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Witness:	*Seoung Joun Won*
Sponsoring Party:	*MoPSC Staff*
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MISSOURI PUBLIC SERVICE COMMISSION

FINANCIAL AND BUSINESS ANALYSIS DIVISION

FINANCIAL ANALYSIS DEPARTMENT

DIRECT TESTIMONY

OF

SEOUNG JOUN WON, PhD

UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI

CASE NO. GR-2024-0369

Jefferson City, Missouri
February 28, 2025

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OF

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UNION ELECTRIC COMPANY, INC.,
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 Commission Staff ("Staff"), and my title is Regulatory Compliance Manager for the Financial Analysis Department, in the Financial and Business Analysis Division.

Q. What is your educational and employment background?

A. I received my Bachelor of Arts, Master of Arts, and Doctor of Philosophy in Mathematics from Yonsei University and my Bachelor of Business Administration in Financial Accounting from Seoul Digital University in Seoul, South Korea, and earned my Doctor of Philosophy in Economics from the University of Missouri - Columbia. In addition, I passed several certificate examinations for Finance Specialist in South Korea for Accounting Management, Financial Risk Manager, Enterprise Resource Planning Accounting Consultant, Derivatives Investment Advisor, Securities Investment Advisor, and Financial Planner. Prior to joining the Commission, I taught both undergraduate and graduate level mathematics at the Korean Air Force Academy and Yonsei University for 13 years. I served as the Director of the Education and Technology Research Center in NeoEdu for 5 years. A more detailed account of

my educational background and occupational experience appears in Appendix 1, attached to this Direct Testimony.

Q. Have you previously filed testimony before the Commission?

A. Yes, I have appeared previously before the Commission. I have testified on rate of return ("ROR"), cost of capital, capital structure, finance issuance, financial capability, feasibility study, and valuation analysis on mergers and acquisitions, etc. Please refer to Appendix 1, attached to this Direct Testimony, for a list of my testimony, recommendations, or memorandums previously filed with the Commission and the associated issues.

Q. On behalf of whom are you testifying in this proceeding?

A. I am testifying in this Direct Testimony before the Commission on behalf of Staff.

Q. What is the purpose of your direct testimony?

A. In this testimony, Staff presents evidence and provides a recommendation regarding the appropriate ROR to be used in establishing the natural gas service ("NGS") rates of Union Electric Company, d/b/a Ameren Missouri ("Ameren Missouri"), a wholly-owned subsidiary of Ameren Corporation ("Ameren Corp.").

Staff's analyses and conclusions are supported by the data presented in the attached Confidential Appendix 2, Schedules SJW-d2 through SJW-d17. Staff's workpapers will be provided to the parties at the time of the filing of this Direct Testimony. Staff will make any additional source documents of specific interest available upon the request of any party to this case or the Commission.

I. EXECUTIVE SUMMARY

Q. Please provide a summary of your methodology and findings concerning the ROR that should be utilized in setting rates for Ameren Missouri's NGS utility operations in this proceeding.

A. To recommend the NGS of Ameren Missouri's just and reasonable ROR in this proceeding, Staff estimated cost of capital components such as an authorized return on equity ("ROE"), a cost of preferred stock, a cost of debt ("COD"), and a ratemaking capital structure of Ameren Missouri. Regarding the estimation of authorized ROE of Ameren Missouri in this proceeding, Staff estimated the market-based cost of common equity ("COE") for Ameren Missouri using well-respected COE estimation methodologies such as the discounted cash flow ("DCF") model, the capital asset pricing model ("CAPM"), and the bond yield plus risk premium ("BYPRP") method.[1] Staff's analysis also considers changes in economic and capital market conditions over time, as well as Ameren Missouri's relative risk compared to an NGS utility proxy group. By utilizing estimated COEs, Staff calculated a reasonable range of authorized ROEs and recommended a just and reasonable ROE for Ameren Missouri.[2]

Q. Please summarize the result of Staff's ROR analysis and your recommendation in this proceeding.

A. Staff's recommendation of a 9.64% authorized ROE will fairly compensate Ameren Missouri for its current market COE and balance the interests of all stakeholders, particularly considering that Staff found the current market COE estimates for Ameren Missouri

[1] FERC ¶ 61,154 (2020), *order on reh'g*, Opinion No. 569-B, 173 FERC ¶ 61,159 (2020).
[2] COE is the return required by investors; ROE is the return set by a regulatory utility commission. Although some experts contend that COE and ROE are synonymous, Staff's position is that they need not be. Observed utility COEs have been generally significantly lower than authorized ROEs in recent years.

are presently in the range of 9.39% to 9.89%.[3] Staff also recommends that the Commission use Ameren Missouri's actual stand-alone capital structure as of September 30, 2024, which is composed of 52.91% common equity, 0.56% preferred stock, and 46.53% long-term debt, for the purpose of setting Ameren Missouri's ROR in this proceeding.[4] Consistent with Staff's capital structure recommendation, Staff also recommends at this time that the Commission use Ameren Missouri's embedded cost of debt value of 4.24% as of September 30, 2024, resulting in the overall midpoint ROR of 7.09%, taken from the calculated range of 6.96% to 7.23%.[5]

Q. Please explain how your direct testimony is organized.

A. The rest of Staff's testimony is organized into six sections. In Section II, Staff discusses the regulatory principles regarding the cost of capital and ROR analysis that supports the determination of just and reasonable rates for Ameren Missouri's NGS utility services. In Section III, Staff reviews the current economic environment and capital market conditions that impact the ROR analysis in this proceeding. In Section IV, Staff investigates the corporate analysis of Ameren Missouri and its parent company, Ameren Corp, including their business and financial risk profiles, as well as their credit ratings. In Section V, Staff determines the ratemaking capital structure for Ameren Missouri's ROR, examining the financial relationship between Ameren Missouri and Ameren Corp. In Section VI, Staff explains its ROR analysis for Ameren Missouri, including proxy group selection, models for estimating the COE and ROE, recommended authorized ROE, and other components of the cost of capital. In Section VII, Staff concludes with the recommendation of Ameren Missouri's allowed ROR for ratemaking purposes in this proceeding.

[3] Schedule SJW-d16, Won's Direct Testimony.
[4] Schedule SJW-d6, Won's Direct Testimony.
[5] Schedule SJW-d16, Won's Direct Testimony.

II. REGULATORY PRINCIPLES

Q. Please describe the regulatory principles that guide the determination of a just and reasonable ROR for a regulated utility.

A. The determination of a fair ROR is guided by principles of economic and financial theory, as well as certain minimum constitutional standards. Investor-owned public utilities, such as Ameren Missouri, are considered private property that the state may not confiscate without appropriate compensation.

The United States Supreme Court has described the minimum characteristics of a constitutionally acceptable ROR in two frequently-cited cases: *Bluefield Waterworks & Improvement Co. v. Public Service Commission of West Virginia* and *Federal Power Commission v. Hope Natural Gas Co.*[6]

From these two decisions, Staff derives and applies the following principles to guide its recommendation of a just and reasonable ROR:

1. A return consistent with returns on investments of comparable risk;
2. A return that allows the utility to attract capital on reasonable terms; and
3. A return sufficient to assure confidence in the utility's financial integrity.

Embodied in these three principles is the economic theory of the opportunity cost of investment. This opportunity cost represents the return that investors forgo in order to invest in similar risk investment opportunities, which may vary depending on market and business conditions.

[6] *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).

Regulatory environments and methodologies of financial analysis have advanced significantly since the *Bluefield* and *Hope* decisions.[7] Furthermore, today's utilities compete for capital in a global market rather than a local one. Nevertheless, the parameters established in those cases are easily met using current methods and theories. The principle of a commensurate return is rooted in the concept of risk. Risk is a measure of the likelihood that an investment will not yield the expected returns. Financial theory posits that the return an investor anticipates corresponds to the level of risk inherent in the investment. Each line of business carries its own set of risks. Therefore, the return expected by Ameren Missouri's shareholders is comparable to that required by shareholders of utility companies with similar risk profiles.

Q. How did Staff estimate a just and reasonable authorized ROE considering commensurate return and comparable risk?

A. Staff employed COE and ROE estimation methods using a proxy group for recommending a just and reasonable authorized ROE. COE represents the minimum return investors are willing to accept for their investment in a company, compared to returns on other available investments, and can be directly estimated using market data. In contrast, an authorized ROE is determined by the Commission for monopoly industries, granting them the opportunity to earn just and reasonable compensation for their investments in the rate base. While stock market data cannot directly determine an authorized ROE, Staff can estimate a just and reasonable authorized ROE anticipated by the financial market by using previous Commission-determined ROEs and estimated COEs measured for a comparable group of companies with similar risks.

[7] Neither the Discounted Cash Flow ("DCF") nor the Capital Asset Pricing Model ("CAPM") methods were in use when those decisions were issued.

Q. What conclusions has Staff drawn regarding the regulatory principles guiding the determination of a just and reasonable ROE in this proceeding?

A. Staff primarily relied on the analysis of a comparable group of companies to estimate the COE for Ameren Missouri. This was done by applying the comparable-company approach using both the DCF method and the CAPM analysis. Properly utilized and applied in appropriate circumstances, both the DCF and CAPM methods can provide accurate estimates of utilities' COE. It is widely accepted in economic theory that a company earning its cost of capital will be able to attract capital and maintain financial integrity.[8]

To recommend a specific authorized ROE and a range of reasonable ROEs for ratemaking in this proceeding, Staff also utilized a BYPRP method to directly estimate ROE using the 10-year historical data of the relationship between authorized ROEs and utility bond yields of similar risk to Ameren Missouri and comparable to the COE estimation results of Staff's DCF and CAPM analysis. Considering all Staff methodology and procedures, the authorized ROE recommended by Staff should be commensurate with returns on investments in other companies of comparable risk. Therefore, Staff's recommendation of an authorized ROE, based on a COE derived from the comparison of peer companies, aligns with the principles established in the *Bluefield* and *Hope* decisions.

continued on next page

[8] Whittaker, W. (1991). The Discounted Cash Flow Methodology: Its Use in Estimating a Utility's Cost of Equity. Energy LJ, 12, 265.

III. MARKET ANALYSIS

Q. Why is consideration of economic and capital market conditions important for rate of return analysis?

A. Ensuring that an authorized ROE, recommended by COE estimations, is just and reasonable necessitates a thorough understanding of current economic and capital market conditions. The reason is that input values for COE estimate models are significantly influenced by these conditions. For example, higher interest rates and lower stock prices can result in an overestimation of COE in the CAPM and DCF models, respectively. Therefore, Staff emphasizes that an estimate of a utility's COE, which affects an authorized ROE recommendation, should align with common sense considerations of broader economic and capital market conditions.

1. Economic Condition

Q. Please summarize the current economic conditions regarding the COE.

A. To estimate the COE of Ameren Missouri's NGS, it is necessary to understand how economic conditions have evolved over the past several years. The COVID-19 pandemic profoundly impacted global economies, leading to significant shifts in financial markets and investment dynamics. As economies recover, proper assessment of the current state of the COE for the ROR analysis in this proceeding is essential, requiring an understanding of the post-COVID-19 economic changes. Supply chain disruptions were exacerbated by COVID-19-related lockdowns in China and the Russian invasion of Ukraine.[9] The fragility of the world's supply chains has continued, further fueled by escalating tensions in the Red Sea.[10]

[9] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published September 21, 2022, https://www.federalreserve.gov/newsevents/pressreleases/monetary20220921a.htm.
[10] Forbes, Most Surveyed Companies Are Vulnerable To Another Supply Chain Crisis, published January 28, 2024.

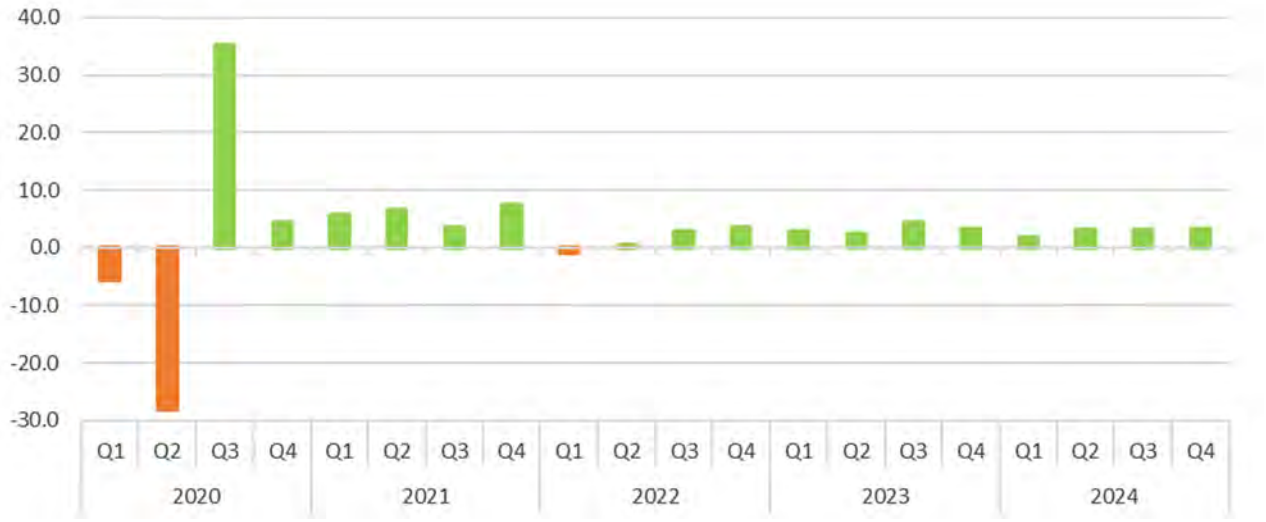
In the U.S., recent indicators suggest that economic activity has been expanding at a solid pace, with labor market conditions have generally eased, and the unemployment rate has moved up but remains low.[11] Inflation has made progress toward the Federal Open Market Committee ("FOMC")'s 2% objective but remains somewhat elevated at just under 3% in the latter half of 2024.[12] However, the FOMC had gained greater confidence that inflation is moving sustainably toward 2%, and judged that the risks to achieving its employment and inflation goals are roughly in balance.[13] One of the most important factors in the economic conditions that impact the COE is the interest rate, orchestrated by the Federal Reserve ("Fed") monetary policy. The Fed sets goals of achieving maximum employment and returning inflation to a rate of two percent over the longer run.[14] In light of the progress on inflation and the balance of risks, on September 18, 2024, the FOMC decided to lower the target range for the federal funds rate by a half percentage point, from 5.25%–5.50%, as set by the FOMC on July 26, 2023, to 4.75%–5.00%.[15] Additionally, the FOMC decided to lower the target range for the federal funds rate by 0.25 percentage points twice, on November 7, 2024, and December 18, 2024, resulting in a range of 4.25%–4.50%, and to continue reducing its holdings of Treasury securities, agency debt, and agency mortgage-backed securities to support maximum employment and return inflation to its 2% objective.[16]

[11] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published December 18, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20241218a1.pdf.
[12] Bureau of Labor Statistics, Consumer Price Index, retrieved January 10, 2025. https://www.bls.gov/news.release/pdf/cpi.pdf.
[13] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published September 18, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20240918a1.pdf.
[14] Boards of Governors of the Federal Reserve System, Statement on Longer-Run Goals and Monetary Policy Strategy, https://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals_202201.pdf.
[15] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published September 18, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20240918a1.pdf.
[16] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published November 7, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20241107a1.pdf.
Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published December 18, 2024,

Q. Please explain the economic conditions over the past several years using U.S. Gross Domestic Product ("GDP").

A. Since 2020, the economy has experienced enormous volatility. Real GDP fell by 32.9% in the second quarter of 2020, after a 5% decline in the first quarter.[17] The third and fourth quarters of 2020 saw real GDP increase by 33.4% and 4.3%, respectively.[18] Subsequently, in 2021, the quarterly real GDP growth rates were 6.3%, 6.7%, 2.3%, and 6.9%.

Figure 1. Real GDP – Percentage Change from Preceding Quarter[19]



Real GDP decreased at an annual rate of 1.4% and 0.9% in the first and second quarters of 2022, respectively.[20] Starting from Q3 2022, real GDP growth rates remained relatively stable through Q2 2023, consistently ranging between 2% and 3%.[21] The quarterly real GDP

https://www.federalreserve.gov/monetarypolicy/files/monetary20241218a1.pdf.
[17] Real GDP is GDP adjusted for inflation. Percentage change from the preceding quarter.
[18] Bureau of Economic Analysis, retrieved October 20, 2022, https://www.bea.gov/news/2021/gross-domestic-product-first-quarter-2021-advance-estimate.
[19] FRED, Economic Data, Real Gross Domestic Product (A191RL1Q225SBEA), https://fred.stlouisfed.org/series/A191RL1Q225SBEA.
[20] Bureau of Economic Analysis, Gross Domestic Product, Second Quarter 2022, Retrieved October 20, 2022, https://www.bea.gov/news/2022/gross-domestic-product-second-quarter-2022-advance-estimate.
[21] FRED, Economic Data, Real Gross Domestic Product (A191RL1Q225SBEA), https://fred.stlouisfed.org/series/A191RL1Q225SBEA.

had corresponding growth rates of 4.9% and 3.4% in the Q3 and Q4 of 2023, and were 1.6%. 3.0%, 3.1% and 3.0% in 2024.[22]

In June 2024, the Congressional Budget Office ("CBO") projected growth rates for real GDP of 1.8% to 2.2% and for real potential GDP of 2.0% over the next decade.[23] The CBO also projected a long-term nominal GDP growth rate of 3.90%.[24] This will be used to calculate the projected growth rate in the DCF model. All else being equal, the current projection of a relatively higher long-term nominal GDP growth rate will lead to inflated COE estimates.

Q. Please explain the economic conditions over the past several years using U.S. inflation rates.

A. While GDP growth rates and unemployment rates have returned to pre-COVID-19 levels, inflation rates have not yet reached the Fed's target level of 2%. When COVID-19 hit in 2020, it caused massive volatility in the financial markets.[25] As shown above, GDP fell sharply, followed by an equally sharp recovery through 2020.[26] Regarding COVID-19, there has been increased availability of vaccines, higher vaccination rates, and in March 2022, the Fed provided assurances that indicators of economic activity and employment continued to strengthen.[27] The recovery from the COVID-19 pandemic spurred fears of higher inflation and, consequently, increased market risk.[28] This heightened market

[22] Bureau of Economic Analysis, Gross Domestic Product, https://www.bea.gov/data/gdp/gross-domestic-product.
[23] Table 2-2 (p.49) and Table 2-3 (p.55), Congressional Budget Office, The Budget and Economic Outlook: 2024 to 2034, https://www.cbo.gov/system/files/2024-02/59710-Outlook-2024.pdf?ftag=YHFa5b931b.
[24] Table 2-3 (p.37), Congressional Budget Office, An Update to the Budget and Economic Outlook:2024 to 2034, https://www.cbo.gov/publication/60419.
[25] Federal Reserve Economic Data, retrieved October 20, 2022, https://fred.stlouisfed.org/series/VIXCLS.
[26] Bureau of Economic Analysis, U.S. Department of Commerce, retrieved October 12, 2022, https://www.bea.gov/news/2022/gross-domestic-product-first-quarter-2022-advance-estimate.
[27] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, March 16, 2022, https://www.federalreserve.gov/monetarypolicy/files/monetary20220316a1.pdf.
[28] S&P Global, Markets in Motion, retrieved October 12, 2022, https://www.spglobal.com/en/research-insights/featured/inflation.

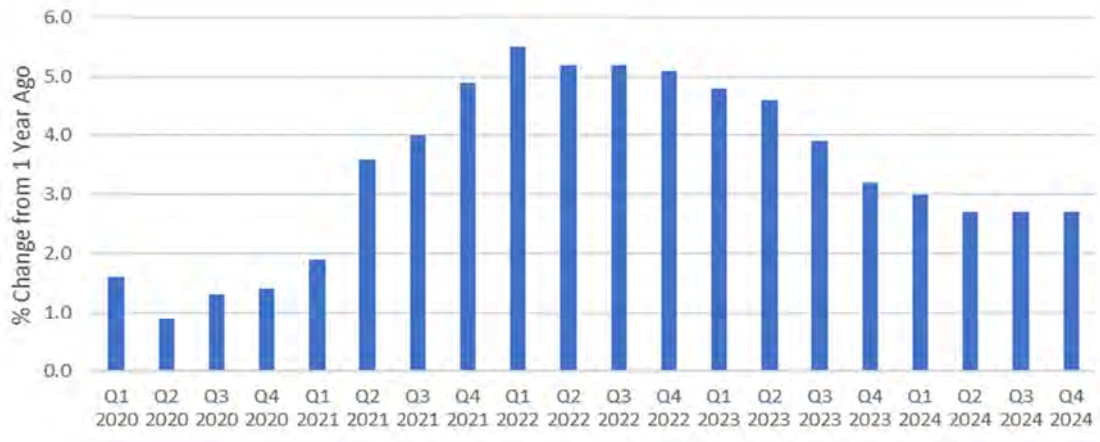
risk was particularly notable for utilities, as investors could have believed that regulators might not adjust revenues fast enough to compensate for rising input costs.

In June 2022, the consumer price index soared at an annual rate of 9.1%, a new 40-year high driven by increases in the cost of energy, mainly due to a 98% increase in fuel oil prices.[29] On June 15, 2022, the Fed stated that:

> Inflation remains elevated, reflecting supply and demand imbalances related to the pandemic, higher energy prices, and broader price pressures. The invasion of Ukraine by Russia is causing tremendous human and economic hardship. The invasion and related events are creating additional upward pressure on inflation and are weighing on global economic activity. In addition, COVID-related lockdowns in China are likely to exacerbate supply chain disruptions.[30]

The quarterly percent change from a year ago in personal consumption expenditures, excluding food and energy, is shown in Figure 2.

Figure 2. Change of Personal Consumption Expenditures[31]



[29] Bureau of Labor Statistics, Consumer Price Index News Release, published July 13, 2022, https://www.bls.gov/news.release/archives/cpi_07132022.htm.
[30] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published June 15, 2022, https://www.federalreserve.gov/newsevents/pressreleases/monetary20220615a.htm.
[31] U.S. Bureau of Economic Analysis, Personal Consumption Expenditures Excluding Food and Energy (Chain-Type Price Index) [BPCCRO1Q156NBEA], retrieved from FRED, Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org/series/BPCCRO1Q156NBEA.

The resurgence of aggregate demand in late 2021, coupled with a tight labor market and disruptions of energy supplies and in supply chains for other inputs in subsequent years, may have all contributed to the persistently elevated inflation.[32] Following the Fed's intervention in March 2022, the annual inflation rate in the U.S. fell to 2.7% in the fourth quarter of 2024, which still exceeded the Fed's target level of 2.0%.[33]

In response to rapid inflation, central banks raised interest rates.[34] The effects of the COVID-19 pandemic and high inflation fears have increased market risk. Increased market volatility, sectoral shifts in investor expectations, and changes in correlations among assets have heightened the sensitivity of utility assets' returns to overall market changes, as represented by the Beta in the CAPM framework. Consequently, this has pushed the estimate of utilities' COE higher. In other words, all else being equal, a high market risk leads to an overstated CAPM COE estimate.[35]

Furthermore, utilities often underperform the broader market during economic recovery, leading to a higher COE estimate for utilities.[36] This trend is compounded by current concerns regarding sustained inflation rates exceeding the Fed's target of 2.0%. As a result, the share prices of NGS utility equities are currently depressed, resulting in increased dividend yields and elevated COE estimates of the discount rate used in DCF analysis.[37]

[32] Gordon, Matthew V., and Todd E. Clark. 2023. "The Impacts of Supply Chain Disruptions on Inflation." Federal Reserve Bank of Cleveland, Economic Commentary 2023-08. https://doi.org/10.26509/frbc-ec-202308.
[33] FRED, Economic Data, Source: U.S. Bureau of Economic Analysis, https://fred.stlouisfed.org/series/BPCCRO1Q156NBEA.
[34] World Economic Forum, Financial and Monetary Systems, published August 16, 2022, https://www.weforum.org/agenda/2022/08/central-banks-hike-interest-rates-inflation-pressures/.
[35] The relationship between CAPM COE estimate and interest rate will be explained in the CAPM section.
[36] Morningstar, As Long as Inflation Worries Persist, We Expect Utilities to Underperform, published on July 6, 2022, https://www.morningstar.com/economy/long-inflation-worries-persist-we-expect-utilities-underperform.
[37] The relationship between DCF COE estimate and stock price will be explained in the DCF section.

Notably, the inflation rate for natural gas utility services continues to be mild. Utility NGS rates nationwide increased by an average of 4.9% year-over-year in December 2024, compared with December 2023.[38] This is a faster increase than the overall Consumer Price Index ("CPI"), which increased 2.9% year-over-year.[39] The gap between the two was 2.0%.

Q. Please explain the economic conditions over the past several years using U.S. interest rates and Fed monetary policy.

A. The Fed has a dual mandate: maximum employment and stable prices.[40] In early 2020, the emergence of the COVID-19 pandemic led to an unprecedented economic downturn, marked by widespread business closures, job losses, and financial market volatility.[41] In April 2020, the unemployment rate spiked to 14.8% from 3.5% in February 2020.[42] In response to the pandemic's adverse economic effects, which included pushing interest rates higher, the Fed intervened in March 2020 by cutting the federal discount rate to a range of 0% to 0.25%.[43] This move was part of a broader strategy by the Fed, which swiftly lowered interest rates to near zero and implemented massive stimulus measures. These measures included asset purchases and lending programs aimed at supporting the economy and

[38] Table 2, News Release, The U.S. Bureau of Labor Statistics, published November 11, 2024, https://www.bls.gov/news.release/pdf/cpi.pdf.
[39] CPI Home, The U.S. Bureau of Labor Statistics, retrieved September 18, 2024, https://www.bls.gov/cpi/.
[40] Fed, What economic goals does the Federal Reserve seek to achieve through its monetary policy? https://www.federalreserve.gov/faqs/what-economic-goals-does-federal-reserve-seek-to-achieve-through-monetary-policy.htm.
[41] BLS, Monthly Labor Review, COVID-19 ends longest employment recovery and expansion in CES history, causing unprecedented job losses in 2020, June 2021, https://www.bls.gov/opub/mlr/2021/article/covid-19-ends-longest-employment-expansion-in-ces-history.htm.
[42] Federal Reserve Economic Data, Unemployment Rate, Percent, Monthly, Seasonally Adjusted, https://fred.stlouisfed.org/series/UNRATE/.
[43] Federal Reserve, Press Release, March 15, 2020, https://www.federalreserve.gov/monetarypolicy/files/monetary20200315a1.pdf.

stabilizing financial markets.[44] Additionally, the Fed provided forward guidance, indicating that interest rates would remain low for an extended period to facilitate the recovery.[45]

As vaccination efforts progressed and economic activity resumed, the U.S. experienced a strong rebound in growth in 2021.[46] However, this recovery was accompanied by rising inflationary pressures, driven by supply chain disruptions, pent-up demand, and fiscal stimulus measures.[47] In response to concerns about inflation, the Fed began signaling plans to taper its asset purchases and eventually tighten monetary policy by raising interest rates, aiming to achieve its dual mandate of maximum employment and price stability while avoiding overheating the economy.[48]

The Fed held the federal funds rate at around zero as recently as the first quarter of 2022, despite 40-year highs in various measures of U.S. inflation.[49] Before the FOMC decided to raise the target range for the federal funds rate on March 17, 2022, it was at 0.00% to 0.25%.[50] In July 2022, the unemployment rate went back down to 3.5%. Once the Fed made the decision

[44] Fed, Monetary Policy and Central Banking in the Covid Era, published on June 3, 2021, https://www.federalreserve.gov/econres/feds/files/2021035pap.pdf.
[45] Federal Reserve Bank of Cleveland, Wesley Janson and Chengcheng Jia, Forward Guidance during the Pandemic: Has It Changed the Public's Expectations?, published on December 1, 2020, https://www.clevelandfed.org/publications/economic-commentary/2020/ec-202027-forward-guidance-during-the-pandemic.
[46] Fiori, Giuseppe, and Matteo Iacoviello (2021). "What Did we Learn from 2 billion jabs? Early Cross-Country Evidence on the Effect of COVID-19 Vaccinations on Deaths, Mobility, and Economic Activity," FEDS Notes. Washington: Board of Governors of the Federal Reserve System, published on September 01, 2021, https://doi.org/10.17016/2380-7172.2984.
[47] Ana Maria Santacreu and Jesse LaBelle (2022). "Global Supply Chain Disruptions and Inflation During the COVID-19 Pandemic," Federal Reserve Bank of St. Louis Review. https://research.stlouisfed.org/publications/review/2022/02/07/global-supply-chain-disruptions-and-inflation-during-the-covid-19-pandemic.
[48] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published on November 3, 2021, https://www.federalreserve.gov/monetarypolicy/files/monetary20211103a1.pdf.
The New York Times, Fed Officials Tamp Down Overheating Worries as Investors Fret, May 5, 2021. https://www.nytimes.com/2021/05/05/business/economy/federal-reserve-overheating-worries.html.
[49] Forbes Advisor, Federal Funds Rate History 1990 to 2023, updated Jan 26, 2024, https://www.forbes.com/advisor/investing/fed-funds-rate-history/.
[50] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published March 16, 2022, https://www.federalreserve.gov/monetarypolicy/files/monetary20220316a1.pdf.

to raise the target range for the federal funds rate, the FOMC raised the Fed funds rate by more than 5% over the course of 16 months.[51]

Table 1: Fed Rate Hikes 2022-2023[52]

FOMC Meeting Date	Rate Change (bps)	Federal Funds Rate
July 26, 2023	25	5.25% to 5.50%
May 3, 2023	25	5.00% to 5.25%
March 22, 2023	25	4.75% to 5.00%
February 1, 2023	25	4.50% to 4.75%
December 14, 2022	50	4.25% to 4.50%
November 2, 2022	75	3.75% to 4.00%
September 21, 2022	75	3.00% to 3.25%
July 27, 2022	75	2.25% to 2.50%
June 16, 2022	75	1.50% to 1.75%
May 5, 2022	50	0.75% to 1.00%
March 17, 2022	25	0.25% to 0.50%

Table 1 displays the 11 instances when the FOMC decided to raise the fed funds rate in order to tame the inflation rate. On July 31, 2024, the Fed remained attentive to the risks on both sides of its dual mandate—to achieve maximum employment and maintain inflation at a rate of 2% over the longer run—and the FOMC decided to maintain the target range for the federal funds rate at 5.25% to 5.50%.[53]

On September 18, 2024, the Fed voted to lower interest rates by a half-percentage point, opting for a bolder start in making its first reduction since 2020.[54] On November 7, 2024, and December 18, 2024, the FOMC decided to lower the target range for the federal

[51] New York Times, Fed Raises Rates Again, published on July 26, 2023, https://www.nytimes.com/live/2023/07/26/business/fed-interest-rates.
[52] Forbes Advisor, Federal Funds Rate History 1990 to 2023, updated Jan 26, 2024, https://www.forbes.com/advisor/investing/fed-funds-rate-history/.
[53] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published July 31, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20240731a1.pdf.
[54] Wall Street Journal, Fed Cuts Rates by Half Percentage Point, published September 18, 2024. https://www.wsj.com/economy/central-banking/fed-cuts-rates-by-half-percentage-point-03566d82?mod=article_inline.

funds rate by 0.25 percentage points on each occasion, resulting in a range of 4.25%–4.50%, and to continue reducing its holdings of Treasury securities, agency debt, and agency mortgage-backed securities to support maximum employment and return inflation to its 2% objective.[55]

Q. Please explain how Fed monetary policy impacts COE estimation.

A. After COVID-19, the Fed's monetary policy significantly impacted the U.S. financial market, including interest rates such as 30-Year Treasury yields that are used for the risk-free rate in CAPM. 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.[56] The difference between the two is 340 basis points. Although the Fed cut its benchmark interest rate by an unusually large half-point on September 18, 2024, and made two more quarter-point cuts on November 7, 2024, and December 18, 2024, 30-year Treasury yields were 4.98% on January 14, 2025, which is 329 basis points higher compared to 1.69% on December 3, 2021.[57] Hence, all else being equal, a high inflation rate leads to an overstated CAPM COE estimate due to the elevated interest rate determined by Fed monetary policy.[58]

2. Capital Market Condition

Q. Why is the consideration of capital market conditions important for COE analyses?

A. The capital market conditions are important for estimating COE because they directly impact input values in COE models. A utility company's cost of capital reflects its mix

[55] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published November 7, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20241107a1.pdf.
Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published December 18, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20241218a1.pdf.
[56] Federal Reserve Economic Data, Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, https://fred.stlouisfed.org/series/DGS30.
[57] Federal Reserve Economic Data, Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, https://fred.stlouisfed.org/series/DGS30.
[58] The relationship between CAPM COE estimate and interest rate will be explained in the CAPM section.

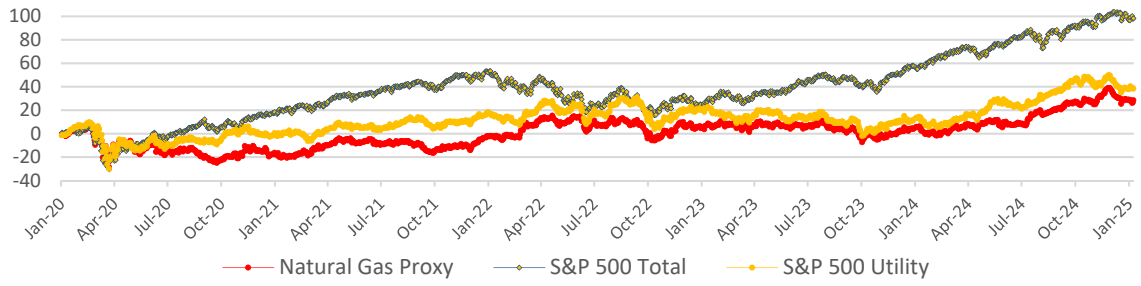
of equity and debt financing, so it is affected by the equity and debt markets. For example, equity market conditions have a direct impact on input values such as dividend yields in the DCF model, and debt market conditions directly affect the input values such as the risk-free rate of 30-Year Treasury bond yields in the CAPM method.

2.1 Utility Equity Market

Q. Please explain the current utility equity market conditions.

A. After the 2020 stock market crash caused by the COVID-19 pandemic, the utilities sector underperformed the broader market. At the onset of the economic shutdown in March 2020, the index-value of the Standard and Poor's ("S&P") 500 and the Dow Jones Industrial Average fell approximately 12.5% and 13.74%, respectively.[59] Since the beginning of the COVID-19 recovery, utilities, including natural gas utilities, have underperformed the market. This suggests that U.S. utility valuations remain relatively weak, even amid elevated inflation, rising interest rates, and global geopolitical uncertainty. Figure 3 shows the volatility experienced by the stock market since January 2020:

Figure 3. Total Return 2020-2024[60]



The total return of the NGS utility proxy group decreased from the point of reference on January 2, 2020, to an approximate loss of twenty-eight percent (-28%) by March 23, 2020.

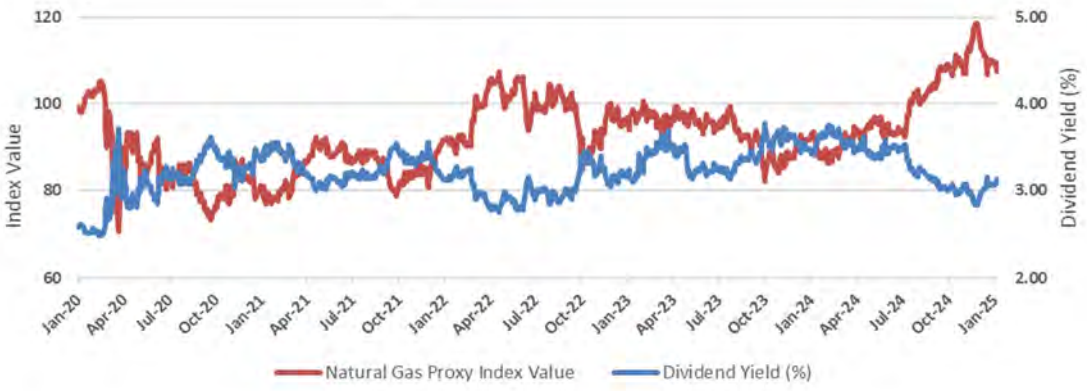
[59] S&P Capital IQ Pro.
[60] Won's Direct Workpaper.

It then rebounded to a gain of approximately twenty-eight percent (14%) by May 27, 2022, over the point of reference on January 2, 2020. A detailed analysis of the performance of the equity market since January 2020 reveals tremendous volatility. After January 2023, as shown in Figure 3, there is a clear trend indicating that the S&P 500 Utility and Staff's proxy group underperformed the S&P 500. As of December 31, 2024, the S&P 500, S&P 500 Utilities, and Staff's proxy group had total returns of 97.02%, 37.73%, and 29.06%, respectively, over the point of reference on January 2, 2020. S&P stated that the longer-term credit quality for some natural gas local distribution companies ("LDC") will become increasingly challenging, especially for utilities that operate in warmer climates or whose cities or states have banned new gas connections, severely limiting the growth of natural gas LDCs.[61]

Q. Please explain how current utility equity market conditions affect the DCF COE estimation.

A. The combined effect of the utility sector's incline in 2024 following its unusual decline in 2020 and subsequent sluggish recovery is that it has been relatively undervalued since the COVID-19 recession. As shown in Figure 3, the average stock price for Staff's NGS utility proxy group has underperformed compared to the S&P 500 Index. A lower stock price, all else remaining the same, implies a higher COE estimate in the DCF model.[62]

Figure 4. Staff NGS Proxy Index Value and Dividend Yield 2020-2024[63]



[61] S&P Capital IQ Pro, Industry Credit Outlook 2025, North America Regulated Utilities, Published January 14, 2025.
[62] The relationship between stock price and DCF COE will be explained in the section of DCF.
[63] Won's Direct Workpaper.

Before the COVID-19 pandemic, the index value of Staff's NGS utility proxy group (referred to as the 'SNGS Index') reached 105.22 on February 18, 2020. However, due to the impact of COVID-19, the U.S. stock market experienced a significant downturn, causing the SNGS Index to drop by 32% to 70.74 on March 23, 2020. After recovering from the COVID-19 shock, the SNGS Index experienced an upward trend, reaching 115.44 on September 12, 2022. Compared to the S&P 500 Index, which has enjoyed a continued bullish market, the SNGS Index experienced a sluggish downturn, reaching 82.30 on October 2, 2024. On November 27, 2024, the SNGS Index shows 118.60.[64] As shown in Figure 4, the changes in dividend yield mirror the changes in the Index value due to their reciprocal relationship. Because of the relatively higher dividend yield of Staff's NGS utility proxy group, DCF COE estimates are overstated compared to the overall market COE.

2.2 Utility Debt Market

Q. Please explain the current utility debt market conditions.

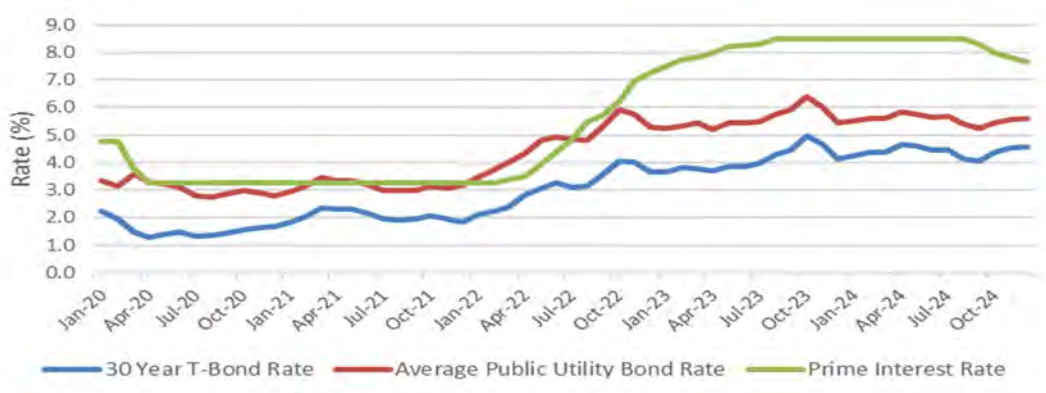
A. The utility debt market has experienced significant volatility in terms of bond yield changes. Average public utility bond yields decreased from 4.48% in January 2019 to 2.76% in August 2020.[65] However, this downward trend in public utility bond yields reversed after the Fed initiated its Treasury bond-buying activity.[66] Between March 2022 and July 2023, the Fed raised the target range for the federal funds rate 525 basis points to its current level between 5.25% and 5.50% after being maintained between 0.00% and 0.25% for the prior

[64] S&P Capital IQ Pro.
[65] Schedule SJW-d4-1, Won's Direct Testimony.
[66] Brookings, The Hutchins Center Explains, https://www.brookings.edu/research/fed-response-to-covid19/.

two years.[67] Consequently, public utility bond yields increased by 362 basis points to 6.38% in October 2023 compared to the 2.76% yield in August 2020.[68]

As shown in Figure 5, the changes in public utility bond yields closely mirrored the fluctuations in 30-Year Treasury bond yields. Historically, with a few exceptions, 30-Year Treasury bond yields have exhibited a positive correlation with public utility bond yields. In the past two years, the primary driver of interest rates has been the concern over sustained higher inflation. The Fed has explicitly stated that the FOMC is strongly committed to returning inflation to its 2.0% target. Consequently, it intends to maintain the current level of the federal fund rate until achieving the desired inflation rate.[69]

Figure 5. 30-Year Treasury Bond, Public Utility Bond and Fed Fund[70]



Q. Is there a correlation between utility debt yields and stock prices?

A. Yes, there can be a correlation between utility debt yields and stock prices, although it is not always direct or consistent. Generally, when utility debt yields rise, it could indicate increased perceived risk or a higher cost of borrowing for the utility company.

[67] Forbes Advisor, Federal Funds Rate History 1990 to 2023, updated Jan 26, 2024, https://www.forbes.com/advisor/investing/fed-funds-rate-history/.
[68] Schedule SJW-d4-1, Won's Direct Testimony.
[69] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published September 18, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20240918a1.pdf.
[70] Won's Direct Workpaper.

This could lead to a decrease in stock prices due to concerns about the company's financial health or profitability. Inversely, when utility debt yields fall, it may signal lower perceived risk or cheaper borrowing costs, which could lead to higher stock prices as investors become more optimistic about the company's prospects. Although utilities' COEs are not perfectly correlated to changes in utility debt yields, it is widely recognized in the investment community that regulated utility stocks are a close alternative to bond investments. In general, as interest rates increase, utility stock prices decrease, pushing COE up as investors substitute stocks with bonds in search of higher yields.[71]

Q. Please explain how the current utility debt market conditions affect COE estimation.

A. In the past, interest rates were typically one of the main drivers of COE changes. Higher interest rates would normally mean higher COEs, all other things being equal. Currently, we observe higher COEs due to historically high interest rates in recent decades. The combined net result of the rise in interest rates and changes in overall market conditions is an increase in COE. Staff's COE estimates for the natural gas proxy group have also increased. The current COE, as estimated by the DCF and CAPM methods, is overstated when considering utility bond market conditions. Therefore, Staff is cautious about using COE estimates from DCF and CAPM to recommend a specific authorized ROE in this proceeding, as demonstrated later in this testimony.

[71] Forbes Advisor, How To Invest When Interest Rates Are Low, Updated: Apr 15, 2022 and retrieved October 20, 2022, https://www.forbes.com/advisor/investing/low-interest-rates/#:~:text=While%20bond%20prices%20are%20directly%20affected%20by%20interest,mean%20companies%20may%20borrow%20less%20to%20fund%20growth.

IV. CORPORATE ANALYSIS

Q. Why is corporate analysis important for rate of return analysis?

A. According to the regulatory principle of return consistent with returns on investments of comparable risk, the regulatory agency should ensure that the authorized ROE should provide investors with returns that align with those available from investments with similar levels of risk. Corporate analysis helps in identifying and evaluating various risks such as financial risk, operational risk, and business risk. By understanding these risks, the Commission can make an informed decision about determining a just and reasonable ROR for Ameren Missouri, considering the commensurate risk of the NGS utility industry. Therefore, to recommend the proper rate-making capital structure and cost of capital in this proceeding, it is essential to understand the corporate structure, cost framework, financial quality, risk profile, and market performance of Ameren Corp. and Ameren Missouri through corporate analysis.

Q. Why is corporate analysis necessary for both Ameren Corp. and Ameren Missouri?

A. Understanding the relationship between the parent company and its subsidiaries is crucial for properly assessing the risks faced by the operating subsidiary. This includes considering the consolidated risk of the parent company and its other subsidiaries. By conducting corporate analysis, one can gain insights into the interconnectedness of various entities within the corporate structure and the potential impact of their actions on each other.

In the utility ratemaking process, if only the stand-alone risk of the operating subsidiary is considered, the determination of return may not accurately reflect the actual risk faced by the utility. Since the financial and business risks of an operating subsidiary are not stand-alone in

the real world, overlooking the broader corporate context could lead to the mispricing of risk and inadequate returns.

Major rating agencies consider the risks of the parent company and its other subsidiaries when determining the credit rating of a subsidiary.[72] Thus, to fully understand the risk profile and creditworthiness of Ameren Corp. and Ameren Missouri, it is essential to analyze not only their individual financial and business profiles but also their positions within the broader corporate framework.

For instance, S&P lowered its issuer credit ratings one notch on Evergy Inc. and its subsidiaries, including Evergy Missouri West, Inc. on November 29, 2023, after the Kansas Corporation Commission ("KCC") adopted a settlement in the rate cases of Evergy Inc.'s Kansas subsidiaries, Evergy Kansas Central Inc. and Evergy Metro Inc., on November 21, 2023.[73] This serves as a compelling example of how a stand-alone approach can be naive and underscores the importance of considering the risks of the parent company and its other subsidiaries when assessing the risk of an operating subsidiary.

Q. Please provide the corporate profile of Ameren Corp.

A. According to its 10-K reported to the SEC and S&P Company Description, Ameren Corp. operates as a public utility holding company whose primary assets are its equity interests in its subsidiaries. Ameren Corp.'s principal subsidiaries are Ameren Missouri, Ameren Illinois Electric Distribution, Ameren Illinois Natural Gas, and Ameren Transmission. The Ameren Missouri segment includes all of the operations of Ameren Missouri. Ameren Illinois Electric Distribution consists of the electric distribution business of Ameren Illinois.

[72] S&P RatingDirect, How We Rate Non-Financial Corporate Entities, February 19, 2021.
[73] S&P Global Ratings, Evergy Inc. And Subsidiaries Downgraded By One Notch On Weakening Financials; Outlook Revised To Stable, Published November 29, 2023.

Ameren Illinois Natural Gas consists of the natural gas business of Ameren Illinois. Ameren Transmission primarily consists of the aggregated electric transmission businesses of Ameren Illinois and Ameren Transmission Company of Illinois ("ATXI"). ATXI operates a FERC rate-regulated electric transmission business in the MISO.

Ameren Corp. owns an integrated transmission system that is composed of the transmission assets of Ameren Missouri, Ameren Illinois, and ATXI. Ameren also operates two MISO balancing authority areas: AMMO and AMIL.[74] The AMMO balancing authority area includes the load and most energy centers of Ameren Missouri, and had a peak demand of 7,836 MWs in 2023. The AMIL balancing authority area includes the load of Ameren Illinois and certain natural gas-fired energy centers of Ameren Missouri, and had a peak demand of 8,859 MWs in 2023. The Ameren transmission system directly connects with 15 other balancing authority areas for the exchange of electric energy. Ameren Missouri sells nearly all of its capacity to the MISO and purchases the capacity it needs to supply its native load sales from the MISO. In the April 2023 MISO capacity auction, Ameren Missouri's generation resources exceeded its native load capacity requirements for the June 2023 through May 2024 period.

Q. Please provide the corporate profile of Ameren Missouri.

A. According to its 10-K reported to the SEC and other company descriptions, including S&P reports, Ameren Missouri operates a rate-regulated electric generation, transmission, and distribution business; and a rate-regulated natural gas distribution business in Missouri. Ameren Missouri is a subsidiary of Ameren Corp. Ameren Missouri supplies

[74] MISO Allocation Factors: State Level and MISO Local Resource Zone. https://www.purdue.edu/discoverypark/sufg/docs/publications/2014%20July%20Workshop%20-%20LRZ%20Allocation%20Factors.pdf.

electric and natural gas service to a 24,000-square-mile area in central and eastern Missouri, including the Greater St. Louis area. Ameren Missouri supplies electric service to 1.2 million customers and natural gas service to 135,000 customers. Ameren Missouri is a transmission-owning member of the Midcontinent Independent System Operator, Inc. ("MISO"). Ameren Missouri's electric supply is primarily generated from its energy centers. Founded in 1902, Union Electric Company, doing business as Ameren Missouri, is the state's largest electric utility.[75] Union Electric, which had been doing business as AmerenUE, began doing business as Ameren Missouri on October 1, 2010.

Q. Please provide Ameren Missouri's corporate profile regarding its natural gas supply for distribution.

A. According to its 10-K filed with the SEC and other company descriptions, including S&P reports, Ameren Missouri is the second-largest distributor of natural gas in Missouri. Ameren Missouri provides natural gas service to approximately 135,000 customers across more than 90 communities, including towns in southeast, central, and eastern Missouri. Ameren Missouri oversees nearly 5,000 miles of natural gas pipelines, including service lines.

Ameren Missouri is responsible for purchasing and delivering natural gas to its customers. Ameren Missouri develops and manages a portfolio of natural gas supply resources, including firm natural gas supply agreements with producers, firm interstate and intrastate transportation capacity, firm no-notice storage capacity leased from interstate pipelines, and on-system storage facilities. These resources ensure natural gas deliveries to customers throughout the year, especially during peak demand periods.

[75] Ameren Missouri Facts, Ameren Official Website, retrieved January 18, 2025. https://www.ameren.com/-/media/missouri-site/files/aboutus/amerenmissourifactsheet.ashx.

Ameren Missouri primarily uses Panhandle Eastern Pipe Line Company, Trunkline Gas Company, Natural Gas Pipeline Company of America, Mississippi River Transmission Corporation, Northern Border Pipeline Company, and Texas Eastern Transmission Corporation interstate pipeline systems to transport natural gas to their systems.

Ameren Missouri's natural gas rates may be adjusted without a traditional rate proceeding for changes in the wholesale costs of natural gas, which are passed through to customers without markup from Ameren Missouri. These adjusted mechanisms are the Purchased Gas Adjustment ("PGA"), the Infrastructure System Replacement Surcharge ("ISRS") and the Weather Normalization Adjustment Rider ("WNAR").

Q. What are the business and financial risk profiles of the natural gas distribution service of Ameren Missouri?

A. According to its 10-K filed with the SEC and other company descriptions, including S&P reports, Ameren Missouri develops and manages a portfolio of natural gas supply resources. These resources include firm natural gas supply agreements with producers, firm interstate and intrastate transportation capacity, firm no-notice storage capacity leased from interstate pipelines, and on-system storage facilities to maintain natural gas deliveries to customers throughout the year and especially during peak demand periods. In addition to transactions requiring physical delivery, certain financial instruments, including those entered into in the New York Mercantile Exchange futures market and in the over-the-counter financial markets, are used to hedge the price paid for natural gas. The natural gas delivery service accounts for less than 4% of Ameren Missouri's operating revenue and

less than 10% of its rate base.[76] 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.[77] From a financial standpoint, the entirety of Ameren Missouri's operations function as one entity.[78] In other words, the natural gas distribution service is not independent of Ameren Missouri in terms of its financial risk profile.

Q. What are the business and financial risk profiles of Ameren Missouri and Ameren Corp?

A. According to S&P, both Ameren Missouri and Ameren Corp. are showing an excellent business risk profile based on their regulated utility services. Ameren Missouri and Ameren Corp. demonstrate financial risk that is approximately at the midpoint of the benchmark range. The stable outlook on Ameren Missouri reflects that of parent Ameren Corp.'s consolidated S&P's adjusted funds from operations ("FFO") to debt will remain between 16%-17% through 2026.[79] Capital spending at Ameren Missouri accounts for about 60% of parent Ameren Corp.'s 2024-2028 capital spending plan. Ameren Corp. plans on funding its spending in a balanced manner, including equity issuances of $300 million in 2024 and $600 million per year for the 2025-2028 period.[80]

Q. What is the credit rating for Ameren Corp. and Ameren Missouri?

A. Ameren Corp. and Ameren Missouri are currently rated by Moody's and S&P. Moody's assigned a 'Baa1' rating for the most recent long-term issuer of Ameren Corp. and

[76] SEC Form 10-K, Ameren Missouri, filed February 29, 2025.
[77] Staff's Data Request No. 0136.
[78] Staff's Data Request No. 0137.
[79] S&P Global Ratings, Union Electric Co. d/b/a Ameren Missouri, Published March 20, 2024.
[80] S&P Global Ratings, Ameren Corp., Published March 20, 2024.

Ameren Missouri.[81] S&P assigned its issuer credit ratings on Ameren Corp and Ameren Missouri to 'BBB+' with ‘stable’ credit watch outlook.[82]

Q. What is the implication of credit ratings to Ameren Corp. and Ameren Missouri for their estimated COE and authorized ROE?

A. The natural gas utilities have average bond ratings of ‘Baa1’ and ‘BBB+’ provided by Moody’s and S&P, respectively.[83] The overall agency ratings of Ameren Corp. and Ameren Missouri are comparable to those of the average natural gas utilities in the U.S.[84] This means Ameren Corp. and Ameren Missouri are perceived to have similar credit risks as the average natural gas utilities in the U.S. Considering the fundamental financial principle that similar risks demand similar returns, investors expect a similar cost of equity for a company with a comparable credit rating.[85] This comparison of credit ratings suggests that Ameren Missouri's authorized ROE should fall within a reasonable range compared to the average authorized ROE of NGS utility companies in the U.S.

continued on next page

[81] According to S&P Capital IQ Pro, the most recent dates for the long-term issuer ratings of Ameren Corp and Ameren Missouri are March 28, 2019.
[82] S&P Global Ratings, Ameren Corp. and Union Electric, Published March 20, 2024.
[83] S&P Capital IQ Pro.
[84] Schedule SJW-d8, Won’s Direct Testimony.
[85] Arditti, F. D. (1967). Risk and the required return on equity. The Journal of Finance, 22(1), 19-36.

V. CAPITAL STRUCTURE

Q. Why is the ratemaking capital structure important for this rate proceeding?

A. Because it directly impacts the determination of a fair and reasonable ROR that Ameren Missouri's NGS can charge its ratepayers, the ratemaking capital structure is crucial for this rate proceeding. Here are more detailed reasons why it is important.

First, the capital structure is a key component in calculating Ameren Missouri's overall cost of capital, which is the allowed ROR required by investors (both debt and equity holders) of Ameren Missouri. This cost of capital is used in the rate-setting process to determine the allowed return on investment, which Ameren Missouri needs to recover through tariff rates.

Second, the ratemaking capital structure should appropriately reflect Ameren Missouri's actual financial risk by accounting for the proportion of debt and equity used to finance its operations. A structure that accurately represents this risk ensures that the rates set will appropriately cover Ameren Missouri's cost of capital, aligning with the risk profile faced by Ameren Missouri.

Third, a well-considered capital structure helps ensure that Ameren Missouri remains financially stable. If the rates reflect the actual cost of capital, Ameren Missouri will have sufficient revenue to meet its financial obligations, maintain its creditworthiness, and invest in necessary infrastructure and services.

To sum up, the ratemaking capital structure is a foundational element in this rate proceeding because it directly affects the financial health of Ameren Missouri and its NGS, the fairness of the rates charged to its customers, and the overall regulatory stability of the process.

Q. What issues did Staff consider to determine its ratemaking capital structure for Ameren Missouri?

A. Ameren Missouri's NGS ratemaking capital structure should be representative of its risk profile, considering its financing components such as common equity, preferred stock, long-term debt, and short-term debt. Staff considered three major issues in determining the capital structure for Ameren Missouri.

First, which capital structure should be used for ratemaking in this proceeding: the parent company Ameren Corp.'s consolidated capital structure or Ameren Missouri's standalone capital structure, or the operating NGS division's capital structure? Second, which capital structure should be used for ratemaking in this proceeding: actual capital structure, hypothetical capital structure, or projected capital structure? Third, what amount of short-term debt, if any, should be included in the ratemaking capital structure?

To provide a proper recommendation on these issues, Staff reviewed the financial relationship among Ameren Corp., Ameren Missouri, and the NGS division, assessed which capital structure most appropriately reflects the new rates, and examined how Ameren Missouri's short-term debt was utilized. For regulatory consistency, Staff also reviewed the Commission's previous decisions on these issues in Ameren Missouri rate proceedings.

Q. Please explain the Commission's past decisions regarding capital structures used for the purpose of ratemaking.

A. Over the past five years, there have been three fully-litigated rate cases: The Empire District Electric Company ("Empire") rate proceeding, Case No. ER-2019-0374 (the "2019 Empire Case"), the 2021 Spire Missouri Inc. ("Spire Missouri") rate proceeding,

Case No. GR-2021-0108 (the "2021 Spire Case"), and the Confluence Rivers Utility Operating Company, Inc. ("Confluence Rivers") rate proceeding, Case No. WR-2023-0006 (the "2023 Confluence Case").

In the 2019 Empire Case, the Commission concluded that the adjusted actual capital structure (46% common equity and 54% long-term debt) of Empire's parent company, Liberty Utilities Co. ("LUCo"), is appropriate for setting rates in this case because it is more economical than Empire's, based on the finding that it is appropriate to utilize Empire's consolidated capital structure, including LUCo's off-balance sheet debt.[86]

In the 2021 Spire Case, the Commission ordered that Spire Missouri's standalone actual capital structure (49.86% common equity, 41.99% long-term debt and 8.16% short-term debt) be used for the purpose of ratemaking.[87] Regarding the issue of short-term debt in its capital structure, the Commission's decision in the 2021 Spire Case was that the average short-term debt in excess of short-term assets over the 13-month period, excluding both short-term assets and short-term debt related to Winter Storm Uri, should be included in the rate making capital structure.[88]

In the 2023 Confluence Case, the Commission found that a hypothetical capital structure of 50% equity and 50% debt is appropriate in this case, reasoning that ratepayers would benefit from having rates calculated with a 50% debt ratio, as debt is a cheaper cost than equity, while shareholders would benefit from rates calculated with a 50% equity ratio, as equity generates a greater return than debt, so a 50/50 capital structure in this case will produce just and reasonable rates.[89]

[86] On page 38-39, *Amended Report and Order* issued July 23, 2020, in Case No. ER-2019-0374.
[87] Accounting Schedule:12, *Staff Accounting Schedules*, December 13, 2021, in Case No. GR-2021-0108.
[88] On page 96, *Amended Report and Order* issued November 12, 2021, in Case No. GR-2021-0108.
[89] On page 46, *Report and Order* issued October 25, 2023, in Case No. WR-2023-0006.

Q. Do you think there are inconsistencies in the Commission's decision on the capital structure issue?

A. No, I do not. The Commission's decision on the capital structure issue for each rate proceeding based on principles established in the *Bluefield* and *Hope* decisions. In addition, for each rate proceeding, the Commission considered the unique characteristics of equity and debt financing of the associated company in relation to specific issues regarding ratemaking capital structure.

In the 2019 Empire Case, Condition 5 of the Merger Stipulation approved in File No. EM-2016-0213 required Empire to provide evidence in its rate cases as to why its per-book capital structure is the most economical for determining a fair and reasonable allowed rate of return.[90] The Commission found that LUCo's adjusted capital structure is appropriate to use for setting rates in this case because it is more economical than Empire's.[91]

In the 2021 Spire Case, the Commission ordered that the ratemaking capital structure should be determined based on Spire Missouri's actual standalone capital structure of common equity and long-term debt as of May 31, 2021, and the average short-term debt in excess of short-term assets over the 13-month period ending May 31, 2021, excluding both short-term assets and short-term debt related to Winter Storm Uri during March, April, and May 2021.[92] In this decision, the Commission recognized that the Society of Utility and Regulatory Financial Analysts ("SURFA") lists four guidelines for determining when to use a parent company's capital structure in its guidebook, *Cost of Capital – A Practitioner's Guide*.[93]

[90] On page 22, *Order Approving Stipulations and Agreements and Authorizing Merger Transaction issued* September 7, 2016, EM-2016-0213.
[91] On page 39, *Amended Report and Order* issued July 23, 2020, in Case No. ER-2019-0374.
[92] On page 96, *Amended Report and Order* issued November 12, 2021, in Case No. GR-2021-0108.
[93] Paragraph 273, *Amended Report and Order* issued November 12, 2021, in Case No. GR-2021-0108.

In the 2023 Confluence Case, the Commission found that a hypothetical capital structure was appropriate for ratemaking due to Confluence Rivers' large negative retained earnings balance of approximately $9.5 million at year-end 2022, and its unique corporate structure, which relies directly on affiliates for external capital structure and Confluence Rivers' size.[94]

Q. What was the Staff's recommended ratemaking capital structure for the NGS of Ameren Missouri in their most recent past rate case?

A. In Ameren Missouri's most recent rate case, Case No. GR-2021-0241, Staff recommended Ameren Missouri's actual standalone capital structure as of June 3, 2021, which consisted of 50.32% common equity, 0.75% preferred stock, and 48.93% long-term debt.[95]

Q. Have there been any significant changes in Ameren Missouri's capital structure that should alter Staff's recommendation of using Ameren Missouri's targeted stand-alone capital structure for the purpose of ratemaking?

A. There have not been any discernible changes to Ameren Missouri's or Ameren Corp.'s capital structure policies since the last rate case to cause Staff to change its recommendation.

Q. Please explain the financial relationship between Ameren Corp. and Ameren Missouri regarding capital structure for the purpose of ratemaking in this proceeding.

A. Ameren Missouri operates as an independent entity when considering Ameren Missouri's procurement of financing and the cost of that financing. Ameren Corp. is not the primary source of long-term financing for Ameren Missouri and this continues to be the case.[96]

[94] On page 45-46, *Report and Order* issued October 25, 2023, in Case No. WR-2023-0006.
[95] On page 49, lines 3-5, Won's Surrebuttal / True-Up Rebuttal Testimony, Case No. GR-2021-0241.
[96] Staff's Data Request No. 0113.

Since January 2022, Ameren Missouri has not received long-term financing from Ameren Corp. or other Ameren Corp. subsidiaries.[97]

Ameren Missouri is an operating subsidiary of Ameren Corp. and has separate credit ratings issued by Moody's and S&P.[98] Ameren Missouri's stand-alone capital structure supports its own credit rating.[99] The debt is rated by credit rating agencies based on the stand-alone credit quality of Ameren Missouri.[100] Therefore, the cost of any debt that Ameren Missouri has will be based on Ameren Missouri's creditworthiness. The corporate credit ratings assigned by Moody's and S&P to both Ameren Missouri and Ameren Corp. are 'Baa1' and 'BBB+', respectively.[101]

Ameren Corp. provides all equity and no debt financing to Ameren Missouri.[102] Ameren Corp. assets do not secure Ameren Missouri debt and Ameren Missouri assets do not secure Ameren Corp. debts.[103] Ameren Missouri receives or provides short-term advances from or to Ameren Corp. through its regulated money-pool.[104] The management members of Ameren Corp. are included as part of the ultimate financial decision makers for Ameren Missouri.[105] These financial relationships between Ameren Corp. and Ameren Missouri are normal in the utilities sector.

Ameren Corp. has raised significant equity capital in recent years to support higher capital expenditures at Ameren Missouri, including any necessary equity contribution into the

[97] No.1, Staff's Data Request No. 0130.
[98] S&P Capital IQ Pro.
[99] No.4, Staff's Data Request No. 0130.
[100] Rating Direct, S&P Capital IQ.
[101] S&P Capital IQ Pro.
[102] No.1, Staff's Data Request No. 0130.
[103] No.6, Staff's Data Request No. 0130.
[104] No.3, Staff's Data Request No. 0130.
[105] No.7, Staff's Data Request No. 0130.

utility, but no proceeds from Ameren Corp. long-term debt issuances have been used to infuse equity into Ameren Missouri.[106] Therefore, Staff does not find evidence that Ameren Corp. has used "double leverage" for investing in Ameren Missouri.[107]

In addition, Ameren Corp.'s non-utility assets are around 1.3% of its total assets.[108] hence, there are no significant concerns about the financial relationship between Ameren Missouri's regulated utility service and Ameren Corp.'s non-regulated business.

Q. Please explain the financial relationship between Ameren Missouri and the NGS division regarding capital structure for the purpose of ratemaking in this proceeding.

A. According to Ameren Missouri's responses to Staff's data requests, the NGS division is financially dependent on Ameren Missouri. Mr. Darryl T. Sagel, Ameren Missouri's vice president and treasurer, stated, "From a financial standpoint, the entirety of Ameren Missouri's operations function as one entity."[109] According to Mr. Sagel, "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."[110]

Q. What are the components of capital structure commonly considered for the purpose of ratemaking in general rate proceedings?

A. In general, a ratemaking capital structure could be a mixture of debt and equity including some or all of the following components: common stock, preferred stock,

[106] Staff's Data Request No. 0133.
[107] Double leverage occurs when a holding company conducts a debt offering to acquire a large equity stake in a subsidiary. Financial authorities have frequently raised concerns about the issue of double leverage because of this type of intra-firm financing.
[108] No. 8, Staff's Data Request No. 0130.
[109] Staff's Data Request No. 0137.
[110] Staff's Data Request No. 0136.

long-term debt, and short-term debt. For short-term debt, the portion of short-term debt that supports long-term capital may be included in the capital structure. In other words, the amount of short-term debt exceeding the amount to support short-term assets and construction work in progress ("CWIP"), may be considered a capital structure component.

Q. What was the Commission's decision on short-term debt for the ratemaking capital structure in previous rate cases?

A. In Spire East and Spire West's rate cases, Case Nos. GR-2017-0215 and GR-2017-0216, the Commission determined that short-term debt should not be included in Spire Missouri's ratemaking capital structures when the average level of CWIP and other short-term assets exceeds the amount of short-term debt.[111] In 2021 Spire Case, the Commission determined that an appropriate amount of short-term debt should be included in Spire Missouri's ratemaking capital structure because Spire Missouri was using some short-term debt to finance long-term assets.[112]

Q. What is the average amount of Ameren Missouri short-term debt used to finance its long-term assets for a reasonable time-period?

A. Ending June 30, 2024, the 12-month average amount of Ameren Missouri's projected short-term debt and CWIP are approximately $266 million and $1,060 million, respectively.[113] The short-term debt in the Ameren Missouri ratemaking capital structure is 0%. Staff will continue monitoring Ameren Missouri's short-term debt levels through the remainder of this proceeding and, if appropriate, will state any change in position on this capital structure issue no later than Staff's true-up direct testimony.

[111] On pages 44-45, *Amended Report and Order* issued March 7, 2018, in Case Nos. GR-2017-0215 and GR-2017-0216.
[112] On page 97, *Amended Report and Order* issued November 12, 2021, in Case No. GR-2021-0108.
[113] Staff's Data Request No. 0106.

Q. Has Ameren Missouri and Ameren Corp. indicated to Staff that they would target specific capital structures in the future for Ameren Missouri and Ameren Corp.?

A. Ameren Missouri's response to Staff's Data Request No. 0117 says Ameren Missouri and Ameren Corp. have neither internally identified nor externally communicated a targeted capital structure.[114] According to its witness, "Ameren Missouri specifically and continuously maintains the balance of debt and equity in its capital structure to minimize its overall cost of capital and, at the same time, maintain financial strength and stability."[115]

Q. What is the actual capital structure of Ameren Missouri and Ameren Corp.?

A. The capital structure as of September 30, 2024 for Ameren Missouri is approximately 52.91% common equity, 0.56% preferred stock, and 46.53% long-term debt.[116] Table 2 below shows the average capital structures of Ameren Corp. and Ameren Missouri for Q4 2024 through Q3 2024.[117] As seen in Table 2, the average equity ratios for Q4 2023 through Q3 2024 were approximately 51.82% and 40.94% for Ameren Missouri and Ameren Corp., respectively:[118]

Table 2: Comparison Average Capital Structure Q4 2023 – Q3 2024

	Ameren Corp.	Ameren Missouri
Common Equity	40.94%	51.82%
Preferred Stock	0.46%	0.59%
Long-Term Debt	58.60%	47.60%
	100.00%	100.00%

[114] Staff's Data Request No. 0117.
[115] Page 6, lines 10-12, Sagel's Direct Testimony.
[116] Schedule SJW-d6, Won's Direct Testimony.
[117] Staff's Data Request No. 0112 (Supplementary response to Staff Data Request No. 0107, ER-2024-0319)
[118] Schedule SJW-d5-2, Won's Direct Testimony.

Q. What is Staff's recommended ratemaking capital structure in this proceeding?

A. Considering Ameren Missouri's financial relationship with the NGS division of Ameren Missouri and Ameren Corp., and to maintain consistency with the Commission's previous ratemaking decisions, Staff recommends that the Commission set Ameren Missouri's ROR based on its most recent actual standalone capital structure. The ratemaking capital structure Staff used for its analysis in this case is Ameren Missouri's stand-alone capital structure composed of 52.91% common equity, 0.56% preferred stock, and 46.53%, long-term debt, based on Ameren Missouri's actual capital structure as of September 30, 2024.[119] Schedules SJW-d5-1 and SJW-d5-2 to this testimony, and incorporated by reference herein, presents Ameren Corp. and Ameren Missouri's historical capital structures and the associated capital ratios. Staff will keep monitoring Ameren Corp. and Ameren Missouri's updated capital structures through the end of the true-up period, through December 31, 2024, and will update its final recommendation to actual values at that time.

continued on next page

[119] Staff's Data Request No 0112.

VI. RATE OF RETURN

Q. Please summarize the procedure that Staff used in its ROR analysis.

A. In order to arrive at Staff's recommended ROR, Staff calculated the weighted average cost of capital of Ameren Missouri's NGS by investigating the cost of each capital component of its ratemaking capital structure. Staff specifically examined: (1) the estimated COEs using DCF and CAPM for the selected NGS companies in the proxy group; (2) the authorized ROE estimated by the BYPRP method; (3) the recent national average authorized ROEs for natural gas utilities; (4) Staff's recommended ROE for the current Ameren Missouri rate case; (5) the current embedded cost of debt; and (6) the allowed ROR for the purpose of ratemaking in this proceeding. For this procedure, Staff started with the selection of a natural gas proxy group.

1. Proxy Group

Q. How did you select the NGS proxy group for Staff's ROR analysis?

A. Staff used a proxy group consisting of U.S. utilities that that Value Line classifies as natural gas utilities.[120] Staff screened five (5) companies for the following criterions:

- stock publicly traded;
- more than five years of financial data available;
- investment grade credit ratings from major U.S. credit rating agencies;
- positive long-term growth coverage from at least two analysts;
- no pending merger or acquisitions;
- not reduced dividends since 2015;
- at least 70% of income from regulated utility operations; and
- at least 65% of assets in regulated utility operations.

[120] Value Line, https://research.valueline.com/secure/dashboard.

Q. What is Staff's natural gas proxy group for its ROR analysis?

A. The five (5) natural gas utilities that met these criterions are in Table 3 below:

Table 3: Natural Gas Proxy Group

Natural Gas Companies	Ticker
Atmos Energy Corporation	ATO
Northwest Natural Holding Company	NWN
ONE Gas, Inc.	OGS
Southwest Gas Holdings, Inc.	SWX
Spire Inc.	SR

The detailed screening procedure and results, utilizing the above criteria, are presented in Schedules SJW-d8 and SJW-d9.

2. Cost of Common Equity

Q. Please explain how Staff conducted its COE estimation.

A. Staff conducted its COE estimation for Ameren Missouri by examining the market data of the fourth quarter of 2024 ("Q4 2024") using the proxy group of NGS utility companies as shown in Table 3.[121] The analysis Staff used to estimate Ameren Missouri's COE consisted of Staff's DCF COE and CAPM COE analyses. These two analyses are widely accepted in the financial industry as a means to determine a fair and reasonable rate of return for regulated utility companies.[122] Staff agrees with the FERC that conducting the COE analysis using DCF and CAPM is the most appropriate method for generating a composite zone of reasonableness to determine the recommended ROE to be presented to the Commission for

[121] The test year for this case ends on March 31, 2024, with updates through June 30, 2024.
[122] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569, 169 FERC ¶ 61,129 (2019).

Ameren Missouri.[123] Staff used the result of a BYPRP method to recommend an authorized ROE comparable to the reasonable range of COEs for the proxy group, as determined through its DCF and CAPM analyses.

Q. Please explain the DCF model used for Staff's COE estimation.

A. The DCF model used for Staff's COE estimation is a widely used model by investors to evaluate stable-growth investment opportunities, such as regulated utility companies. The premise of the DCF model is that an investment in common stock is worth the present value of the infinite stream of dividends discounted at a market rate commensurate with the investment's risk. Using the following formula for the DCF model, investors determine a common stock price:

$$P = D/(k - g),$$

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

The common stock prices of Staff's proxy group in Q4 2024 are presented in Schedule SJW-d12. Staff uses an adjusted dividend yield $(1 + 0.5g)D$ to account for the fact that the dividends are paid on a quarterly basis.[124] For the growth rate, Staff used the average of analysts' projected earnings per share ("EPS"), dividends per share ("DPS"), and book value per share ("BVPS") and the projected nominal GDP growth rate.[125] The average projective

[123] Ass'n of Businesses Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc., Opinion No. 569-A, 171 FERC ¶ 61,154 (2020) ("Opinion 569-A").
[124] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569, 169 FERC ¶ 61,129 (2019).
[125] *Entergy Arkansas, Inc*., Opinion No. 575, 175 FERC ¶ 61,136 (2021).

growth rate in Q4 2024 for Staff's proxy group is 5.23%.[126] The average long-term sustainable growth rate for the DCF model is 4.97% with the projected nominal GDP growth rate of 3.90%.[127]

It is important that the growth rate used in Staff's constant-growth DCF model reflects the long-term investment horizon assumption implied in the constant-growth DCF model. FERC also agreed as much when it ruled, in Opinion 569, that the exclusive use of analysts' short-term growth rates in the constant-growth DCF was inappropriate.[128] The detailed procedure of the growth rate calculation for Staff's DCF model is presented in Schedule SJW-d12.

The formulation of the COE using the constant-growth DCF formula is:

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

Q. What is the result of the COE estimation using the DCF model?

A. For the current rate case, Staff's DCF estimation of the COE for NGS utility companies in its proxy group ranges from 7.66% to 9.70%, with an average DCF COE estimate of 8.68%, based on the proxy group of NGS utility companies presented in Table 3.[129] The detailed calculation procedure of Staff's DCF analysis is presented in Schedule SJW-d12.

Q. Please explain the CAPM used for Staff's COE estimation.

A. The CAPM used for Staff's COE estimation is another widely used financial model that describes the relationship between risk and expected return. According to CAPM, the expected return on an investment is determined by the risk-free rate of return (typically the

[126] Schedule SJW-d10, Won's Direct Testimony.
[127] Table 2-3 (p.37), Congress Budget Office (CBO), Budget Economic Outlook, Published June 2024.
[128] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569, 169 FERC ¶ 61,129 (2019).
[129] Schedule SJW-d12, Won's Direct Testimony.

yield on government bonds) and a risk premium that reflects the riskiness of the investment compared to the overall market. The CAPM is built on the premise that the variance in returns over time is the appropriate measure of risk, but only the non-diversifiable variance (systematic risk) is rewarded. Systematic risks, also called market risks, are unanticipated events that affect almost all assets to some degree because the effects are economy wide. Systematic risk in an asset, relative to the average, is measured by the beta of that asset.[130] Unsystematic risks, also called asset-specific risks, are unanticipated events that affect single assets or small groups of assets. Because unsystematic risks can be freely eliminated by diversification, the appropriate reward for bearing risk depends on the level of systematic risk.

The CAPM shows that the expected return for a particular asset depends on the pure time value of money (measured by the risk-free rate), the amount of the reward for bearing systematic risk (measured by the market risk premium ("MRP")), and the amount of systematic risk incurred by the asset (measured by beta). Specifically, the CAPM methodology estimates the COE by taking the risk-free rate and adding the MRP multiplied by beta.[131] The MRP is calculated by subtracting the risk-free rate from the expected market return. The general formula of the CAPM is as follows:

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

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 MRP.

[130] Beta is a measure of the volatility—or systematic risk—of a security or portfolio compared to the market as a whole. (Investopedia, retrieved October 13, 2022).
[131] Roger A. Morin, New Regulatory Finance (Public Utilities Reports, Inc. 2006).

For the risk-free rate of each time period, Staff used the average yield on 30-Year U.S. Treasury bonds which was 4.50% for the Q4 2024. For Staff's CAPM estimation, it relied on betas provided by Value Line.[132] For the MRP estimate, Staff relied on four sets of data for the Q4 2024. The first data set is the long-term geometric mean of historical return differences between large company stocks and long-term government bonds from 1926-2023, resulting in MRP estimates of 4.54%.[133] The second data set is the long-term arithmetic mean of historical return differences between large company stocks and long-term government bonds from 1926-2023, resulting in MRP estimates of 5.94%.[134] The third data set is the long-term geometric mean of historical return differences between S&P 500 and long-term government bonds from 1928-2023, resulting in MRP estimates of 5.23%.[135] The fourth data set is the long-term arithmetic mean of historical return differences between S&P 500 and long-term government bonds from 1928-2023, resulting in MRP estimates of 6.80%.[136]

Q. What is the result of Staff's CAPM COE estimation?

A. For the current rate case, Staff's CAPM estimation of the COE for NGS utility companies in its proxy group ranges from 8.85% to 10.17%, with an average CAPM COE estimate of 9.51%, based on the proxy group of NGS utility companies presented in Table 3.[137] The detailed calculation procedure of Staff's CAPM analysis its summary results are presented in Schedule SJW-d13.

[132] Value Line, https://valueline.com/?msclkid=4ed36370d16911eca58154b129389016.
[133] Kroll, the Stocks, Bonds, Bills, and Inflation (SBBI®) Monthly Dataset.
[134] Ibid.
[135] Risk Premium, Damodaran Online, Stern School of Business, NYU.
[136] Ibid.
[137] Schedule SJW-d13, Won's Direct Testimony.

3. Bond Yield Plus Risk Premium

Q. Please explain the BYPRP model used for recommending ROE.

A. The BYPRP model is widely accepted in academia and regulatory proceedings to estimate ROE.[138] The BYPRP model is built on the premise that investors demand a greater return in exchange for taking on higher levels of risk; for instance, a company's common stock equity is riskier than its corporate bonds because equity holders have residual claims on a company's assets and earnings, which means they are not guaranteed fixed returns and may face greater volatility in their investment. According to the Chartered Financial Analyst ("CFA") study guide, BYPRP estimates the ROE of a company by adding its equity risk premium to the yield-to-maturity ("YTM") of the subject company's long-term debt.[139]

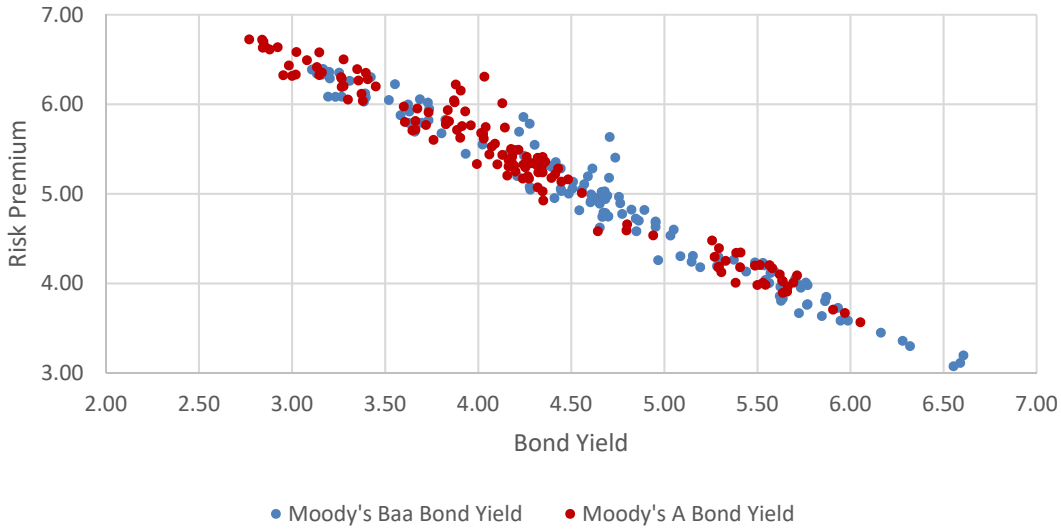
In contrast to DCF and CAPM estimates of the COE for recommending an authorized ROE, Staff's BYPRP method is designed to directly estimate an authorized ROE. Staff's BYPRP method involves estimating an authorized ROE by adding an associated risk premium to the utility bond yields. The relationship between ROE and Risk Premium can be expressed as follows:

ROE = Bond Yield + Risk Premium.

Staff utilized Moody's A-rated and Baa-rated public utility bond yields and defined the difference between the authorized ROE and the utility bond yield as the Risk Premium. Staff's BYPRP analysis considered 132 authorized ROEs of natural gas utilities over an 11-year period from 2014 to 2024.[140] To determine a risk premium for a given bond yield, Staff relied on the negative relationship between risk premiums and bond yields, as shown in Figure 6.

[138] Paragraph 146, Opinion No. 531, 147 FERC ¶ 61,234.
[139] Stowe, J. D., Robinson, T. R., Pinto, J. E., & McLeavey, D. W. (2002) Analysis of Equity Investment: Valuation. Association for Investment Management and Research.
[140] S&P Capital IQ Pro, Rate Case History (Past Rate Cases).

Figure 6. Bond Yield and Risk Premium (2014-2024)



Staff determined Risk Premiums for each of those months by subtracting the 3-month moving average yield of A-rated and Baa-rated public utility bonds from the 3-month moving average authorized ROE for vertically integrated natural gas utilities in each month. To account for the inverse relationship between bond yields and risk premiums, Staff performed a regression analysis between the utility bond yields and monthly risk premiums during the 2014-2024 study period. Using a regression analysis, Staff obtained the following equation:

Risk Premium (%) = 9.4667% – 0.9509 Bond Yield (%).[141]

In Staff's regression model, the results showed an R-squared value of 0.96 and a p-value associated with the regression coefficient of less than 0.0001. This indicates that approximately 96% of the variability in the Risk Premium can be explained by the Bond Yield and suggests that the Bond Yield has a significant effect on the Risk Premium. In the third and fourth quarters of 2024, the average yields of A and BBB-rated utility bonds were 5.46% and 5.67%,

[141] Schedule SJW-d14-2, Won's Direct Testimony.

respectively.[142] Using these yields and the equation of the regression analysis result listed above, Staff's BYPRP analysis indicates that the NGS utility's estimated ROE is 9.64% as illustrated in Staff's Schedule SJW-d14-1.

4. Authorized Return on Equity

Q. What is Staff's recommendation of authorized ROE in this proceeding based on the results of COE and ROE estimation analyses?

A. Staff conducted two COE estimation analyses using DCF and CAPM. In addition, Staff directly estimated an authorized ROE using the BYPRP method. Based on Staff's estimation analyses described above, Staff estimates Ameren Missouri's current market COE to be in the range of 8.25% to 9.93% summarized in Table 4. Staff recommends that the Commission grant Ameren Missouri an authorized ROE of 9.64% within a reasonable range of 9.39% to 9.89%.[143]

Table 4: Summary Result of COE and ROE Estimation[144]

	COE Analysis		
	Lower	Mean	Upper
DCF	7.66%	8.68%	9.70%
CAPM	8.85%	9.51%	10.17%
	8.25%	9.09%	9.93%

	ROE Analysis		
	Lower	Estimate	Upper
BYPRP	9.63%	9.64%	9.65%

[142] Schedule SJW-d14-1, Won's Direct Testimony.
[143] Schedule SJW-d16, Won's Direct Testimony.
[144] Schedule SJW-d15, Won's Direct Testimony.

Q. Does Staff have any supporting evidence the Commission can consider to determine the reasonableness of Staff's ROE recommendation?

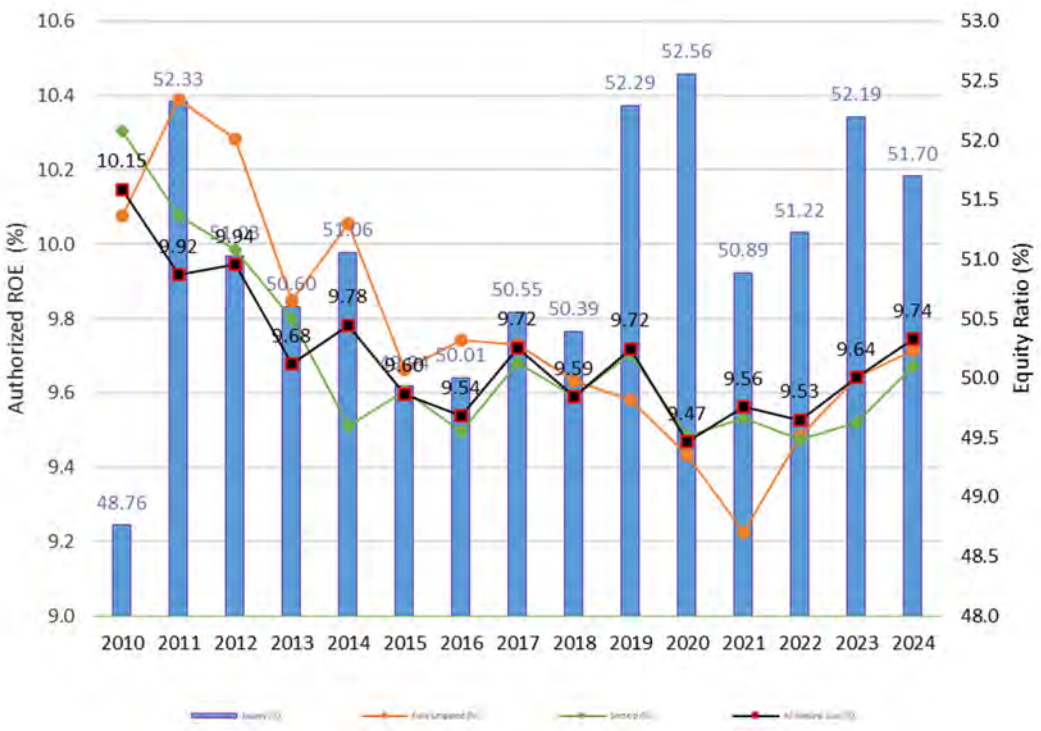
A. Yes. Staff recognizes that the Commission may be interested in recent authorized ROEs for other NGS utility companies in the U.S. as a test of reasonableness of Staff's recommendation of authorized ROE. Comparing Staff's recommended ROE to those of similar natural gas utilities provides a benchmark for assessing whether the recommendation falls within a reasonable range. In addition, analyzing recent authorized ROEs for other natural gas utilities helps to gauge what is considered reasonable within the industry at a given time.

Table 5 presents information compiled and published by Regulatory Research Associates ("RRA") which details the average fully litigated and other authorized ROEs from Commissions around the U.S. in the years 2010 - 2024 along with the number of cases considered:

Table 5: Authorized ROE and Equity Ratio in the U.S. (2010-2024)[145]

	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	10.39	48.17	8	10.08	51.82	8	9.92	52.33	16
2012	10.28	49.98	21	9.99	50.97	14	9.94	51.03	35
2013	9.85	48.25	12	9.80	48.53	9	9.68	50.60	21
2014	10.05	50.14	15	9.51	48.61	11	9.78	51.06	26
2015	9.66	48.98	5	9.60	49.32	11	9.60	49.94	16
2016	9.74	49.75	10	9.50	48.60	16	9.54	50.01	26
2017	9.73	49.23	7	9.68	50.63	17	9.72	50.55	24
2018	9.63	48.70	17	9.59	50.27	23	9.59	50.39	40
2019	9.58	51.07	12	9.70	52.47	21	9.72	52.29	33
2020	9.43	49.87	12	9.48	52.66	23	9.47	52.56	35
2021	9.23	50.71	13	9.53	51.02	30	9.56	50.89	43
2022	9.48	51.25	9	9.47	50.70	24	9.53	51.22	33
2023	9.64	52.10	21	9.52	51.01	22	9.64	52.19	43
2024	9.71	50.32	16	9.67	52.72	26	9.74	51.70	42

[145] S&P Capital IQ Pro: Regulatory Research Association, retrieved May 2, 2024.



In 2024, the average authorized ROE of natural gas utilities for fully litigated and settled cases is 9.71% and 9.67%, respectively, for an overall average of 9.74% over a total of 42 cases. Considering the current high interest rates, Staff's recommended authorized ROE of 9.64% is generally consistent with ROEs recently authorized for other natural gas utilities around the country. It is Staff's position that in order for Ameren Missouri to be competitive in the capital market, it needs to have the opportunity to earn an ROE that is reasonably consistent with ROEs awarded to other natural gas utilities around the country.

Q. What is the most recent authorized ROE determined by this Commission for an NGS utility?

A. The Commission's most recent, fully-litigated NGS rate case is Spire Missouri's rate case, Case No. GR-2021-0108, ("2021 Spire rate case").[146] In the 2019 Spire rate case, the Commission ordered an authorized ROE of 9.37%.

5. Costs of Debt and Preferred Stock

Q. What is the cost of preferred stock and COD for the purpose of ratemaking?

A. To recommend an allowed ROR, the cost of preferred stock and COD are essential components in calculating the cost of capital. The cost of preferred stock is the return that a company must provide to its preferred shareholders, which is essentially the dividend yield on preferred shares. Unlike common stock dividends, preferred stock dividends are usually predetermined. COD refers to the expenses a utility incurs from borrowing money through bonds, loans, or other debt instruments. These costs typically include interest payments and any associated fees. Estimating COD involves using embedded COD methodologies, such as calculating the weighted average cost of debt, analyzing interest rates on existing debt instruments, evaluating credit ratings, and comparing borrowing costs to industry benchmarks.

Q. What cost of preferred stock should the Commission authorize for Ameren Missouri in this proceeding?

A. At this time, Staff recommends that the Commission authorize the cost of preferred stock in this proceeding to be Ameren Missouri's cost of preferred stock as of September 30, 2024, which is 4.18%.[147] This cost of preferred stock has not changed from Ameren Missouri's last rate proceeding.[148] Staff will update its cost of preferred stock throughout this proceeding through the true-up period, as actual information becomes available.

[146] *Amended Report and Order* issued November 12, 2021, in Case No. GR-2021-0108.
[147] Staff's Data Request No. 0113 and Schedules SJW-d7-2, Won's Direct Testimony.
[148] Schedule SJW-TR-1, Won's True-Up Rebuttal Testimony, ER-2022-0337.

Q. What COD should the Commission authorize for Ameren Missouri in this proceeding?

A. At this time, Staff recommends that the Commission authorize the ratemaking COD in this proceeding to be Ameren Missouri's embedded cost of debt as of September 30, 2024, which is 4.24%.[149] Staff will update its embedded cost of debt throughout this proceeding through the true-up period, as additional information becomes available.

VII. CONCLUSION

Q. What is Staff's conclusion?

A. Considering the current financial and economic markets, particularly the recent changes in the inflation rate and interest rates, as well as Ameren Missouri's risk profile, Staff's COE and ROE analysis supports a just and reasonable recommended ROE of 9.64%, which is the midpoint of a range from 9.39% to 9.89%, for Ameren Missouri. Because of the rapidly changing economic outlook, Staff will update its recommended ROE if there are significant changes in the economic outlook that necessitate an update.

Staff's recommended ROE of 9.64% for Ameren Missouri and cost of preferred stock of 4.18% and cost of debt of 4.24% applied to a capital structure of 52.91% common equity, 0.56% preferred stock and 46.53% long-term debt, results in an allowed ROR of 7.09%. Staff will continue to monitor Ameren Corp. and Ameren Missouri's capital structure and cost of debt through the true-up period and will make its final recommendation at that time.

Q. Does this conclude your direct testimony?

A. Yes, it does.

[149] Staff's Data Request No. 0108 and Schedules SJW-d7-1, Won's Direct Testimony.

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 *Direct 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 21st day of February 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