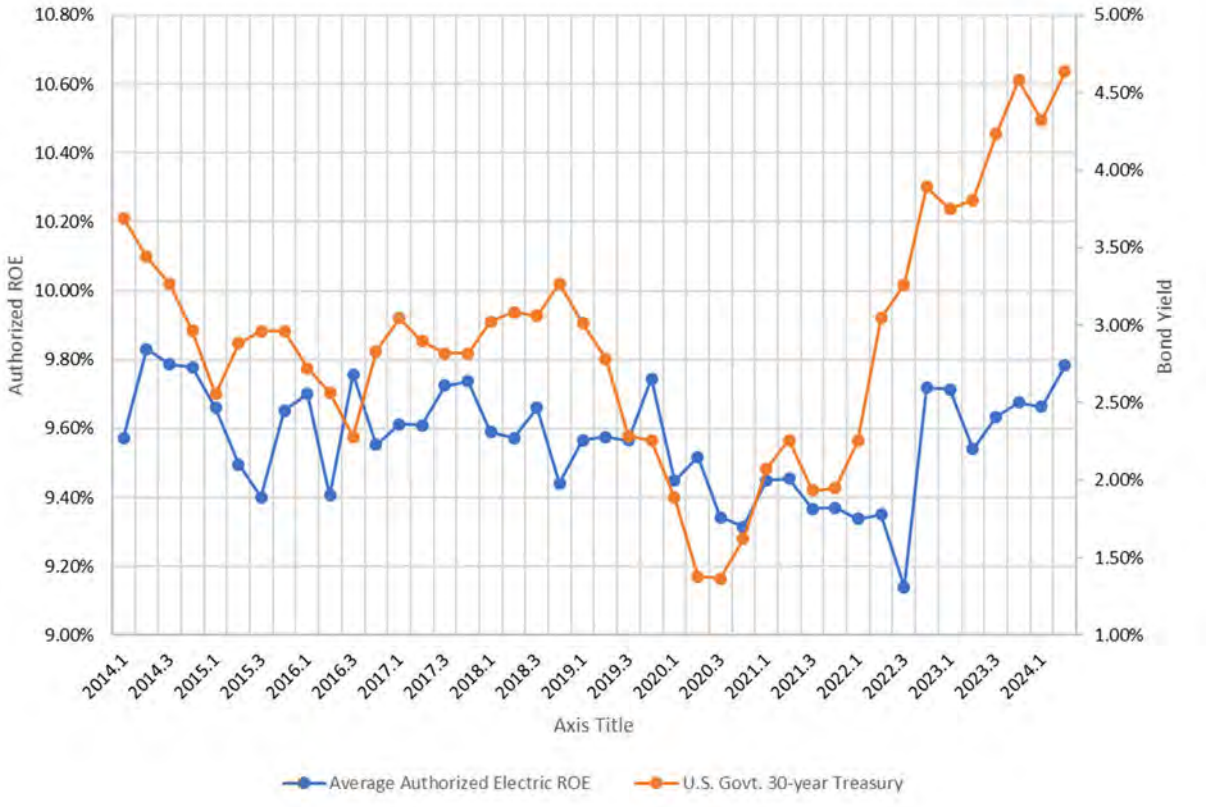
Q. What are Staff's concerns with Ms. Bulkley's BYRP ROE estimates?

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 electric 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 electric utilities and 30-year Treasury bond yields for the period from 1980 to 2023.[73] However, the relationship between authorized ROEs of vertically integrated electric utilities and 30-year Treasury bond

[70] 30-year Treasury yields increased by 295 bps from 1.69% on December 3, 2021, to 4.64% on July 1, 2024.
[71] Figure 12 (p. 49), Bulkley's Direct Testimony.
[72] Page 48, lines 4-8. and Schedule AEB-D2, Attachment 7, Bulkley's Direct Testimony.
[73] Schedule AEB-D2, Attachment 7, Bulkley's Direct Testimony.

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.

**Figure 3. Authorized ROE of Electric Utility and 30-year Treasury Bond Yield**[74]




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,

[74] S&P RRA and FRED Economic Data, https://fred.stlouisfed.org/series/DGS30.
[75] Federal Reserve Economic Data, Market Yield on U.S. 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.

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.

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.[77] 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**

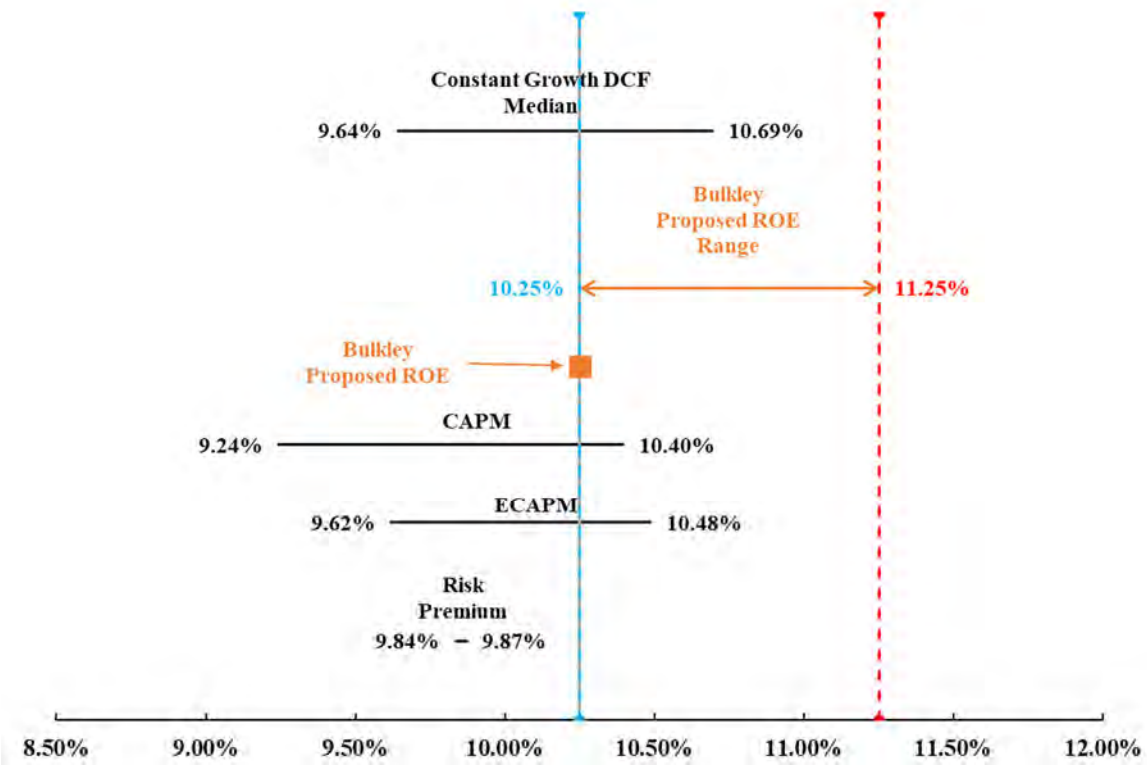
Q. Has Staff recalculated Ms. Bulkley's COE estimate for Ameren Missouri using proper inputs and models?

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

[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] Paragraph 342, FERC Opinion No. 569, 169 FERC ¶ 61,129.

**Table 3. Bulkley's Estimation and Staff's Recalculation**[78]

| | Cost of Equity - Average | |
|---|---|---|
| COE Estimation Methods | Bulkley Estimation | Staff Recalculation |
| DCF | 10.74% | 10.14% |
| CAPM | 11.19% | 9.72% |




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.

[78] 1 Summary, Won's Rebuttal Workpaper.

**8. Authorized ROEs**

Q. What is your concern on Ms. Bulkley's statement that "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."?[79]

A. 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:

ROE = Net Income / 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:

COE = Risk-Free Rate + β (Market Return – Risk-Free Rate)[80]

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

[79] Footnote No.1 (Page 4), Bulkley's Direct Testimony.
[80] 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?

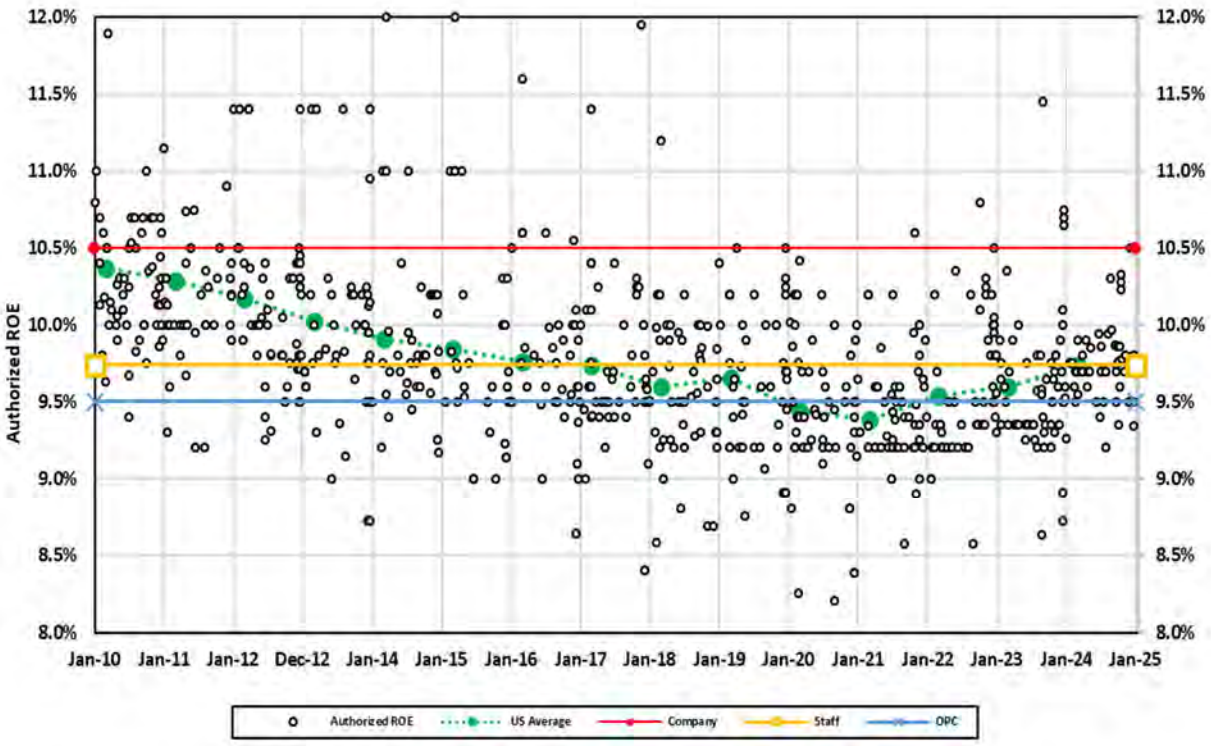
A. According to the regulatory principles established by the *Hope* and *Bluefield* cases, an authorized ROE of a utility should be comparable to other investments of commensurate risk.[81] As investors evaluate the authorized ROE of one utility in comparison to the returns offered by other regulated 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 10.50%.

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 June 2024. Figure 4 displays the authorized ROE for electric utilities in the US, alongside Ms. Bulkley's proposed ROE of 10.50% and the ROE recommendations of 9.74% and 9.50% from Staff and Mr. Murray, respectively. In the calendar year of 2024, recently authorized comparable ROEs ranged from 9.20% to 10.50%, with an average of 9.74% for all 54 electric utility cases and an average of 9.84% for the 31 vertically integrated electric utility cases.[82]

[81] *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).
[82] S&P Global Market Intelligence, Retrieved in July 2, 2024.

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




Of the 54 electric rate case decisions regarding authorized ROEs in the US in 2024, only four (4) authorized ROEs fall within Ms. Bulkley's reasonable ROE range of 10.25% to 11.25%,[83] while 44 authorized ROEs fall within Staff's reasonable ROE range from 9.49% to 9.99%.[84] Among the ten (10) exceptions outside Staff's reasonable ROE range, five (5) authorized ROEs are lower than 9.49%, and five (5) authorized ROEs are greater than 9.99%; these five (5) high authorized ROEs fall within the range of 10.23% to 10.50% and were determined by the California Public Utility Commission and the Florida Public Utility Commission in 2024.[85]

[83] Page 7, lines 26-27, Bulkley's Direct Testimony.
[84] Page 40, line 20, Won's Direct Testimony.
[85] 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. Business and Regulatory 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.[86] 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.[87]

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 in electric utility rate cases completed in calendar year 2024 (9.74%) by 51 basis points.[88] Even when considering only vertically

[86] Page 7, lines 2-6, Bulkley's Direct Testimony.
[87] Page 49, lines 14-16, Bulkley's Direct Testimony.
[88] Schedule SJW-r3, Won's Rebuttal Testimony, and S&P Capital IQ Pro, Retrieved on January 2, 2025.

integrated electric utility decisions in calendar year 2024, the average authorized ROE stands at 9.84%.[89]

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?[90]

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.[91] Ms. Bulkley cited S&P's explanation of the importance of regulatory support for utilities' significant capital expenditures.[92] 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.

First, Ameren Missouri's capital expenditures ratio of 80% does not mean that Ameren Missouri faces a higher risk of under-recovery than the proxy group and warranting a higher authorized ROE. Ameren Missouri, like other utilities in Missouri, benefit from an improved regulatory environment.[93] Ameren Missouri elected to use Plant in Service Accounting ("PISA"), which allows electric utilities in Missouri to defer for future recovery 85% of their depreciation expense and returns from plant and equipment placed in service between rate cases.[94] In addition, Ameren Missouri also has a renewable energy standard rate adjustment

[89] Schedule SJW-r4, Won's Rebuttal Testimony, and S&P Capital IQ Pro, Retrieved on January 2, 2025.
[90] Page 59, lines 14-15, Bulkley's Direct Testimony.
[91] Page 55, lines 9-10 and Page 56, lines 1-2, Bulkley's Direct Testimony.
[92] Pages 50-52, Bulkley's Direct Testimony.
[93] Senate Bill No. 564, General Assembly of the State of Missouri 2018, as amended by SB 745, General Assembly of the State of Missouri 2022.
[94] Section 393.1400.2(1) and related provisions of the Missouri Revised Statutes.

mechanism ("RESRAM").[95] While the Commission does not allow all possible cost recovery mechanisms included in Ms. Bulkley's Schedule AEB-D2, Attachment 9, Staff disagrees with Ms. Bulkley that the use of PISA and RESRAM does not reduce Ameren Missouri's regulatory risk relative to its peers.[96]

Second, if Ms. Bulkley's assertion is true, then Ameren Missouri's risk profiles were affected by their significant capital expenditures and their credit rating should have been changed. However, Ameren Corp. and Ameren Missouri's credit ratings have not changed in the past five years.[97] Ameren Corp. and Ameren Missouri are currently rated by Moody's and S&P. The corporate credit ratings assigned to Ameren Corp by Moody's and S&P are 'Baa1' and 'BBB+', respectively.[98] The corporate credit ratings assigned to Ameren Missouri by Moody's and S&P are also 'Baa1' and 'BBB+', respectively.[99]

Q. Do you agree with Ms. Bulkley that Ameren Missouri has greater risk than the proxy group?[100]

A. No. Ameren Missouri takes advantage of several alternative regulatory mechanisms such as PISA and RESRAM. 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, "Similarly, approximately 68 percent of the operating companies held by the proxy group have some form of capital cost

[95] Page 54, lines 9-10, Bulkley's Direct Testimony.
[96] Page 53, lines 1-15, Bulkley's Direct Testimony.
[97] S&P Capital IQ Pro.
[98] S&P Rating Report – Ameren Corporation.
[99] S&P Rating Report - Union Electric Company.
[100] Page 59, lines 14-15, and Page 70, lines 15-19, Bulkley's Direct Testimony.

recovery mechanism in place."[101] 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. For ratemaking of Ameren Missouri's electric service, Mr. Sagel proposed an authorized ROR of 7.398%, calculated using Ms. Bulkley's proposed ROE of 10.25% and projected embedded costs as of December 31, 2024, ** [redacted] **.[102]

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.[103] As of June 30, 2024, Ameren Missouri reported the embedded cost of preferred stock of 4.18%.[104] 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."[105]

[101] Page 64, lines 1-2, Bulkley's Direct Testimony.
[102] Table 2 (Page 11) and Schedule DTS-D1, Sagel' Direct Testimony.
[103] Page 15, lines 10-12, Sagel' Direct Testimony.
[104] Staff Data Request No. 0108.
[105] Page 15, lines 3-6, Sagel' Direct Testimony.

Staff will continue monitoring how Ameren Missouri's actual cost of preferred stock is realized as of December 31, 2024.

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.[106] As of June 30, 2024, Ameren Missouri reported the embedded cost of long-term debt of 4.24%.[107] Staff has concerns with Mr. Sagel's proposed cost of the long-term debt because there is a possibility that Mr. Sagel's projected embedded cost of debt of ** [redacted] ** as of December 31, 2024, will be not the same as Ameren Missouri's actual embedded cost of debt on December 31, 2024. In addition, Mr. Sagel did not provide evidence that his requested cost of long-term debt of ** [redacted] ** would be consistent with the market cost of debt at the time of issuance. In other words, Staff has concerns about whether Mr. Sagel's projected cost of debt will properly reflect Ameren Missouri's current actual cost of debt.

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] **.[108] The capital structure that Mr. Sagel proposed is based on Ameren Missouri's

[106] Page 14, lines 13-15, Sagel' Direct Testimony.
[107] Staff Data Request No. 0108.
[108] Table 2 (Page 11) and Schedule DTS-D1, Sagel' Direct Testimony.

forecasted debt, preferred stock, and common stock balances as of December 31, 2024.[109] However, Staff does not have sufficient evidence that Mr. Sagel's forecast will be realized.

Staff is investigating how Ameren Missouri's proposed capital structure, as of December 31, 2024, is achievable. 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 Q3 2021 to Q2 2024, Ameren Corp.'s average capital structure was approximately 42.30% common equity, 0.52% preferred stock, and 57.18% long-term debt, and Ameren Missouri's average capital structure was 51.39% common equity, 0.66% preferred stock, and 47.96% long-term debt. As of June 30, 2024, Ameren Corp. reported approximately 40.14% common equity, 0.45% preferred stock, and 59.41% long-term debt, and Ameren Missouri reported approximately 51.80% common equity, 0.57% preferred stock, and 47.63% long-term debt. 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*

[109] Page 2, lines 12-14, Sagel' Direct Testimony.

## 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%.[110]

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

A. Mr. Murray asserted that his ROE recommendation is "based on my recommended authorized ROE range of 9.00% to 9.50%."[111] 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 7.9% to 8.1% and 7.4% to 8.4% using a multi-stage DCF approach and a CAPM analysis, respectively.[112] Mr. Murray stated "I estimate the COE for regulated electric utilities to be in the approximate range of 7.5% to 8.5%, which is about 0.75% higher than my estimate of 7% to 7.5% in Ameren Missouri's 2022 rate case."[113]

[110] Page 2, lines 3-4, Murray's Direct Testimony.
[111] Page 2, lines 23-24, Murray's Direct Testimony.
[112] Page 26, line 21, and Page 31, lines 13-14, Murray's Direct Testimony.
[113] Page 3, lines 8-9, Murray's Direct Testimony.

Mr. Murray conducted a reasonableness test using a simple rule of thumb the Chartered Financial Analyst ("CFA") suggests in its curriculum to estimate the COE by adding a 3% risk premium to a range of recent yield-to-mutuality ("YTM") of Ameren Missouri's long-term bonds of around 5.5% implies a COE of approximately 8.5%.[114]

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

A. Staff does not have any major concerns with Mr. Murray's recommended ROE of 9.50% because it is within Staff's recommended range of ROE of 9.49% to 9.99%.[115] 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.

**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 as of March 31, 2024; Mr. Murray states this is in line with Ameren Corp's recent targeted consolidated capital structure.[116]

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.[117] Mr. Murray asserts that Ameren Corp. dynamically

[114] Page 31, lines 24-25, Murray's Direct Testimony.
[115] Schedule SJW-d16, Won's Direct Testimony.
[116] Page 33, lines 20-23, Murray's Direct Testimony.
[117] Pages 34-35, Murray's Direct Testimony.

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 of setting its authorized ROR.[118] Based on his presumption, Mr. Murray concluded that the proportion of the common equity ratio would be lowered by around 10% (e.g., from 52% to 42%) if Ameren Missouri's consistent balance of short-term debt were included in its ratemaking capital structure.[119]

However, as of September 30, 2024, Ameren Missouri has common equity ratios of approximately 52.91%.[120] According to Ameren Missouri's response to Staff's data request, Ameren Missouri has neither internally identified nor externally communicated a targeted capital structure.[121] In addition, the recent average equity ratio for other electric utility companies throughout the U.S. is approximately 50%.[122]

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

A. According to RRA, there were 54 fully litigated electric 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 50.32% and 49.41%, respectively, and the average equity ratio of all 54 electric rate cases in 2024 is 50.05%. Considering the historical average equity ratio of approximately 50% used for calculating the allowed ROR for electric 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 U.S. in the years 2010 to the second quarter of 2024, along with the number of cases considered:

[118] Page 35, lines 21-23, Murray's Direct Testimony.
[119] Page 31, lines 1-2, Murray's Direct Testimony.
[120] Schedules SJW-r1 and SJW-r2, Won's Rebuttal Testimony, and Staff's Data Request No. 0107.
[121] Staff's Data Request No. 0112.
[122] S&P Capital IQ Pro: Regulatory Research Association, retrieved January 2, 2025.

**Table 4. Equity Ratios of Electric Utility Rate Cases (2010-2024)**[123]

| Year | Fully Litigated ROE (%) | Fully Litigated Equity (%) | Fully Litigated Case (No.) | Electric Settled ROE (%) | Electric Settled Equity (%) | Electric Settled Case (No.) | Electric Total ROE (%) | Electric Total Equity (%) | Electric Total Case (No.) |
|---|---|---|---|---|---|---|---|---|---|
| 2010 | 10.35 | 47.68 | 27 | 10.39 | 49.49 | 34 | 10.37 | 48.63 | 61 |
| 2011 | 10.39 | 48.17 | 26 | 10.12 | 48.01 | 16 | 10.29 | 48.11 | 42 |
| 2012 | 10.28 | 49.98 | 29 | 10.06 | 51.40 | 29 | 10.17 | 50.62 | 58 |
| 2013 | 9.85 | 48.25 | 17 | 10.12 | 49.70 | 32 | 10.03 | 49.14 | 49 |
| 2014 | 10.05 | 50.14 | 21 | 9.73 | 50.26 | 17 | 9.91 | 50.19 | 38 |
| 2015 | 9.66 | 48.98 | 16 | 10.04 | 49.28 | 15 | 9.84 | 49.12 | 31 |
| 2016 | 9.74 | 49.75 | 25 | 9.80 | 47.51 | 17 | 9.77 | 48.85 | 42 |
| 2017 | 9.73 | 49.23 | 24 | 9.75 | 49.30 | 29 | 9.74 | 49.26 | 53 |
| 2018 | 9.63 | 48.70 | 22 | 9.57 | 49.76 | 26 | 9.60 | 49.27 | 48 |
| 2019 | 9.58 | 51.07 | 27 | 9.76 | 49.66 | 20 | 9.66 | 50.62 | 47 |
| 2020 | 9.43 | 49.87 | 32 | 9.46 | 50.45 | 23 | 9.44 | 50.12 | 55 |
| 2021 | 9.23 | 50.71 | 30 | 9.57 | 49.79 | 25 | 9.38 | 50.31 | 55 |
| 2022 | 9.48 | 51.25 | 32 | 9.62 | 50.32 | 21 | 9.54 | 50.93 | 53 |
| 2023 | 9.64 | 52.10 | 39 | 9.52 | 50.57 | 24 | 9.60 | 51.59 | 63 |
| 2024 | 9.71 | 50.32 | 36 | 9.78 | 49.41 | 18 | 9.74 | 50.05 | 54 |
| Average | 9.78 | 49.75 | 27 | 9.82 | 49.66 | 23 | 9.80 | 49.79 | 50 |

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"):

[123] S&P Capital IQ Pro, Retrieved on January 2, 2025.

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].[124]

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. since January 1, 2022.[125] 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.[126] 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.[127] Ameren Missouri and Ameren Corp. are rated by S&P and Moody's.[128] Therefore, Ameren Missouri meets the first criterion.

[124] David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.
[125] Staff's Data Request No. 0125 (1).
[126] Staff's Data Request No. 0125 (2).
[127] Ameren Missouri, Ratings Score Snapshot, RatingsDirect, S&P Global Ratings. December 14, 2024.
[128] S&P Capital IQ Pro.

For the second guideline, neither Ameren Corp. nor Ameren Corp.'s other subsidiaries guarantee the securities issued by Ameren Missouri.[129] Also, Ameren Missouri's assets have not secured Ameren Corp. or its subsidiaries' debts, nor do they secure each other's debts.[130] 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.[131] 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.[132] This is not concerning because Ameren Corp.'s non-utility operations are insignificant.

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."?[133]

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 evidence that Ameren Missouri managed a 52% equity ratio for ratemaking purposes.[134]

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."?[135]

[129] Staff's Data Request No. 0125 (5).
[130] Staff's Data Request No. 0125 (6).
[131] Staff's Data Request No. 0128.
[132] Staff's Data Request No. 0127.
[133] Page 35, lines 21-23, Murray's Direct Testimony.
[134] Page 35, lines 7-20, Murray's Direct Testimony.
[135] Page 43, lines 3-4, Murray's Direct Testimony.

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. 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."[136]

Q. Do you agree with Mr. Murray's statement that "The Commission should lower Ameren Missouri's allowed equity ratio to ensure ratepayers receive the benefit of a lower capital cost during Ameren Missouri's period of rapidly increasing rate base prompted by SB 564."?[137]

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.[138] 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.

[136] Staff's Data Request No. 0122.
[137] Page 45, lines 14-17, Murray's Direct Testimony.
[138] Page 36, 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 10.50% 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 and MIEC witness Mr. Walter, 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 9.74%, within a range of 9.49% to 9.99%.

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<br>d/b/a Ameren Missouri's Tariffs to Adjust<br>Its Revenues for Electric Service | )<br>)<br>) | Case No. ER-2024-0319 |

**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 14th day of January 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. ER-2024-0319**

## Historical Consolidated Capital Structures for Ameren Corporation

(*Dollars in Millions)*

| Capital Components | December 31, 2021 | March 31, 2022 | June 30, 2022 | September 30, 2022 |
|---|---|---|---|---|
| Common Equity | $9,699.2 | $9,804.7 | $9,879.0 | $10,200.0 |
| Preferred Stock | $129.6 | $129.6 | $129.6 | $129.6 |
| Long-Term Debt | $12,818.7 | $12,820.4 | $13,341.7 | $13,484.1 |
| Total Capitalization | $22,647.6 | $22,754.7 | $23,350.4 | $23,813.7 |

| Capital Components | December 31, 2022 | March 31, 2023 | June 30, 2023 | September 30, 2023 |
|---|---|---|---|---|
| Common Equity | $10,507.9 | $10,606.2 | $10,696.6 | $11,043.6 |
| Preferred Stock | $129.6 | $129.6 | $129.6 | $129.6 |
| Long-Term Debt | $13,784.4 | $14,281.1 | $14,678.0 | $14,678.5 |
| Total Capitalization | $24,421.9 | $25,016.9 | $25,504.3 | $25,851.7 |

| Capital Components | December 31, 2023 | March 31, 2024 | June 30, 2024 | September 30, 2024 |
|---|---|---|---|---|
| Common Equity | $11,349.0 | $11,443.1 | $11,537.9 | $11,832.4 |
| Preferred Stock | $129.6 | $129.6 | $129.6 | $129.6 |
| Long-Term Debt | $15,970.2 | $16,315.9 | $17,079.4 | $16,723.1 |
| Total Capitalization | $27,448.8 | $27,888.6 | $28,746.8 | $28,685.1 |

## Historical Consolidated Capital Structures for Ameren Missouri

(*Dollars in Millions)*

| Capital Components | December 31, 2021 | March 31, 2022 | June 30, 2022 | September 30, 2022 |
|---|---|---|---|---|
| Common Equity | $5,830.6 | $5,880.1 | $5,980.9 | $6,377.9 |
| Preferred Stock | $81.8 | $81.8 | $81.8 | $81.8 |
| Long-Term Debt | $5,321.4 | $5,322.5 | $5,842.7 | $5,844.4 |
| Total Capitalization | $11,233.8 | $11,284.5 | $11,905.5 | $12,304.1 |

| Capital Components | December 31, 2022 | March 31, 2023 | June 30, 2023 | September 30, 2023 |
|---|---|---|---|---|
| Common Equity | $6,347.1 | $6,375.0 | $6,476.7 | $6,887.6 |
| Preferred Stock | $81.8 | $81.8 | $81.8 | $81.8 |
| Long-Term Debt | $5,798.6 | $6,294.4 | $6,295.5 | $6,297.2 |
| Total Capitalization | $12,227.6 | $12,751.2 | $12,854.0 | $13,266.6 |

| Capital Components | December 31, 2023 | March 31, 2024 | June 30, 2024 | September 30, 2024 |
|---|---|---|---|---|
| Common Equity | $6,882.5 | $6,907.5 | $7,385.5 | $7,766.8 |
| Preferred Stock | $81.8 | $81.8 | $81.8 | $81.8 |
| Long-Term Debt | $6,298.9 | $6,644.1 | $6,790.2 | $6,830.3 |
| Total Capitalization | $13,263.2 | $13,633.5 | $14,257.5 | $14,678.9 |

**Sources:**

Form 10-Q, 10-K.

Staff Data Request No. 0107.

**Union Electric Company, d/b/a Ameren Missouri**
**Case No. ER-2024-0319**

## Historical Consolidated Capital Structures for Ameren Corporation

(*Dollars in Millions)*

| Capital Components | December 31, 2021 | March 31, 2022 | June 30, 2022 | September 30, 2022 |
|---|---|---|---|---|
| Common Equity | 42.83% | 43.09% | 42.31% | 42.83% |
| Preferred Stock | 0.57% | 0.57% | 0.56% | 0.54% |
| Long-Term Debt | 56.60% | 56.34% | 57.14% | 56.62% |
| Total Capitalization | 100.00% | 100.00% | 100.00% | 100.00% |

| Capital Components | December 31, 2022 | March 31, 2023 | June 30, 2023 | September 30, 2023 |
|---|---|---|---|---|
| Common Equity | 43.03% | 42.40% | 41.94% | 42.72% |
| Preferred Stock | 0.53% | 0.52% | 0.51% | 0.50% |
| Long-Term Debt | 56.44% | 57.09% | 57.55% | 56.78% |
| Total Capitalization | 100.00% | 100.00% | 100.00% | 100.00% |

| Capital Components | December 31, 2023 | March 31, 2024 | June 30, 2024 | September 30, 2024 |
|---|---|---|---|---|
| Common Equity | 41.35% | 41.03% | 40.14% | 41.25% |
| Preferred Stock | 0.47% | 0.46% | 0.45% | 0.45% |
| Long-Term Debt | 58.18% | 58.50% | 59.41% | 58.30% |
| Total Capitalization | 100.00% | 100.00% | 100.00% | 100.00% |

## Historical Consolidated Capital Structures for Ameren Missouri

(*Dollars in Millions)*

| Capital Components | December 31, 2021 | March 31, 2022 | June 30, 2022 | September 30, 2022 |
|---|---|---|---|---|
| Common Equity | 51.90% | 52.11% | 50.24% | 51.84% |
| Preferred Stock | 0.73% | 0.73% | 0.69% | 0.67% |
| Long-Term Debt | 47.37% | 47.17% | 49.08% | 47.50% |
| Total Capitalization | 100.00% | 100.00% | 100.00% | 100.00% |

| Capital Components | December 31, 2022 | March 31, 2023 | June 30, 2023 | September 30, 2023 |
|---|---|---|---|---|
| Common Equity | 51.91% | 50.00% | 50.39% | 51.92% |
| Preferred Stock | 0.67% | 0.64% | 0.64% | 0.62% |
| Long-Term Debt | 47.42% | 49.36% | 48.98% | 47.47% |
| Total Capitalization | 100.00% | 100.00% | 100.00% | 100.00% |

| Capital Components | December 31, 2023 | March 31, 2024 | June 30, 2024 | September 30, 2024 |
|---|---|---|---|---|
| Common Equity | 51.89% | 50.67% | 51.80% | 52.91% |
| Preferred Stock | 0.62% | 0.60% | 0.57% | 0.56% |
| Long-Term Debt | 47.49% | 48.73% | 47.63% | 46.53% |
| Total Capitalization | 100.00% | 100.00% | 100.00% | 100.00% |

**Sources:**

Form 10-Q, 10-K.
Staff Data Request No. 0107.

**Union Electric Company, d/b/a Ameren Missouri**
**Case No. ER-2024-0319**

# Authorized ROE and Equity Ratio of the U.S Utility by Sector
## Electric Utility
## 2010-2024

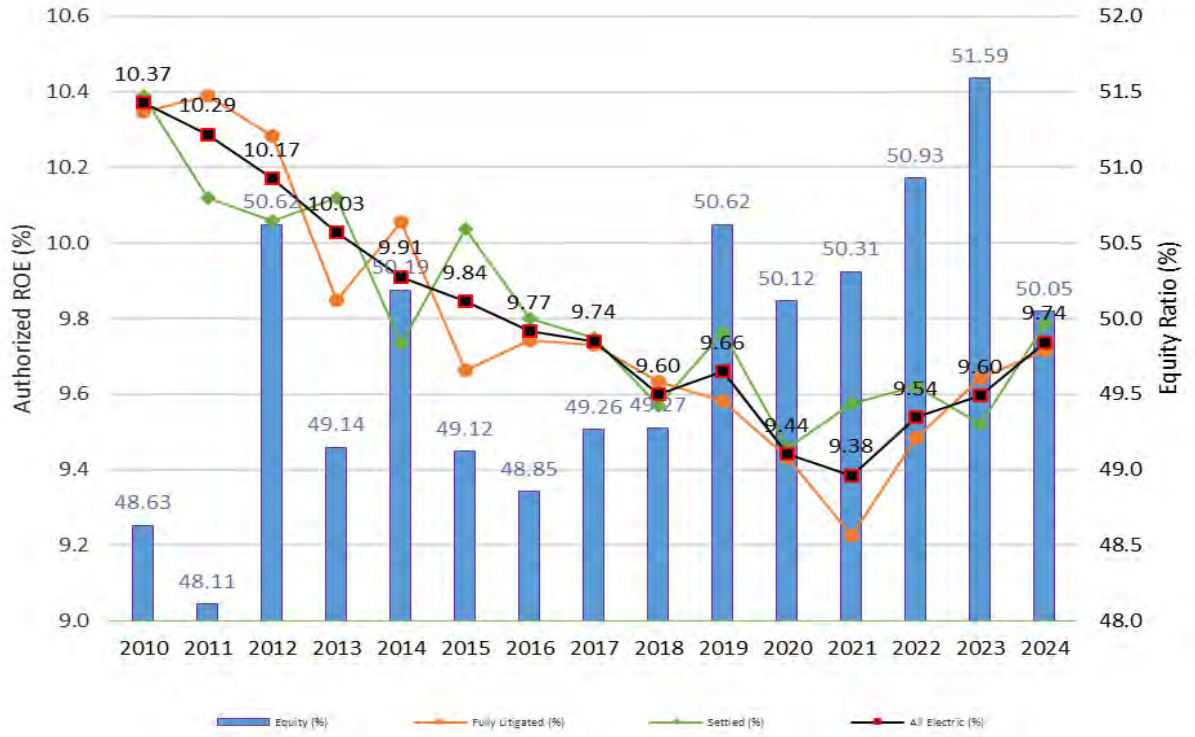
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **Electric** | | | | | |
| | Fully Litigated | | | Settled | | | US Electric Total | | |
| Year | ROE (%) | Equity (%) | Case (No.) | ROE (%) | Equity (%) | Case (No.) | ROE (%) | Equity (%) | Case (No.) |
| 2010 | 10.35 | 47.68 | 27 | 10.39 | 49.49 | 34 | 10.37 | 48.63 | 61 |
| 2011 | 10.39 | 48.17 | 26 | 10.12 | 48.01 | 16 | 10.29 | 48.11 | 42 |
| 2012 | 10.28 | 49.98 | 29 | 10.06 | 51.40 | 29 | 10.17 | 50.62 | 58 |
| 2013 | 9.85 | 48.25 | 17 | 10.12 | 49.70 | 32 | 10.03 | 49.14 | 49 |
| 2014 | 10.05 | 50.14 | 21 | 9.73 | 50.26 | 17 | 9.91 | 50.19 | 38 |
| 2015 | 9.66 | 48.98 | 16 | 10.04 | 49.28 | 15 | 9.84 | 49.12 | 31 |
| 2016 | 9.74 | 49.75 | 25 | 9.80 | 47.51 | 17 | 9.77 | 48.85 | 42 |
| 2017 | 9.73 | 49.23 | 24 | 9.75 | 49.30 | 29 | 9.74 | 49.26 | 53 |
| 2018 | 9.63 | 48.70 | 22 | 9.57 | 49.76 | 26 | 9.60 | 49.27 | 48 |
| 2019 | 9.58 | 51.07 | 27 | 9.76 | 49.66 | 20 | 9.66 | 50.62 | 47 |
| 2020 | 9.43 | 49.87 | 32 | 9.46 | 50.45 | 23 | 9.44 | 50.12 | 55 |
| 2021 | 9.23 | 50.71 | 30 | 9.57 | 49.79 | 25 | 9.38 | 50.31 | 55 |
| 2022 | 9.48 | 51.25 | 32 | 9.62 | 50.32 | 21 | 9.54 | 50.93 | 53 |
| 2023 | 9.64 | 52.10 | 39 | 9.52 | 50.57 | 24 | 9.60 | 51.59 | 63 |
| 2024 | 9.71 | 50.32 | 36 | 9.78 | 49.41 | 18 | 9.74 | 50.05 | 54 |

Note:

Source: S&P Global Market Intelligence, Retrieved in January 2, 2025

**Union Electric Company, d/b/a Ameren Missouri**
**Case No. ER-2024-0319**

**Authorized ROE and Equity Ratio of the U.S Utility by Sector**
**Electric Utility**
**2010-2024**




Note:
Source: S&P Global Market Intelligence, Retrieved in January 2, 2025

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**Union Electric Company, d/b/a Ameren Missouri**
**Case No. ER-2024-0319**

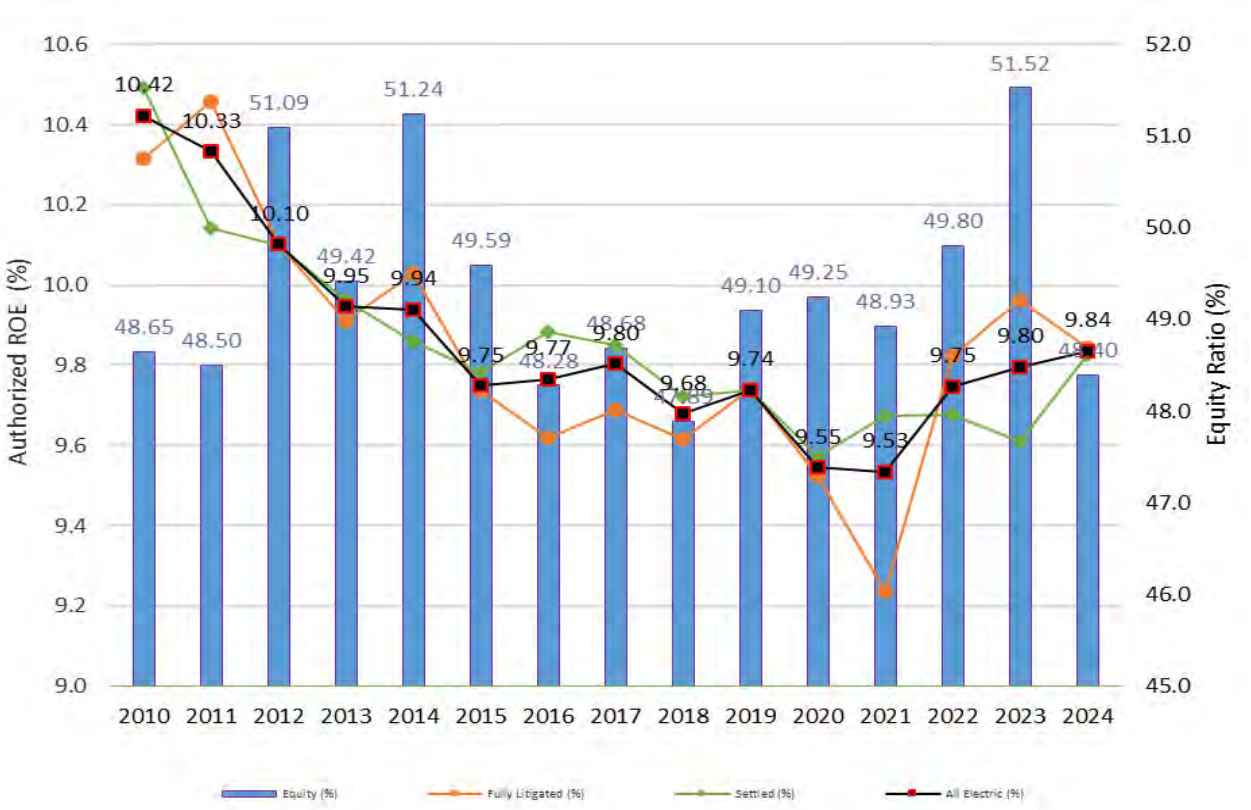
## Authorized ROE and Equity Ratio of the U.S Utility by Sector
## Vertically Integrated Electric Utility
## 2010-2024

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Electric** | | | | |
| | Fully Litigated | | | | Settled | | Vertically Integrated Electric Utility | | |
| Year | ROE (%) | Equity (%) | Case (No.) | ROE (%) | Equity (%) | Case (No.) | ROE (%) | Equity (%) | Case (No.) |
| 2010 | 10.32 | 47.37 | 16 | 10.49 | 49.63 | 25 | 10.42 | 48.65 | 41 |
| 2011 | 10.46 | 48.51 | 17 | 10.14 | 48.47 | 11 | 10.33 | 48.50 | 28 |
| 2012 | 10.10 | 49.69 | 16 | 10.10 | 52.34 | 23 | 10.10 | 51.09 | 39 |
| 2013 | 9.91 | 46.46 | 9 | 9.96 | 50.90 | 22 | 9.95 | 49.42 | 31 |
| 2014 | 10.03 | 51.39 | 9 | 9.86 | 51.03 | 10 | 9.94 | 51.24 | 19 |
| 2015 | 9.74 | 49.03 | 13 | 9.78 | 52.00 | 4 | 9.75 | 49.59 | 17 |
| 2016 | 9.62 | 49.47 | 9 | 9.88 | 47.21 | 11 | 9.77 | 48.28 | 20 |
| 2017 | 9.69 | 47.89 | 8 | 9.85 | 49.06 | 20 | 9.80 | 48.68 | 28 |
| 2018 | 9.62 | 46.44 | 9 | 9.72 | 48.76 | 14 | 9.68 | 47.89 | 23 |
| 2019 | 9.74 | 50.83 | 10 | 9.74 | 47.65 | 15 | 9.74 | 49.10 | 25 |
| 2020 | 9.52 | 48.71 | 15 | 9.57 | 49.78 | 12 | 9.55 | 49.25 | 27 |
| 2021 | 9.24 | 49.03 | 8 | 9.67 | 48.87 | 17 | 9.53 | 48.93 | 25 |
| 2022 | 9.82 | 50.85 | 12 | 9.68 | 48.76 | 13 | 9.75 | 49.80 | 25 |
| 2023 | 9.96 | 52.93 | 19 | 9.61 | 49.72 | 17 | 9.80 | 51.52 | 36 |
| 2024 | 9.84 | 48.69 | 17 | 9.83 | 48.08 | 14 | 9.84 | 48.40 | 31 |

Note:
Source: S&P Global Market Intelligence, Retrieved in January 2, 2025

**Union Electric Company, d/b/a Ameren Missouri**
**Case No. ER-2024-0319**

## Authorized ROE and Equity Ratio of the U.S Utility by Sector
## Vertically Integrated Electric Utility
## 2010-2024




Note:
Source: S&P Global Market Intelligence, Retrieved in January 2, 2025

**Schedule SJW-r4-2**