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| Witness: | Ann E. Bulkley |
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| Sponsoring Party: | Union Electric Company |
| File No.: | ER-2024-0319 |
| Date Testimony Prepared: | June 28, 2024 |

# MISSOURI PUBLIC SERVICE COMMISSION

## FILE NO. ER-2024-0319

# DIRECT TESTIMONY

# OF

# ANN E. BULKLEY

# ON

# BEHALF OF

# UNION ELECTRIC COMPANY

# D/B/A AMEREN MISSOURI

**St. Louis, Missouri**

**June, 2024**

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**DIRECT TESTIMONY**

**OF**

**ANN E. BULKLEY**

**FILE NO. ER-2024-0319**

# I. Introduction

**Q: Please state your name, occupation and business address.**

A: My name is Ann E. Bulkley. I am a Principal with The Brattle Group ("Brattle"). My business address is One Beacon Street, Suite 2600, Boston, Massachusetts 02108.

**Q: On whose behalf are you submitting this Prepared Direct Testimony?**

A: I am submitting this testimony on behalf of Ameren Missouri (the "Company"), a wholly-owned subsidiary of Ameren Corporation ("Ameren").

**Q: Please describe your background and professional experience in the energy and utility industries.**

A: I hold a Bachelor's degree in Economics and Finance from Simmons College and a Master's degree in Economics from Boston University, with over 25 years of experience consulting to the energy industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. A summary of my professional and educational background is presented in Schedule AEB-D1.

**Q: What is the purpose of your Prepared Direct Testimony?**

A: The purpose of my testimony is to present evidence and provide a recommendation regarding the appropriate return on equity ("ROE") [1] for Ameren Missouri to be used for ratemaking purposes.

**Q: Are you sponsoring any exhibits or schedules in support of your direct testimony?**

A: Yes. My analyses and recommendations are supported by the data presented in Schedule AEB-D2, Attachments 1 through 11, which were prepared by me or under my direction.

**Q: How is the remainder of your Prepared Direct Testimony organized?**

A: The remainder of my testimony is organized as follows:

- Section II provides a summary of my analyses and conclusions.
- Section III reviews the regulatory guidelines pertinent to the development of the cost of capital.
- Section IV discusses current and projected capital market conditions and the effect of those conditions on the Company's cost of equity.
- Section V explains my selection of the proxy group of electric utilities.
- Section VI describes my analyses and the analytical basis for the recommendation of the appropriate ROE for the Company.

[1] I use the phrases "return on equity" and "cost of equity" interchangeably just as the interest rate on debt instruments and the cost of debt are interchangeable.

- Section VII provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for the Company in this case.
- Section VIII presents my conclusions and recommendations for the market cost of equity.

# II. Summary of Analyses and Conclusions

**Q: Please summarize the key factors considered in your analyses and upon which you base your recommended ROE.**

A: In developing my recommended ROE for the Ameren Missouri, I considered the following:

- The United States Supreme Court decisions in *Hope* and *Bluefield*[2] established the standards for determining a fair and reasonable authorized ROE for public utilities, including consistency of the allowed return with the returns of other businesses having similar risk, adequacy of the return to provide access to capital and support credit quality, and the requirement that the result lead to just and reasonable rates.
- The effect of current and projected capital market conditions on investors' return requirements.
- The results of several analytical approaches that provide estimates of the Company's cost of equity. Because the Company's authorized ROE should be a forward-looking estimate over the period during which the rates will be in effect, these analyses rely on forward-looking inputs and assumptions

[2] Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944) ("Hope"); Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia, 262 U.S. 679 (1923) ("Bluefield").

(*e.g.*, projected analyst growth rates in the DCF model; forecasted risk-free rate and market risk premium in the CAPM analysis).

- Although the companies in my proxy group are generally comparable to Ameren Missouri, each company is unique, and no two companies have the exact same business and financial risk profiles. Accordingly, I considered the Company's regulatory, business, and financial risks relative to the proxy group of comparable companies, and the implications of those risks in determining where the Company's ROE should fall within the reasonable range of analytical results to appropriately account for any residual differences in risk.

**Q: How did you develop your recommended cost of equity for the Company?**

A: I relied on the results of several analytical approaches to estimate the cost of equity for Ameren Missouri. To develop my ROE recommendation, I first developed a proxy group that consists of electric utility companies that face risks generally comparable to those faced by Ameren Missouri. To that electric company proxy group, I applied the Constant Growth Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and the Risk Premium approach. As discussed in more detail herein, it is appropriate to rely on multiple ROE methodologies because market conditions affect the assumptions used in each model differently. Therefore, the use of multiple ROE estimation models is beneficial to provide benchmarks and a range of results to consider.

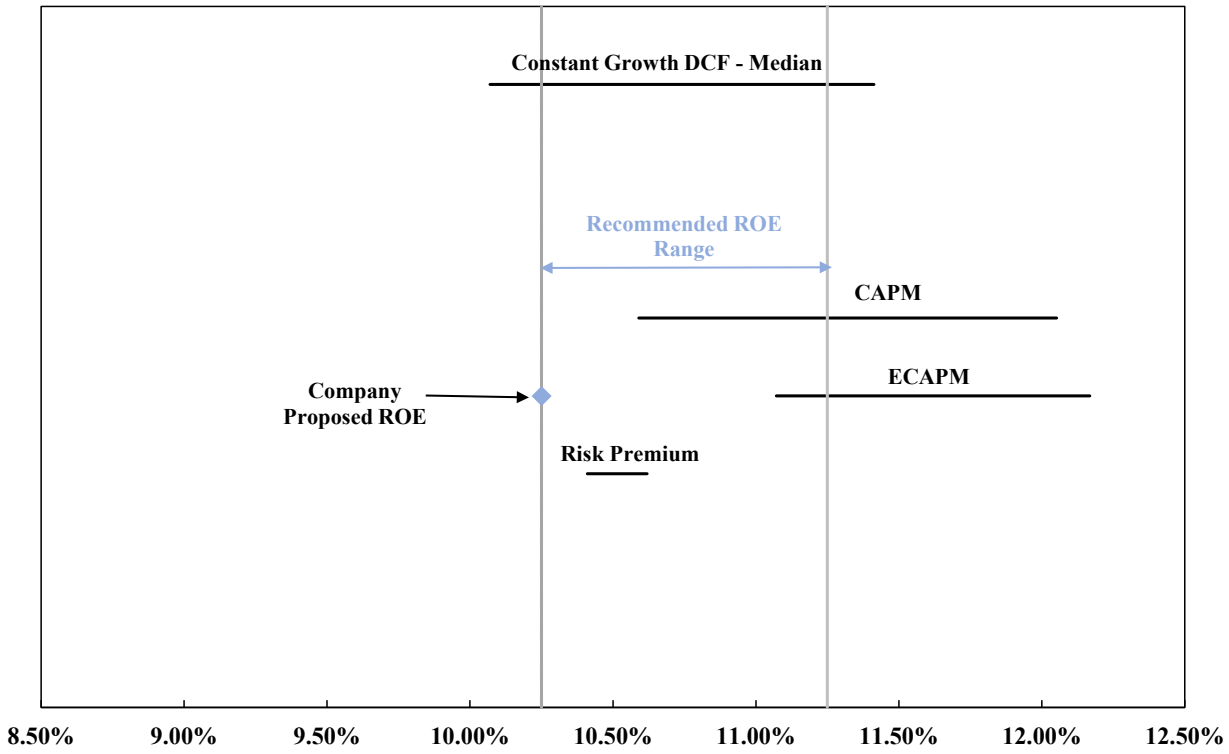
My recommendation also considers company-specific business and financial risk factors to estimate the investor-required cost of equity for the Company. Although the companies in my proxy group are generally comparable to Ameren Missouri, each

company is unique, with no two having exactly the same risk profiles. Accordingly, while I did not make any specific adjustments to my ROE estimates for any of these factors, I considered the Company's business and financial risk in the aggregate in comparison to that of the proxy group companies when determining where the Company's ROE falls within the reasonable range of analytical results to account for any residual differences in risk.

**Q: What are the results of your ROE estimation models?**

A: Figure 1 summarizes the range of results of my cost of equity analyses for Ameren Missouri.

**FIGURE 1: SUMMARY OF COST OF EQUITY ANALYTICAL RESULTS**




As shown in Figure 1, the range of results produced by the ROE estimation models is wide. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results varies considerably across methodologies. As a result, my ROE recommendation considers the range of results of analyses, as well as the company-specific risk factors and current and prospective capital market conditions expected during the time when rates set in this case would be in effect.

**Q: Are prospective capital market conditions expected to affect the results of the cost of equity analyses for the Company during the period in which the rates established in this proceeding will be in effect?**

A: Yes. Capital market conditions are expected to affect the results of the cost of equity estimation models. Specifically:

- Long-term interest rates have increased substantially in the past year and are expected to remain elevated at least over the next year.
- Since (i) utility dividend yields are less attractive than the risk-free rates of government bonds; (ii) interest rates are expected to remain elevated, and (iii) utility stock prices are inversely related to changes in interest rates; it is likely that utility share prices will continue to underperform.
- Rating agencies have responded to the risks of the utility sector, citing factors including elevated capital expenditures, interest rates, and inflation that create pressures for customer affordability and prompt rate recovery, and have noted the importance of regulatory support in their current outlooks.
- Similarly, equity analysts have noted the increased risk for the utility sector as a result of rising interest rates and expect the sector to underperform in 2024.
- Consequently, it is important to consider that if utility share prices decline, the results of the DCF model, which relies on current utility share prices, would understate the cost of equity during the period that the Company's rates will be in effect.

It is appropriate to consider all of these factors when estimating a reasonable range of the investor-required cost of equity and the recommended ROE for the Company.

**Q: What is your recommended ROE for Ameren Missouri?**

A: Based on the analytical results presented in Figure 1, the current and projected capital market conditions, and the level of regulatory, business, and financial risk

faced by Ameren Missouri's electric operations relative to the proxy group, I conclude that a ROE in the range of 10.25 to 11.25 percent is reasonable. Considering these factors, I conclude that the Company's requested ROE in this proceeding of 10.25 percent is conservative.

## III. Regulatory Guidelines

**Q: Please describe the guiding principles used in establishing the cost of capital for a regulated utility.**

A: The United States Supreme Court's *Hope* and *Bluefield* cases established the standards for determining the fairness or reasonableness of a utility's allowed ROE. Among the standards established by the Court in those cases are: (1) consistency with other businesses having similar or comparable risks; (2) adequacy of the return to support credit quality and access to capital; and (3) that the result, as opposed to the methodology employed, is the controlling factor in arriving at just and reasonable rates.[3]

**Q: Is fixing a fair rate of return just about protecting the utility's interests?**

A: No. As the court noted in *Bluefield*, a proper rate of return not only assures "confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit [but also] enable[s the utility] to raise the money necessary for the proper discharge of its public

[3] *Hope*, 320 U.S. 591 (1944); *Bluefield*, 262 U.S. 679 (1923).

duties."[4] As the Court went on to explain in *Hope*, "[t]he rate-making process … involves balancing of the investor and consumer interests."[5]

**Q: Has the Missouri Public Service Commission ("Commission") provided similar guidance in establishing the appropriate return on common equity?**

A: Yes. The Commission follows the precedents of the *Hope* and *Bluefield* cases and acknowledges that utility investors are entitled to a fair and reasonable return. This position was set forth by the Commission as follows:

> The standard for rates is "just and reasonable," a standard founded on constitutional provisions, as the United States Supreme Court has explained. But the Commission must also consider the customers. Balancing the interests of investor and consumer is not reducible to a single formula, and making pragmatic adjustments is part of the Commission's duty. Thus, the law requires a just and reasonable end, but does not specify a means. The Commission is charged approving rate schedules that are as "just and reasonable" to consumers as they are to the utility.[6]

Based on these standards, the authorized ROE should provide the Company with a fair and reasonable return and should provide access to capital on reasonable terms in a variety of market conditions.

**Q: Why is it important for a utility to be allowed the opportunity to earn a return that is adequate to attract capital at reasonable terms?**

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4 *Bluefield*, 262 U.S. 679, 67 L Ed 1176 (1923).

5 *Hope*, 320 U.S. 591, 603 (1944).

6 In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service, File No. ER-2016-0285, Report and Order, May 13, 2017, at 10-11.

A: An ROE that is adequate to attract capital at reasonable terms enables the Company to continue to provide safe, reliable service while maintaining its financial integrity. That return should be commensurate with returns expected elsewhere in the market for investments of equivalent risk. If it is not, investors will seek alternative investment opportunities for which the expected return reflects the perceived risks, thereby inhibiting the Company's ability to attract capital at reasonable cost.

**Q: Is a utility's ability to attract capital also affected by the ROEs that are authorized for other utilities?**

A: Yes. Utilities compete directly for capital with other investments of similar risk, which include other electric, natural gas, and water utilities. Therefore, the ROE authorized for a utility sends an important signal to investors regarding whether there is regulatory support for financial integrity, dividends, growth, and fair compensation for business and financial risk. The cost of capital represents an opportunity cost to investors. If higher returns are available elsewhere for other investments of comparable risk over the same time-period, investors have an incentive to direct their capital to those alternative investments. Thus, an authorized ROE significantly below authorized ROEs for other utilities can inhibit the utility's ability to attract capital for investment.

**Q: What are your conclusions regarding regulatory guidelines?**

A: The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility services,

a utility must have the opportunity to recover the return of, and the market-required return on, its invested capital. Because utility operations are capital-intensive, regulatory decisions should enable the utility to attract capital at reasonable terms under a variety of economic and financial market conditions. Doing so balances the long-term interests of the utility and its customers.

The financial community carefully monitors the current and expected financial condition of utility companies and the regulatory frameworks in which they operate. In that respect, the regulatory framework is one of the most important factors in both debt and equity investors' assessments of risk. The Commission's order in this proceeding, therefore, should establish rates that provide the Company with a reasonable opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable terms under a variety of economic and financial market conditions; (2) sufficient to ensure good financial management and firm integrity; and (3) commensurate with returns on investments in enterprises with similar risk. Providing Ameren Missouri the opportunity to earn its market-based cost of equity supports the financial integrity of the Company, which is in the interest of both customers and shareholders.

**Q: Does the fact that the Company is owned by Ameren, a publicly-traded company, affect your analysis?**

A: No, it does not. The stand-alone ratemaking principle is the foundation of jurisdictional ratemaking. This principle requires that the rates that are charged in any operating jurisdiction be for the costs incurred in that jurisdiction. The stand-

alone ratemaking principle ensures that customers in each jurisdiction only pay for the costs of the service provided in that jurisdiction, which is not influenced by the business operations in other operating companies. In this proceeding, consistent with stand-alone ratemaking principle, it is appropriate to establish the cost of equity for Ameren Missouri, not its publicly-traded parent, Ameren. It is appropriate to establish a return on equity and capital structure that provide Ameren Missouri the ability to attract capital on reasonable terms.

## IV. Capital Market Conditions

**Q: Why is it important to consider capital market conditions in the estimation of the investor-required return on equity?**

A: The models used to estimate the cost of equity rely on market data and thus the results of those models can be affected by prevailing market conditions at the time the analysis is performed. While the ROE established in a rate proceeding is intended to be forward-looking, the analyst uses current and projected market data, including stock prices, dividends, growth rates, and interest rates in the cost of equity estimation models to estimate the investor-required return for the subject company.

Analysts and regulatory commissions recognize that current market conditions affect the results of the cost of equity estimation models. As a result, it is important to consider the effect of the market conditions on these models when determining an appropriate range for the ROE, and the ROE to be used for ratemaking purposes for a future period. If investors do not expect current market conditions to be sustained in the future, it is possible that the cost of equity estimation

models will not provide an accurate estimate of investors' required return during that rate period. Therefore, it is very important to consider projected market data to estimate the return for that forward-looking period.

**Q: What factors are affecting the cost of equity for regulated utilities in the current and prospective capital markets?**

A: The cost of equity for regulated utility companies is affected by several factors in the current and prospective capital markets, including: (1) changes in monetary policy; (2) relatively high inflation; and (3) increased interest rates that are expected to remain relatively high over the next few years. These factors affect the assumptions used in the cost of equity estimation models.

## V. Inflationary Expectations in Current and Projected Capital Market Conditions

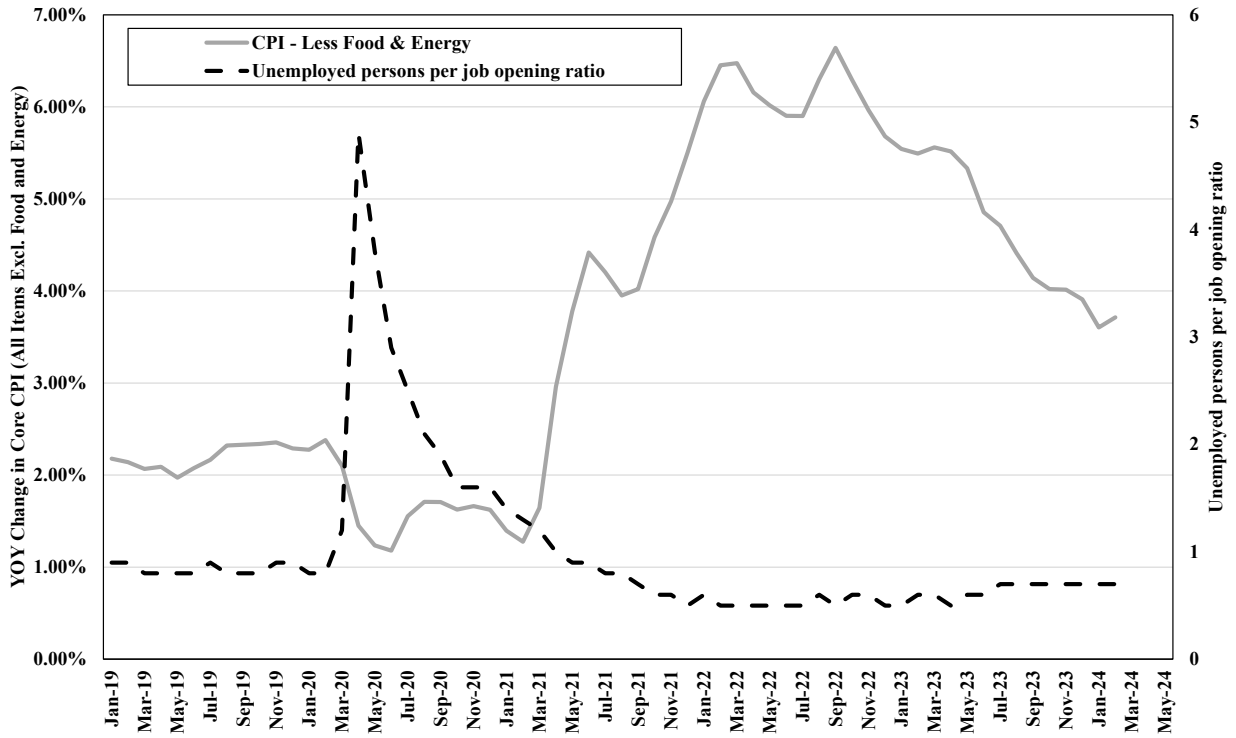
**Q: What has the level of inflation been over the past few years?**

A: As shown in Figure 2, core inflation increased steadily beginning in early 2021, rising from 1.41 percent in January 2021 to a high of 6.64 percent in September 2022, which was the largest 12-month increase since 1982. Since that time, while core inflation has declined in response to the Federal Reserve's monetary policy, it continues to remain significantly above the Federal Reserve's target level of 2.0 percent.

In addition, I also considered the ratio of unemployed persons per job opening, which is currently 0.7 and has been consistently below 1.0 since 2021, despite the Federal

Reserve's accelerated policy normalization. This metric indicates sustained strength in the labor market. Further, the May 2024 jobs report showed that the U.S economy added 272,000 jobs in that month, which was significantly higher than the expectation, demonstrating the strength of the economy.[7] Given the Federal Reserve's dual mandate of maximum employment and price stability, the continued increased levels of core inflation coupled with the strength in the labor market has resulted in the Federal Reserve's sustained focus on the priority of reducing inflation.

**FIGURE 2: CORE INFLATION AND UNEMPLOYED PERSONS-TO-JOB OPENINGS, JANUARY 2019 TO APRIL 2024[8]**




[7] CNN Business, US Economy Added a Whopping 272,000 Jobs In May (June 7, 2024).

[8] Bureau of Labor Statistics.

**Q: What are the expectations for inflation over the near-term?**

A: Over the last several months the Federal Open Market Committee ("FOMC") has been clear that they intend to rely on market data before making any changes to interest rates. In the FOMC's meeting on May 1, 2024, Chairman Powell observed that the FOMC will make their decision "meeting by meeting."[9] Further, Chairman Powell did not state that it may be appropriate to reduce the federal funds rate at some point in 2024 as he has in prior meetings, and indicated that the FOMC is prepared to maintain the current federal funds rate range higher for longer if needed to reduce inflation.[10] The following summarize comments from several other Federal Reserve members:

- Boston Federal Reserve President Susan Collins recently commented that she thought the federal funds rate would need to be kept at its current level until there was greater confidence that inflation was moving sustainably towards 2 percent.[11] Ms. Collins cited improvements in supply chains as the reason inflation declined in 2023, but that may not continue in 2024 and that slower economic growth will be needed to reduce demand in order to further reduce inflation.[12]

- New York Federal Reserve President John Williams and Minneapolis Federal Reserve President Neel Kashkari also recently stated that the

[9] Federal Reserve, Transcript of Chair Powell's Press Conference, May 1, 2024, at 3.

[10] Id., at 6-7.

[11] Steve Matthews, Fed's Collins Says Reaching 2% Inflation Goal May Take Longer. Bloomberg, May 8, 2024.

[12] Jennifer Schonberger, Collins Becomes Latest Fed Official to Warn Rates Will Likely Stay Higher for Longer, Yahoo! Finance, May 8, 2024.

federal funds rate will need to remain at its current level for longer as more data is collected.[13]

- Atlanta Federal Reserve President Raphael Bostic, who is a voting member of the FOMC in 2024, recently commented that he expects one rate cut in 2024 but would not rule out the possibility of either two or zero rate cuts depending on the direction of the macroeconomic data.[14] Mr. Bostic's expectations of one rate cut is less than the three that were forecast at the recent FOMC meeting in March 2024.

- Finally, Federal Reserve Governor Michelle Bowman, also a voting member of the FOMC, recently noted that while it is not her baseline forecast, there is the possibility that rates will need to increase in 2024 to control inflation as she still sees "a number of potential upside risks to inflation."[15]

**Q: Do recent economic indicators signal strength in the U.S. Economy?**

A: Yes. The following recent macroeconomic data has been released demonstrating the unexpected strength in the U.S. economy:

- U.S. employers added 272,000 jobs in May, far exceeding economists' expectation of 180,000.[16]

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[13] Id.

[14] Jennifer Schonberger, Fed's Bostic still expects 1 rate cut in 2024 but doesn't rule out 0 or 2, Yahoo! Finance (Apr. 9, 2024).

[15] Jeff Cox, Fed Governor Bowman say additional rate hike could be needed if inflation stays high, CNBC (Apr. 5, 2024).

[16] U.S. Bureau of Labor Statistics, Economic News Release, Employment Situation News Release, June 7, 2024.

- Average hourly earnings increased 0.4 percent in May 2024, up 4.1 percent year-over-year.[17]

- The year-over-year ("YoY") change in core inflation as measured by the Consumer Price Index ("CPI") excluding food and energy prices was 3.6 percent in April 2024 which "remains above levels that would suggest a cut in interest rates is imminent."[18]

**Q: What is the market's expectation about interest rate cuts?**

A: The market is expecting that interest rates will remain higher for longer than anticipated in 2024. The market has recognized the strength in the economy and the labor market and has tempered its expectations regarding how much the FOMC will decrease the federal funds rate in 2024. The CME Group, which publishes a "FedWatch" probability chart of FOMC activity, indicated a 99.4 percent change that interest rates would remain at the current levels in the June 2024 meeting and greater than 90 percent chance that interest rates would remain at current levels in July 2024. The CME group is currently projecting a greater than 80 percent probability that there is at most one rate cut through November 2024.[19]

[17] Id.

[18] Jeff Cox, CPI report shows inflation easing in April, with consumer prices still rising 3.4% from a year ago, CNBC (May 15, 2024).

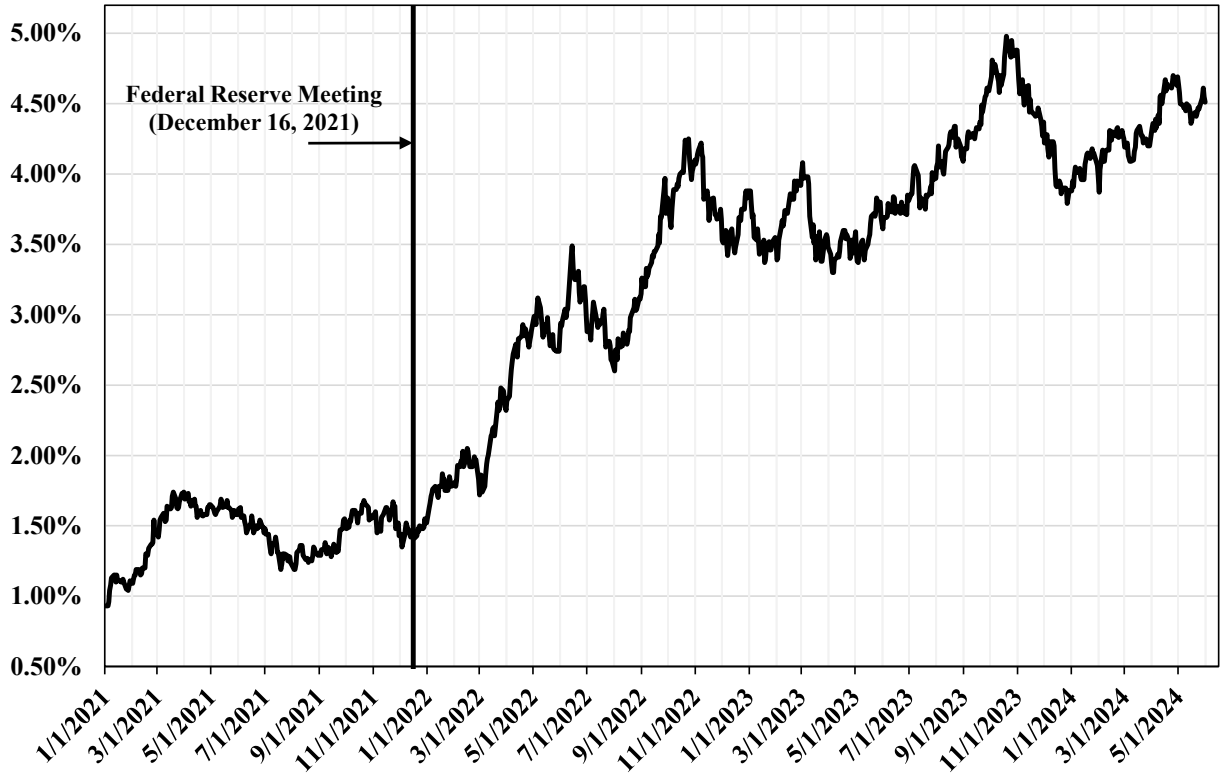
[19] The CME Group FedWatch Tool accessed June 7, 2024.

# VI. The Effect of Inflation and Monetary Policy on Interest Rates and the Investor-Required Return

**Q: Have the yields on long-term government bonds responded to inflation and the Federal Reserve's normalization of monetary policy?**

A: Yes. As the Federal Reserve has substantially increased the federal funds rate in response to increased levels of inflation that have persisted for longer than originally projected, longer term interest rate have also increased. As shown in Figure 3, since the Federal Reserve's December 2021 meeting, the yield on 10-year Treasury bonds has approximately tripled, increasing from 1.47 percent on December 15, 2021 to approximately 4.50 percent at the end of May 2024.

**FIGURE 3: 10-YEAR TREASURY BOND YIELD – JANUARY 2021 THROUGH MAY 2024**




**Q: How have interest rates and inflation changed since the Company's last rate case?**

As shown in Figure 4, interest rates have increased since the Company's last rate proceeding. Specifically, the yield on the 30-year Treasury bond has increased approximately 62 basis points. While inflation has declined, it remains well above the Federal Reserve's target level of 2.0 percent.

**FIGURE 4: CHANGE IN MARKET CONDITIONS SINCE COMPANY'S LAST RATE CASE**

| Period | Date | Federal Funds Rate | 30-Day Avg of 30-Year Treasury Bond Yield | Core Inflation Rate |
|---|---|---|---|---|
| C-ER-2022-0337 | 6/14/2023 | 5.08% | 3.88% | 4.86% |
| Current | 5/31/2024 | 5.33% | 4.50% | 3.62% |
| Change | | 0.25% | 0.62% | -1.24% |

**Q: What have equity analysts said about long-term government bond yields?**

A: Leading equity analysts have noted that they expect the yields on long-term government bonds to remain elevated. For example, the consensus estimate of the average yield on the 30-year Treasury bond reported by *Blue Chip Financial Forecasts* is 4.40 percent through the third quarter of 2025.[20] The *Blue Chip Financial Forecasts* projects the 30-year Treasury bond yield to decrease slightly in 2025 through 2028, increasing back to 4.40 percent in the out years of the five and ten year forecasts ending in 2035. Therefore, investors expect interest rates to remain elevated for a significant forward-looking period. As a result, it is reasonable to expect that if government bond yields remain elevated, the cost of equity will remain materially higher than at the time of the Company's last rate proceeding.

[20] *Blue Chip Financial Forecasts*, Vol. 43, No. 6, May 31, 2024, at 2.

# VII. Expected Performance of Utility Stocks and the Investor-Required ROE on Utility Investments

**Q: Are utility share prices correlated to changes in the yields on long-term government bonds?**

A: Yes. Interest rates and utility share prices are inversely correlated, which means that increases in interest rates result in declines in the share prices of utilities and vice versa. For example, Goldman Sachs and Deutsche Bank examined the sensitivity of share prices of different industries to changes in interest rates over the past five years. Both Goldman Sachs and Deutsche Bank found that utilities had one of the strongest negative relationships with bond yields (i.e., increases in bond yields resulted in the decline of utility share prices).[21]

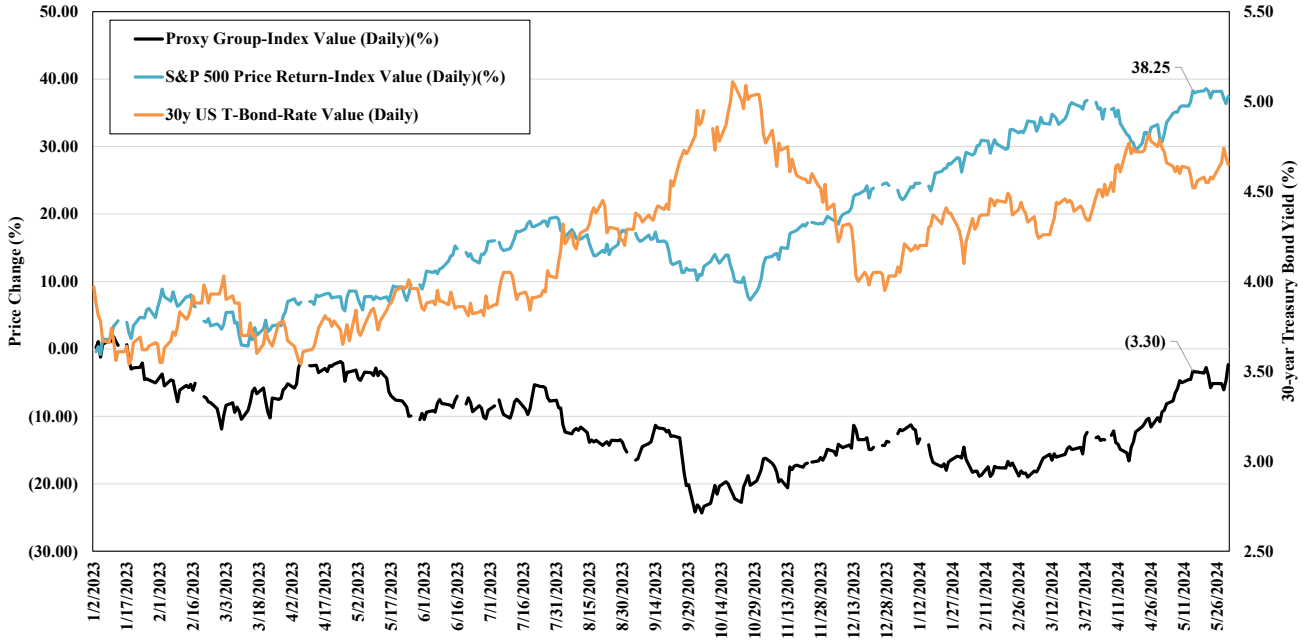
**Q: How has the utility sector performed since January 2023?**

A: Utility stocks have significantly underperformed the broader market, as Treasury bond yields have increased to levels greater than the dividend yields of utility stocks. For example, as shown in Figure 6, since January 2023, the yield on the 30-year Treasury bond has increased by nearly 68 basis points, while the share prices for the vertically-integrated electric utilities included in my proxy group (discussed in the following section) have declined by 2.34 percent while the S&P 500 Index has increased approximately 37.10 percent. The stock price underperformance for the

[21] Justina Lee, Wall Street Is Rethinking the Treasury Threat to Big Tech Stocks, Bloomberg.com (Mar. 11, 2021).

utility sector indicates that the cost of equity has increased since the Company's last rate proceeding.

**FIGURE 5: RELATIVE PERFORMANCE OF THE PROXY GROUP AND THE S&P 500 INDEX, JANUARY 2023 THROUGH MAY 2024**[22]




**Q: What are equity analysts' current projections regarding the performance of the utilities sector over the near term?**

A: Various equity analysts continue to project that utilities stock prices will underperform the broader market given the substantial increases in interest rates over the past two years:

- Fidelity Investments classifies the utility sector as underweight.[23]

22 S&P Capital IQ Pro.
23 Fidelity Investments, "Second Quarter 2024 Investment Research Update," April 22, 2024, p. 3.

- CFRA Research recently classified the utility sector as underweight, stating that the 10-year Treasury yield, which CFRA noted is the "benchmark for gauging the attractiveness of utility valuations and yields," exceeded the dividend yield of the utilities included in the S&P Composite 1500.[24]
- UBS classified the 11 sectors of the S&P 500 for 2024 as either most preferred, neutral, or least preferred with the utility sector being classified as one of UBS's three least preferred sectors (*i.e.*, utilities, materials and real estate).[25]
- Professional investors surveyed by *Barron's* in its most recent Big Money poll published in May 2024 selected the utility sector as one of the five equity sectors that they liked the least over the next twelve months, indicating they are projecting that utilities will underperform the broader market over the next twelve months.[26]

**Q: Why do equity analysts expect the utility sector to continue to underperform over the near-term?**

A: The yields for the utility sector remain lower than the yields on long-term government bonds. To illustrate this point, I examined the difference between the dividend yields of utility stocks and the yields on long-term government bonds from January 2010 through March 2024 (i.e., yield spread). I selected the dividend yield on the S&P Utilities Index as the measure of the dividend yields for the utility sector and the yield on the 10-year Treasury bond as the estimate of the yield on long-term government bonds.

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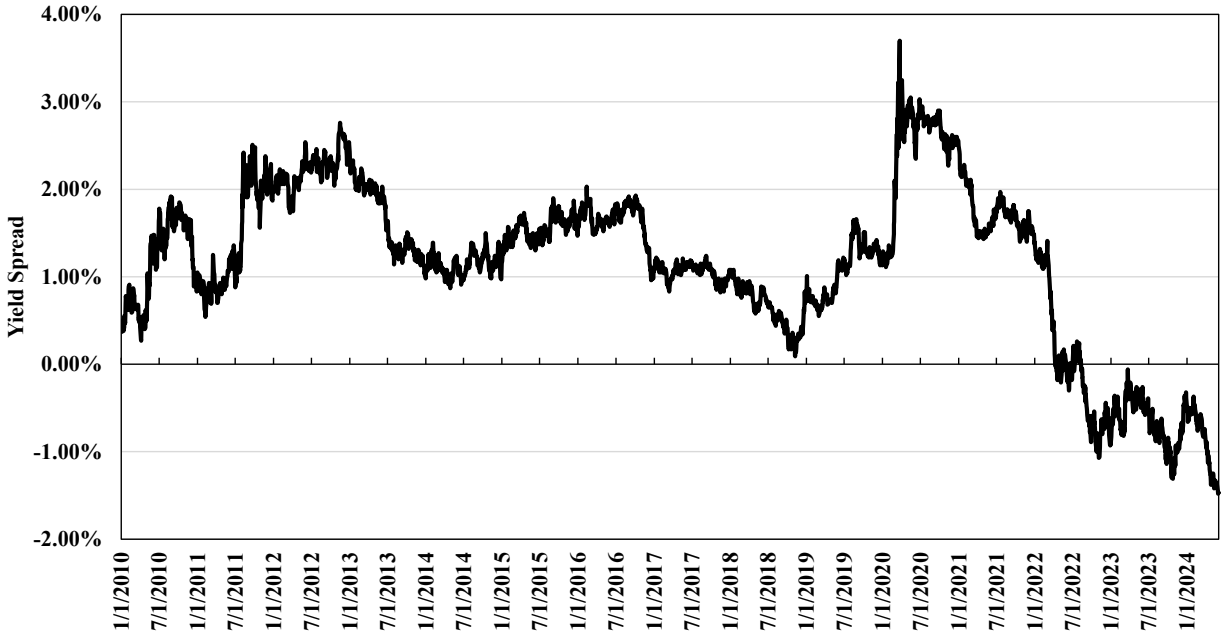
[24] Daniel Rich, U.S. Utilities – Cherry-picking Quality in an Underperforming Sector, CFRA, January 26, 2024, p.1.

[25] Jason Capul, UBS Prefers Info Tech, Consumer Staples and Energy in 2024, Seeking Alpha, December 12, 2023.

[26] Paul La Monica, The Stock Market Will Rise Nearly 10% More This Year, Money Managers Predict in Barron's Latest Poll, Barron's, May 3, 2024.

As shown in Figure 7, the recent significant increase in long-term government bonds yields has resulted in the yield on long-term government bonds exceeding the dividend yields of utilities. The yield spread as of May 31, 2024 was negative 1.47 percent, meaning that the yield on the 10-year Treasury bond exceeds the dividend yield for the S&P Utilities Index. However, the long-term average yield spread from 2010 to 2024 is 1.16 percent. Therefore, the current yield spread is well below the long-term average. Because of the fact that the yield spread is currently well below the long-term average, and the expectation that interest rates will remain relatively high through at least the next year, it is reasonable to conclude that the utility sector stock prices will most likely underperform over the near-term. This is because investors that purchased utility stocks as an alternative to the lower yields on long-term government bonds would otherwise be inclined to rotate back into government bonds, particularly as the yields on long-term government bonds remain elevated, thus resulting in a decrease in the share prices of utilities.

**FIGURE 6: SPREAD BETWEEN THE PROXY GROUP DIVIDEND YIELD AND THE 10-YEAR TREASURY BOND YIELD, JANUARY 2010 – MAY 2024**[27]




## VIII. Conclusion Regarding Capital Market Conditions

**Q: What are your conclusions regarding the effect of current market conditions on the cost of equity for the Company?**

A: As shown in Figure 4, currently interest rates are 25 basis points higher than when the decision was issued in the Company's last rate proceeding. Further, as shown in Figure 7, the utilities sector has continued to underperform the broader market. In addition, macroeconomic indicators demonstrate that the economy is strong, which has caused the FOMC to maintain its current stance on monetary policy. Therefore, at this time, the market is not expecting a near term rate cut. Given the

[27] S&P Capital IQ Pro and Bloomberg Professional.

aforementioned factors, the cost of equity is directionally higher than at the time of the 2023 rate decision.

## IX. Proxy Group Selection

**Q: Have you developed a proxy group for estimating the ROE for the Company in this proceeding?**

A: Yes. In this proceeding, I am estimating the cost of equity for the Company, which is a rate-regulated subsidiary of Ameren, and is not itself publicly-traded. Since the ROE is a market-based concept, and the Company's operations do not make up the entirety of a publicly-traded entity, it is necessary to establish a group of companies that is both publicly-traded and comparable to the Company in certain fundamental business and financial respects to serve as its "proxy" for purposes of the ROE estimation process. Even if Ameren Missouri were a publicly-traded entity, it is possible that transitory events could bias its respective market value over a given period. A significant benefit of using a proxy group is that it moderates the effects of unusual events that may be associated with any one company. The proxy companies used in my analyses all possess a set of operating and financial risk characteristics that are substantially comparable to Ameren Missouri, and, therefore, provide a reasonable basis for deriving the appropriate ROE.

**Q: Please provide a brief profile of the Company.**

A: Ameren Missouri (also known as Union Electric Company) is a wholly-owned subsidiary of Ameren Corporation. The Company is the largest electric utility in

Missouri, providing regulated retail electric service to more than 1.2 million electric customers across a 24,000 square mile area in central and eastern Missouri, including the greater St. Louis metropolitan area.[28] As of December 31, 2023, the Company's net electric utility plant in Missouri was approximately $15.4 billion.[29] Ameren Missouri's issuer/corporate credit rating is currently rated BBB+/Stable by Standard & Poor's ("S&P") and Baa1/Stable by Moody's.[30]

**Q: How did you select the companies included in your proxy group?**

A: I began with the group of 36 companies that Value Line Investment Survey ("Value Line") classifies as electric utilities and applied the following screening criteria to select companies that:

- pay consistent quarterly cash dividends because such companies can be analyzed using the Constant Growth DCF model;
- have investment grade long-term issuer ratings from both S&P and Moody's;
- have positive long-term earnings growth forecasts from at least two equity analysts;
- own generation assets included in rate base;
- have more than 40 percent of total energy sales provided by company-owned generation;

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28 Ameren Corporation, Form 10-K, February 29, 2023, at 100.

29 Company provided data.

30 Ameren Corporation, SEC Form 10-K, December 31, 2023, at 66; Moody's Investor Services, Inc., Credit Opinion, Union Electric Company, Credit Opinion September 19, 2023.

- derive more than 60 percent of total operating income from regulated operations;
- were not party to a merger or transformative transaction during the analytical period considered.

**Q: What is the composition of your proxy group?**

A: The screening criteria discussed above is shown in Schedule AEB-D2, Attachment 2 and resulted in a proxy group consisting of the companies shown in Figure 9.

**FIGURE 7: ELECTRIC PROXY GROUP**

| Company | Ticker |
|---|---|
| Alliant Energy Corporation | LNT |
| American Electric Power Company, Inc. | AEP |
| Avista Corporation | AVA |
| CMS Energy Corporation | CMS |
| DTE Energy Company | DTE |
| Duke Energy Corporation | DUK |
| Entergy Corporation | ETR |
| Evergy, Inc. | EVRG |
| IDACORP, Inc. | IDA |
| NextEra Energy, Inc. | NEE |
| NorthWestern Corporation | NWE |
| OGE Energy Corporation | OGE |
| Pinnacle West Capital Corporation | PNW |
| Portland General Electric Company | POR |
| PPL Corporation | PPL |
| Southern Company | SO |
| Xcel Energy Inc. | XEL |

# X. Cost of Equity Estimation

**Q: Please briefly discuss the ROE in the context of the regulated rate of return.**

A: The rate of return for a regulated utility is the weighted average cost of capital, in which the cost rates of the individual sources of capital are weighted by their respective proportion (*i.e.*, book values) in the utility's capital structure. The ROE is the cost rate applied to the equity capital in calculating the rate of return. While the cost of debt and preferred stock can be directly observed, the cost of equity is market-based and, therefore, must be estimated based on observable market data.

**Q: How is the required ROE determined?**

A: The required ROE is determined by using one or more analytical techniques that rely on market data to quantify investor expectations regarding the range of required equity returns, adjusted for certain incremental costs and risks. Informed judgment is then applied to determine where the company's cost of equity falls within the range of results produced by multiple analytical techniques. As a general proposition, the key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' views of the financial markets in general, as well as the subject company (in the context of the proxy group), in particular.

**Q: What methods did you use to determine the Company's ROE?**

A: I considered the results of the Constant Growth DCF model, the CAPM, the ECAPM, and the Bond Yield Plus Risk Premium Analysis. As discussed in more detail below,

a reasonable ROE estimate appropriately considers alternative methodologies and the reasonableness of their individual and collective results.

## XI. Importance of Multiple Analytical Approaches

**Q: Why is it important to use more than one analytical approach to estimate the cost of equity?**

A: Because the cost of equity is not directly observable, it must be estimated based on both quantitative and qualitative information. When faced with the task of estimating the cost of equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed. Several models have been developed to estimate the cost of equity, and I use multiple approaches to estimate the cost of equity. As a practical matter, all the models available for estimating the cost of equity are subject to limiting assumptions or other methodological constraints. Consequently, many well-regarded finance texts recommend using multiple approaches when estimating the cost of equity. For example, Copeland, Koller, and Murrin[31] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[32] recommend the CAPM, DCF, and Bond Yield Plus Risk Premium approaches.

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[31] Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd Ed. (New York: McKinsey & Company, Inc., 2000), at 214.

[32] Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed. (Orlando: Dryden Press, 1994), at 341.

Further, the recent changes in market conditions discussed previously highlight the benefit of using multiple models since each model relies on different assumptions, certain of which better reflect current and projected market conditions at different times. For example, the CAPM, ECAPM, and BYRP analyses rely directly on interest rates as an assumption in the models and therefore may more directly reflect the market conditions expected when the Company's rates are in effect. Accordingly, it is important to use multiple analytical approaches to ensure that the cost of equity results reflect market conditions that are expected during the period that the Company's rates will be in effect.

**Q: Has the Commission recognized the importance of considering the results of multiple models?**

A: Yes. For example, in 2018 the Commission stated:

> In order to set a fair rate of return for Spire, the Commission must determine the weighted cost of each component of the utility's capital structure. One component at issue in this case is the estimated cost of common equity, or the return on equity. Based on the competent and substantial evidence in the record, on its analysis of the expert testimony offered by the parties, and on its balancing of the interests of the company's ratepayers and shareholders, as fully explained in its findings of fact and conclusions of law, the Commission finds that 9.8 percent is a fair and reasonable return on equity for Spire Missouri. That rate is nearly the midpoint of all the experts' recommendations and is consistent with the national average, the growing economy, and the anticipated increasing interest rates. The Commission finds that this rate of return will allow Spire Missouri to

compete in the capital market for the funds needed to maintain its financial health.[33]

Thus, the Commission recognized the importance of considering: (1) the results of each model presented in the rate case, which included the DCF, CAPM and Risk Premium analyses; (2) capital market conditions since changes in market conditions can affect the model results and; (3) the returns awarded to comparable utilities in other jurisdictions across the United States.

## A. Constant Growth DCF Model

**Q: Please describe the DCF approach.**

A: The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

Where $P_0$ represents the current stock price, D1…D∞ are all expected future dividends, and *k* is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the following form:

$$k = \frac{D_0(1+g)}{P_0} + g \quad [2]$$

[33] In re Laclede Gas Co., No. GR-2017-0215, Report and Order at 35 (March 7, 2018).

Equation [2] is often referred to as the Constant Growth DCF model in which the first term is the expected dividend yield and the second term is the expected long-term growth rate.

**Q: What assumptions are required in the Constant Growth DCF model?**

A: The Constant Growth DCF model requires the following assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a price-to-earnings ("P/E") ratio; and (4) a discount rate greater than the expected growth rate. To the extent any of these assumptions is violated, considered judgment and/or specific adjustments should be applied to the results.

**Q: What market data did you use to calculate the dividend yield in your Constant Growth DCF model?**

A: The dividend yield in my Constant Growth DCF model was based on the proxy companies' current annual dividend and average closing stock prices over the most recent 30, 90, and 180 trading days as of May 31, 2024.

**Q: Why did you use three averaging periods for stock prices?**

A: In my Constant Growth DCF model, I use an average of recent trading days to calculate the price term ($P_0$) in the DCF model to ensure that the ROE is not skewed by anomalous events that may affect stock prices on any given trading day. The averaging period should also be reasonably representative of expected capital market conditions over the long-term.

**Q: Did you make any adjustments to the dividend yield to account for periodic growth in dividends?**

A: Yes. Because utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth rate for purposes of calculating the expected dividend yield component of the DCF model. This adjustment ensures that the expected first year dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the aggregated dividends to be paid during that time.

**Q: Why is it important to select appropriate measures of long-term growth in applying the DCF model?**

A: In its constant growth form, the DCF model (*i.e.*, Equation [2]) assumes a single long-term growth rate in perpetuity. In order to reduce the long-term growth rate to a single measure, one must assume that the dividend payout ratio remains constant and that earnings per share ("EPS"), dividends per share, and book value per share all grow at the same constant rate. However, over the long run, dividend growth can only be sustained by earnings growth, meaning earnings are the fundamental driver of a company's ability to pay dividends. Therefore, projected EPS growth is the appropriate measure of a company's long-term growth. In contrast, changes in a company's dividend payments are based on management decisions related to cash management and other factors. For example, a company may decide to retain

earnings rather than pay out a portion of those earnings to shareholders through dividends. Therefore, dividend growth rates are less likely than earnings growth rates to accurately reflect investor perceptions of a company's growth prospects. Accordingly, I have incorporated a number of sources of long-term EPS growth rates into the constant growth DCF model.

**Q: What sources of long-term growth rates did you rely on in your Constant Growth DCF model?**

A: My Constant Growth DCF model incorporated three sources of long-term growth rates: (1) consensus long-term earnings growth estimates from Zacks Investment Research ("Zacks"); (2) consensus long-term earnings growth estimates from Thomson First Call (provided by Yahoo! Finance); and (3) long-term earnings growth estimates from Value Line.

**Q: How did you calculate the expected dividend yield?**

A: I adjusted the dividend yield to reflect the growth rate that was being used in that particular scenario. This ensures that the growth rate used in the dividend yield calculation and the growth rate used as the "g" term of the DCF model are internally consistent.

**Q: How did you calculate a range of results for the Constant Growth DCF model?**

A: I calculated the low-end result for the Constant Growth DCF model using the lowest projected earnings growth rate (*i.e.*, the lowest of Thomson First Call, Zacks, and Value Line) for each of the proxy group companies. I calculated the high-end result

by using the highest projected earnings growth rate of the three sources for each proxy group company. I calculated the mean results using the mean growth rate of the three sources for each proxy group company.

**Q: Please summarize the results of your Constant Growth DCF analyses?**

A: Figure 10 (see also Schedule AEB-D2, Attachment 3) summarizes the results of my DCF analyses. As shown, when the average of the three EPS growth rates for each of the proxy group companies is utilized, the median growth rate DCF results range from 10.54 percent to 10.85 percent. When the maximum of the three EPS growth rates for each of the proxy group companies is utilized, the median DCF results range from 11.22 percent to 11.59 percent.

**FIGURE 8: SUMMARY OF CONSTANT GROWTH DCF RESULTS**

| | ***Constant Growth DCF*** | | |
|---|---|---|---|
| | Minimum Growth Rate (Median) | Average Growth Rate (Median) | Maximum Growth Rate (Median) |
| 30-Day Average | 9.93% | 10.54% | 11.22% |
| 90-Day Average | 10.14% | 10.83% | 11.44% |
| 180-Day Average | 10.14% | 10.85% | 11.59% |
| Constant Growth Average | 10.07% | 10.74% | 11.41% |

**Q: What are your conclusions about the results of the Constant Growth DCF model?**

A: As discussed previously, one primary assumption of the DCF model is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. Since utility stocks are expected to underperform the broader market over the near-

term as interest rates increase, it is important to consider the results of the DCF model with caution because the DCF model tends to understate the cost of equity in rising interest rate and higher inflationary environments, which, as discussed previously, currently exist. Therefore, while I have given weight to the results of the Constant Growth DCF model, my recommendation also gives weight to the results of other ROE estimation models.

## B. CAPM and Empirical CAPM

**Q: Please briefly describe the CAPM.**

A: The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable or "systematic" risk of that security. This second component is the product of the market risk premium and the beta coefficient, which measures the relative riskiness of the security being evaluated.

The CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \quad [3]$$

Where:

$K_e$ = the required market ROE;

$\beta$ = beta coefficient of an individual security;

$r_f$ = the risk-free ROR; and

$r_m$ = the required return on the market as a whole.

In this specification, the term ($r_m - r_f$) represents the market risk premium. According to the theory underlying the CAPM, since unsystematic risk can be diversified away, investors should only be concerned with systematic or non-diversifiable risk. Non-diversifiable risk is measured by beta, which is defined as:

$$\beta = \frac{Covariance(r_e, r_m)}{Variance(r_m)} \quad [4]$$

The variance of the market return (*i.e.*, *Variance* ($r_m$)) is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the general market (*i.e.*, *Covariance* ($r_e$, $r_m$)) reflects the extent to which the return on that security will respond to a given change in the general market return. Thus, beta represents the risk of the security relative to the general market.

**Q: What risk-free rate did you use in your CAPM analysis?**

A: In my CAPM analysis, I utilized three estimates of the risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds, which is 4.66 percent;[34] (2)

[34] Bloomberg Professional, as of May 31, 2024.

the projected 30-year U.S. Treasury bond yield for Q3 2024 through Q3 2025 (*i.e.*, 4.40 percent);[35] and (3) the projected 30-year U.S. Treasury bond yield for 2025 through 2029 (*i.e.*, 4.30 percent).[36]

**Q: What beta coefficients did you use in your CAPM analysis?**

A: As shown in Schedule AEB-D2, Attachment 4, I used the average beta coefficients for the proxy group companies as reported by Bloomberg and Value Line. The beta coefficients reported by Bloomberg are based on ten years of weekly returns relative to the S&P 500 Index. The beta coefficients reported by Value Line are based on five years of weekly returns relative to the New York Stock Exchange Composite Index. As shown in Schedule AEB-D2, Attachment 5, I also considered an additional CAPM analysis that relies on the long-term average utility beta coefficient for the companies in the proxy group, which is calculated as an average of the beta coefficients reported by Value Line from 2013 through 2023.

**Q: How did you estimate the market risk premium in the CAPM?**

A: I estimated the market risk premium as the difference between the implied expected equity market return and the risk-free rate. The expected market return on the S&P 500 Index is calculated using the Constant Growth DCF model discussed earlier in my testimony for the companies in the S&P 500 Index for which dividend yields and Value Line long-term earnings projections are available. As shown in Schedule

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[35] Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 2.

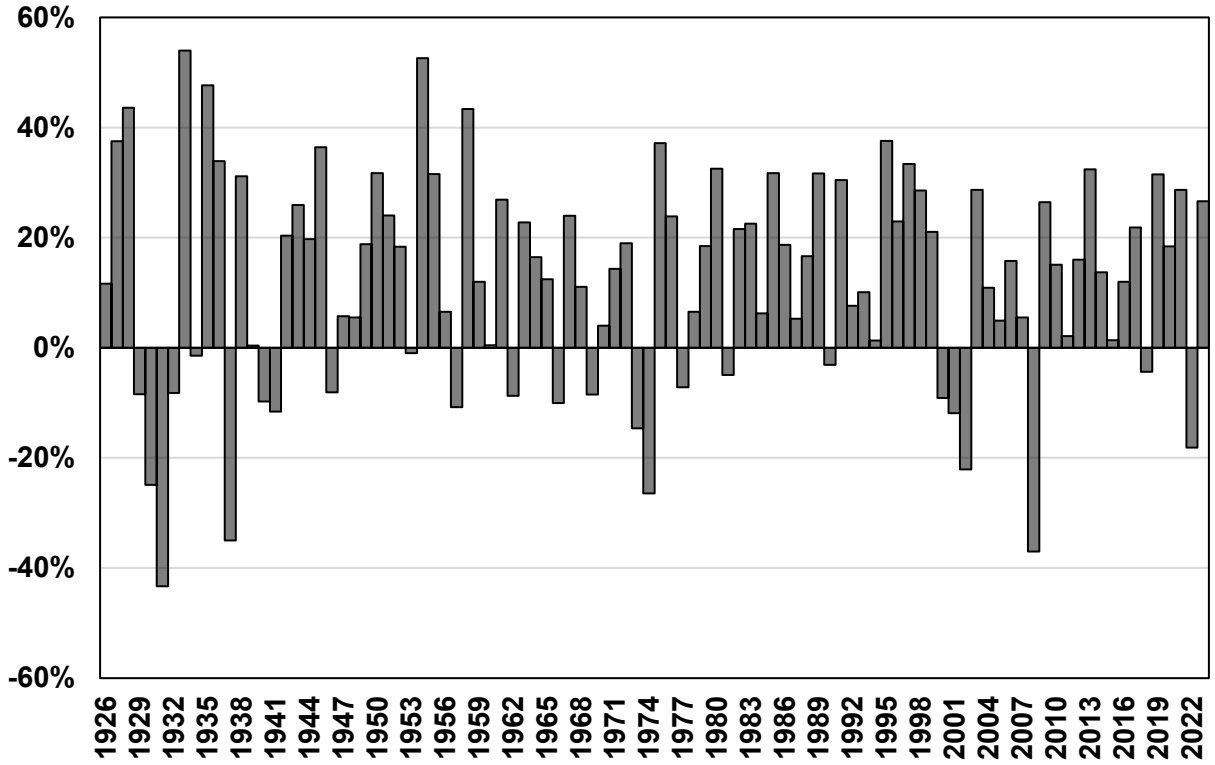
[36] Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 14.

AEB-D2, Attachment 6, based on an estimated market capitalization-weighted dividend yield of 1.60 percent and a weighted long-term growth rate of 10.83 percent, the estimated required market return for the S&P 500 Index is 12.51 percent. The implied market risk premium over the risk-free rates (*i.e.*, the current, near-term projected and longer-term projected 30-year U.S. Treasury bond yield) ranges from 7.86 percent to 8.21 percent.

**Q: How does the current expected market return compare to observed historical returns?**

A: Given the range of annual equity returns that have been observed over the past century as shown in Figure 11, a current expected equity return of 12.51 percent is not unreasonable. In 54 out of the past 98 years (or roughly 56 percent of observations), the realized equity return was at least 12.51 percent.

**FIGURE 9: REALIZED U.S. EQUITY MARKET RETURNS (1926-2022)**[37]




**Q: Did you consider another form of the CAPM in your analysis?**

A: Yes. I have also considered the results of an ECAPM in estimating the cost of equity for the Company.[38] The ECAPM calculates the product of the adjusted beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium, without any effect from the beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

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[37] Depicts total annual returns on large company stocks, as reported in the 2022 Duff & Phelps SBBI Yearbook; Kroll Cost of Capital Navigator.

[38] *See e.g.*, Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 189.

$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [5]$$

Where:

$k_e$ = the required market ROE

$\beta$ = Adjusted beta coefficient of an individual security

$r_f$ = the risk-free rate of return

$r_m$ = the required return on the market as a whole

The ECAPM addresses the tendency of the "traditional" CAPM to underestimate the cost of equity for companies with beta coefficients less than 1.00 such as regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted betas reflected in the analysis, but rather recognizes the results of academic research indicating that the risk-return relationship is different (in essence, flatter) than estimated by the CAPM, and that the CAPM underestimates the "alpha," or the constant return term.[39]

The ECAPM analysis relies on the same inputs as used in the CAPM (*i.e.*, the current, near-term and longer-term yields on the 30-year Treasury bond as the risk-free rate; the forward-looking market risk premium estimates; and the Bloomberg, Value Line and long-term average beta coefficients).

**Q: What are the results of your CAPM and ECAPM analyses?**

[39] *Id.*, at 191.

A: Figure 12 (and also Schedule AEB-D2, Attachment 4) presents the range of the results produced by the CAPM and ECAPM analyses. As shown, the traditional CAPM analysis produces a range of returns from 10.59 percent to 12.05 percent. The ECAPM analysis results range from 11.07 percent to 12.17 percent.

**FIGURE 10: SUMMARY OF CAPM / ECAPM RESULTS**

| | Current 30-day Average Treasury Bond Yield | Near-Term Blue Chip Forecast Yield | Long-Term Blue Chip Forecast Yield |
|---|---|---|---|
| | ***CAPM*** | | |
| Value Line Beta | 12.05% | 12.04% | 12.03% |
| Bloomberg Beta | 10.93% | 10.88% | 10.86% |
| Long-term Avg. Beta | 10.67% | 10.61% | 10.59% |
| | ***ECAPM*** | | |
| Value Line Beta | 12.17% | 12.16% | 12.15% |
| Bloomberg Beta | 11.33% | 11.29% | 11.27% |
| Long-term Avg. Beta | 11.13% | 11.09% | 11.07% |

## C. Bond Yield Plus Risk Premium Analysis

**Q: Please describe the Bond Yield Plus Risk Premium analysis?**

A: In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as a bondholder. That is, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. In my analysis, I used actual authorized returns for electric utility companies as the historical measure of the cost of equity to determine the risk premium.

**Q: Are there other considerations that should be addressed in conducting this analysis?**

A: Yes. It is important to recognize both academic literature and market evidence indicating that the equity risk premium (as used in this approach) is inversely related to the level of interest rates. That is, as interest rates increase (decrease), the equity risk premium decreases (increases). Consequently, it is important to develop an analysis that: (1) reflects the inverse relationship between interest rates and the equity risk premium; and (2) relies on recent and expected market conditions. Such an analysis can be developed based on a regression of the risk premium as a function of U.S. Treasury bond yields. If we let authorized ROEs for electric utilities serve as the measure of required equity returns and define the yield on the long-term U.S. Treasury bond as the relevant measure of interest rates, the risk premium simply would be the difference between those two points.[40]

**Q: Is the Bond Yield Plus Risk Premium analysis relevant to investors?**

A: Yes. Investors are aware of ROE awards in other jurisdictions, and they consider those awards as a benchmark for a reasonable level of equity returns for utilities of comparable risk operating in other jurisdictions. Because my Bond Yield Plus Risk Premium analysis is based on authorized ROEs for utility companies relative to

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[40] *See e.g.*, S. Keith Berry, *Interest Rate Risk and Utility Risk Premia during 1982-93*, Managerial and Decision Economics, Vol. 19, No. 2 (March, 1998), in which the author used a methodology similar to the regression approach described below, including using allowed ROEs as the relevant data source, and came to similar conclusions regarding the inverse relationship between risk premia and interest rates. *See also* Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return*, Financial Management, Spring 1986, at 66.

corresponding Treasury yields, it provides relevant information to assess the return expectations of investors.

**Q: Did you conduct an analysis of the relationship between equity risk premia and interest rates?**

A: Yes. As shown in Figure 13, from 1980 through May 2024, there was a strong negative relationship between risk premia and interest rates. To estimate that relationship, I conducted a regression analysis using the following equation:

$$RP = a + b(T) \qquad [6]$$

Where:

RP = Risk Premium (difference between allowed ROEs and the yield on 30-year U.S. Treasury bonds)

a = intercept term

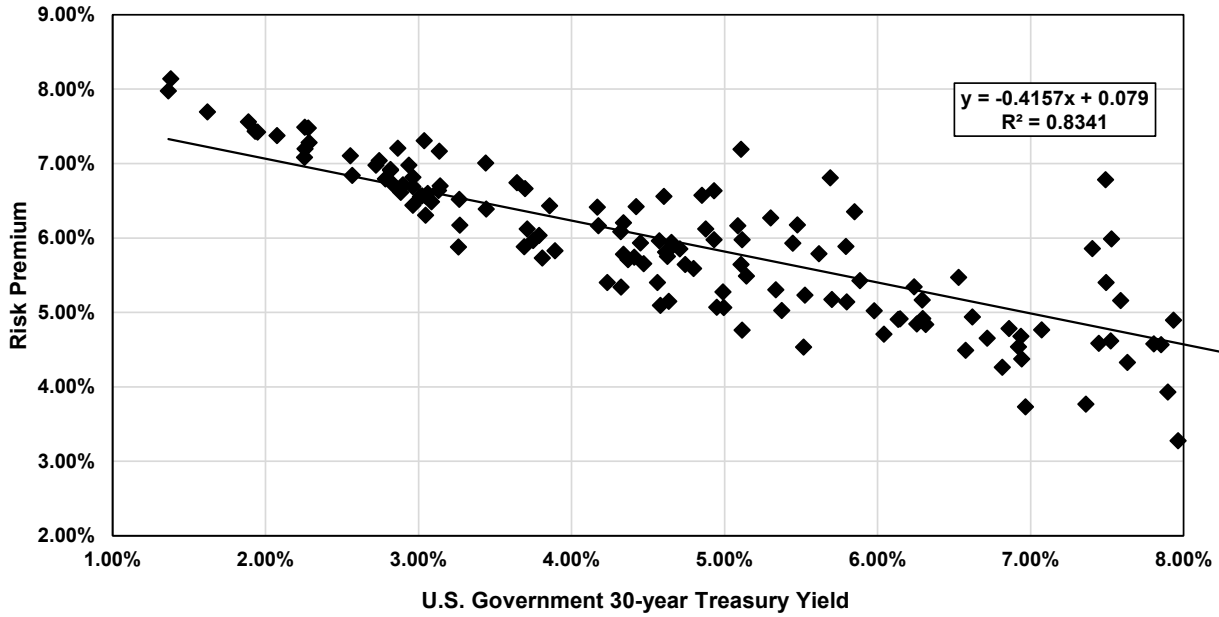
b = slope term

T = 30-year U.S. Treasury bond yield

Data regarding allowed ROEs were derived from vertically integrated electric utility rate cases from 1992 through May 2024 as reported by Regulatory Research Associates ("RRA").[41] This equation's coefficients were statistically significant at the 99.00 percent level.

[41] Authorized ROE results from limited issue rider cases, transmission-only cases, distribution cases, and cases that were silent with respect to the authorized ROE are excluded from this analysis.

**FIGURE 11: RELATIONSHIP OF RISK PREMIA AND INTEREST RATES**




**Q: Based on the relationship between equity risk premia and interest rates, what are the results of your Bond Yield Plus Risk Premium analysis?**

A: Figure 14 presents (*see also* Schedule AEB-D2, Attachment 7), the results of my Bond Yield Plus Risk Premium analysis based on the current and projected interest rates used in my CAPM and ECAPM analyses: (1) the current 30-day average yield on 30-year U.S. Treasury bonds; (2) the near-term projected 30-year U.S. Treasury bond yield; and (3) the long-term projected 30-year U.S. Treasury bond yield.

**FIGURE 12: BOND YIELD PLUS RISK PREMIUM RESULTS**

| | *Bond Yield Plus Risk Premium* | | |
|---|---|---|---|
| | Current 30-day Average Treasury Bond Yield | Near-Term Blue Chip Forecast Yield | Long-Term Blue Chip Forecast Yield |
| Risk Premium Results | 10.62% | 10.47% | 10.41% |

**Q: How did the results of the Bond Yield Plus Risk Premium inform your recommended ROE for the Company?**

A: I have considered the results of the Bond Yield Plus Risk Premium analysis in setting my recommended ROE in this proceeding. As noted, investors consider the ROE determination by a regulator when assessing the risk of that company as compared to utilities of comparable risk operating in other jurisdictions. The risk premium analysis takes into account this comparison by estimating the return expectations of investors based on the current and past ROE awards of electric utilities across the U.S.

# XII. REGULATORY AND BUSINESS RISKS

**Q: Do the DCF, CAPM, and ECAPM results for the proxy group, taken alone, provide an appropriate estimate of the cost of equity for the Company?**

A: No. These results provide only a range of the appropriate estimate of the Company's cost of equity. There are several additional factors that must be taken into consideration when determining where the Company's cost of equity falls within the range of results. These factors, which are discussed below, should be considered with respect to their overall effect on the Company's risk profile.

## Capital Expenditures

**Q: Please summarize the Company's capital expenditure requirements.**

A: The Company currently plans to invest approximately $12.3 billion in capital expenditures from 2025 through 2028, including transmission, distribution, grid modernization, and generation-related investments related to the Company's Smart Energy Plan.[42]

**Q: How is the Company's risk profile affected by its substantial capital expenditure requirements?**

A: As with any utility faced with substantial capital expenditure requirements, the Company's risk profile may be adversely affected in two significant and related ways: (1) the heightened level of investment increases the risk of under-recovery or delayed recovery of the invested capital; and (2) an inadequate return would put downward pressure on key credit metrics.

**Q: Do credit rating agencies recognize the risks associated with elevated levels of capital expenditures?**

A: Yes. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and, therefore, credit ratings. To that point, S&P explains the importance of regulatory support for a significant amount of capital projects:

> When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our

[42] Ameren Corporation, SEC Form 10-K, December 31, 2023, at 39.

> analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were extraordinary measures for use in unusual circumstances, but when construction costs are rising, cash flow support could be crucial to maintain credit quality through the spending program. Even more favorable are those jurisdictions that present an opportunity for a higher return on capital projects as an incentive to investors.[43]

Recently, S&P evaluated the capital expenditure trends in the utility sector, noting that the balance between operating with negative discretionary cash flow from operations offset by reliable access to capital markets for financing may be tested through ever-increasing capital expenditure requirements as a result of the transformation of the energy sector through the focus on low/no carbon generation, electrification, and the replacement of aging infrastructure:

> Some companies have been unable to support financial metrics consistent with former ratings as their discretionary cash flow deteriorated. This trend was a significant contributor to the sector seeing the median rating decline to 'BBB+' from 'A-' for the first time in 2022. What is less clear is whether or not management teams will take steps to forestall another step down in credit quality as high capital outlays persist. So far in 2023, we have not seen evidence that equity issuance is keeping pace with debt issuance to fill ever-deepening discretionary cash flow shortfalls, but time will tell.

[43] S&P Global Ratings, “Assessing U.S. Investor-Owned Utility Regulatory Environments,” August 10, 2016, at 7.

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> Despite the improvement in the economic outlook, we expect inflation, high interest rates, higher capital spending, and the strategic decision by many companies to operate with only minimal financial cushion from their downgrade thresholds to continue to pressure the industry's credit quality. We are cautious about the durability of the current stable ratings outlook given persistently high capital spending that now supports a trend of deterioration in discretionary cash flow. Without a commensurate focus on balance sheet preservation through equity support of discretionary cash flow deficits, limited financial cushions could give rise to another round of negative rating actions. The question then comes back to management priorities and financial policy decisions, or utilities may be faced with another step down in the median ratings. [44]

Therefore, to the extent that Ameren Missouri's rates do not continue to permit the recovery its capital investments on a regular basis, the Company would face increased recovery risk and thus increased pressure on its credit metrics.

**Q: Does Ameren Missouri have cost recovery mechanisms in place to recover the costs associated with its capital expenditures plan between rate cases?**

A: Yes. Ameren Missouri has implemented Plant-In-Service Accounting ("PISA"), which was established in 2018 through Senate Bill 564 and amended by Senate Bill 745 in 2022. PISA provides for the deferral of 85 percent of the depreciation and return on a portion of electric utility capital investment between rate cases. Specifically, Senate Bill 564, as amended by Senate Bill 745, provides that utilities who elect to use PISA shall:

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[44] S&P Global Ratings, "Record CapEx Fuels Growth Along With Credit Risk For North American Investor-Owned Utilities," September 12, 2023, at 5, 7-8.

> [D]efer to a regulatory asset eighty-five percent of all depreciation expense and return associated with all qualifying electric plant recorded to plant-in-service on the utility's books… In each general rate proceeding concluded after the effective date of this section, the balance of the regulatory asset as of the rate base cutoff date shall be included in the electrical corporation's rate base without any offset, reduction, or adjustment based upon consideration of any other factor...[45]

Thus, the PISA permits Ameren Missouri to defer and recover 85 percent of the depreciation expense and earn a return at the applicable WACC on investments in certain property, plant, and equipment placed in service, and not included in base rates. The regulatory asset for accumulated PISA deferrals also earns a return at the applicable WACC, with all approved PISA deferrals added to rate base prospectively and recovered over a period of 20 years following a regulatory rate review.

**Q: Is PISA limited in any respects?**

A: Yes. The amended statute governing PISA has an expiration date on the deferrals of December 31, 2028, after which time regulatory approval for continuance through December 31, 2033 is required, and even if extended, the mechanism is set to permanently expire at the end of 2033. While the PISA mitigates some regulatory lag, there are caps on the impact to rate and revenue requirement that limit the recovery thorugh the PISA. The PISA is capped based on an increase in revenue requirement. The revenue requirement impact cap provides for PISA investment

[45] Senate Bill No. 564, General Assembly of the State of Missouri 2018, as amended by SB 745, General Assembly of the State of Missouri 2022.

equal to 2.50 percent annually between rate reviews (*i.e.,* if there are two years between rate reviews the impact of the PISA deferrals are capped at 5 percent). Finally, the PISA is limited in the types of investments that can be recovered. Specifically, PISA excludes the recovery of new natural gas-fired generation and capital investment related to new business. The Company's capital investment plan includes significant investment in natural gas-fired generation that would not be recoverable through this mechanism.

**Q: Does the Company have any other cost recovery mechanisms?**

A: Yes. The Company also has the Renewable Energy Standard Rate Adjustment Mechanism ("RESRAM"). The RESRAM enables the Company to recover between rate cases the costs relating to compliance with Missouri's renewable energy standard, including investments in wind generation and other renewables.[46] Under the RESRAM, the Company can earn a return at the applicable weighted average cost of capital on those investments not already recovered elsewhere from customers, subject to Commission prudence reviews. RESRAM regulatory assets earn a carrying cost at short-term interest rates.[47] Additionally, under the RESRAM, Ameren Missouri is permitted to recover the 15% of depreciation expense and return

[46] Missouri Statute Section 393.1030.2(4).

[47] Ameren Corporation, SEC Form 10-K, December 31, 2023, at 3.

not deferred and recovered under the PISA mechanism for RESRAM eligible investments.[48]

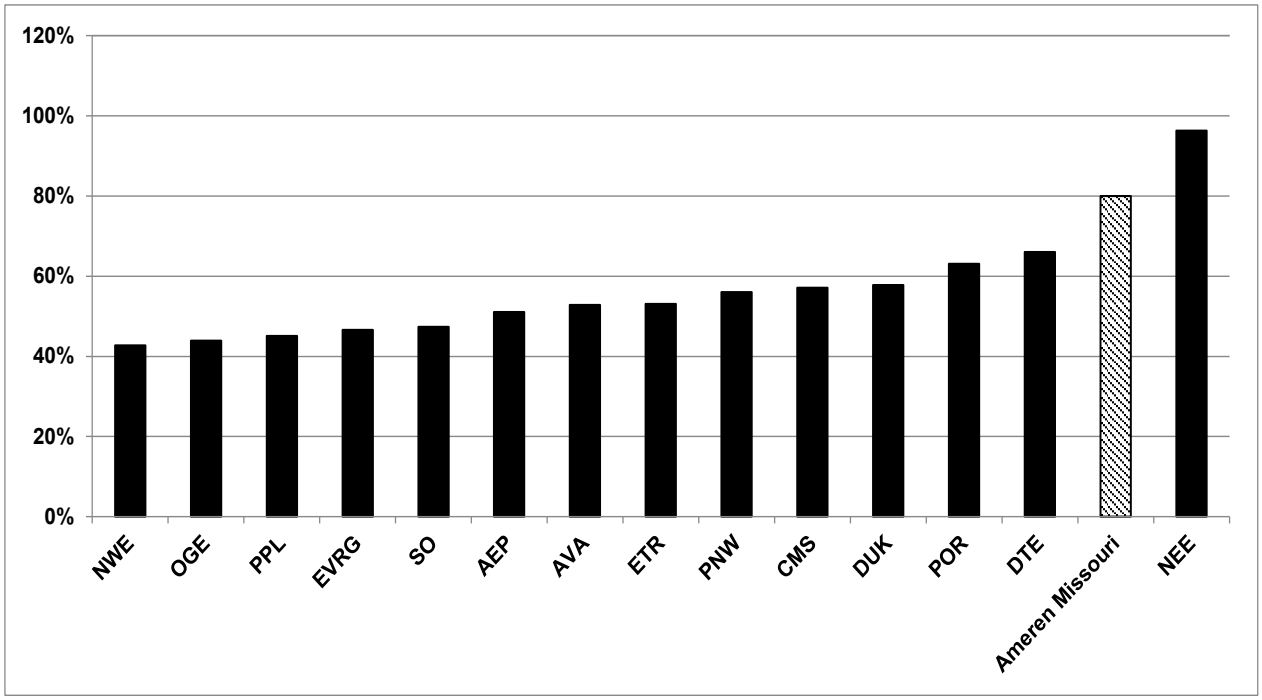
**Q: Have you compared Ameren Missouri's capital investment to the proxy group companies?**

A: Yes. As shown in Figure 13 and Schedule AEB-D2, Attachment 8, I have calculated the ratio of expected capital expenditures to net utility plant for Ameren Missouri and each of the companies in the proxy group by dividing each company's projected capital expenditures for the period from 2025 through 2029 by its total net utility plant as of December 31, 2023. As shown in Schedule AEB-8 (*see also* Figure 12 below), Ameren Missouri's ratio of capital expenditures as a percentage of net utility plant is

[48] *Id.*, at 106-107.

1.51 times the median for the proxy group companies of 52.95 percent, which is significantly higher when compared to the proxy group companies.

**FIGURE 13: COMPARISON OF CAPITAL EXPENDITURES- PROXY GROUP COMPANIES**




**Q: How does Ameren Missouri's capital cost recovery compare to the operating subsidiaries of the proxy group companies?**

A: As shown in Schedule AEB-D2 Attachment 9, there are a number of cost recovery mechanisms in place for the operating subsidiaries of the proxy group companies, including forecasted test years, year-end rate base convention, revenue decoupling, formula-based rates, straight-fixed variable rate design, and capital cost recovery mechanisms and/or the opportunity for construction work in progress ("CWIP") in rate base. Approximately 55 percent of the operating subsidiaries of the proxy group companies recover costs through some form of capital tracking mechanism. Ameren

Missouri does not have many of these mechanisms, and Missouri law prohibits CWIP in rate base.[49] Further, while Ameren Missouri is limited from earning a return on CWIP by Missouri statutes, which can reduce regulatory lag, the opportunity to earn a return on CWIP is available for 82% of the operating subsidiaries of the proxy group companies.

**Q: Is regulatory lag eliminated by the PISA and RESRAM mechanisms?**

A: No, not entirely. As noted, PISA is applied to only 85 percent of the depreciation and return for certain qualified investments. In addition, while PISA does allow deferral of depreciation and return on 85 percent of the eligible investment, the utility's net income is negatively impacted between rate cases because the equity portion of that return cannot be included in the utility's reported earnings. Moreover, the return associated with the remaining 15 percent of investment not included in the PISA recovery mechanism and not otherwise recovered through the RESRAM, is foregone until rates are reset in the next rate proceeding. Further, while PISA provides a process for including new projects in rate base, PISA does not provide the ability to put CWIP into rate base. Rather, PISA only provides a process for placing completed projects into rate base. Therefore, this mechanism does not provide earnings and cash flow relief similar to other jurisdictions where CWIP can be placed into rate base.

[49] S&P Capital IQ Pro, Commission Profiles, Missouri.

**Q: Have credit rating agencies commented the Company's ability to recover capital expenditures?**

A: Yes. In a recent credit opinion on the Company, Moody's noted that the Company's capital expenditure plan remains elevated as the Company invests to reduce its carbon footprint in response to SB 564. While Moody's generally views capital cost recovery mechanisms as credit positive, it noted that the PISA is only partially favorable because of the restrictions established as part of this mechanism.

> Under PISA, Union Electric can track depreciation and return on investment for plant placed in service between rate cases and apply for recovery in a future rate case proceeding. We generally view capital strackers as credit positive, but in the case of the PISA, it is only partially favorable because of its restrictive elements. The PISA permits the company to book depreciation cost and rate base-like return as regulatory assets, a credit positive, but only at 85% of the value. In addition, the law stipulates that the utility must recover the regulatory asset over a 20-year period, which is rather long, although the unamortized regulatory asset balance does earn a rate base-like return.
>
> The most important restriction is that, as a condition for electing to use the PISA mechanism, the coampny must operate under a rate cap. This rate cap, effective 1 January 2024, restricts the annual increase in the electric service revenue requirement from PISA deferrals to 2.5%. The rate cap has the potential to limit recovery of capital investments if the company has unexpected capital spending increases.[50]

Similarly, S&P noted that generation replacement and transmission and distribution investment are the majority of the Company's capital investment over the next few years and noted that there are greater credit risks for Ameren Missouri due to the historical test period, "exposing the company to the risk of disallowance after capital

[50] Moody's Ratings, Credit Opinion, Union Electric Company, May 13, 2024.

spending is already incurred." S&P also noted that the Certificate of Convenience and Necessity and preapproval process for generation asset investments should reduce some disallowance risk.[51]

**Q: What are your conclusions regarding the effect of the Company's capital spending requirements on its risk profile and cost of capital?**

A: The Company's capital expenditure requirements are significant and will continue at least through 2026. Additionally, while Ameren Missouri has the PISA and RESRAM mechanisms to recover a portion of qualifying capital costs, the mechanisms do not provide for timely recovery of all of Ameren Missouri's capital expenditures. Considering a number of the operating subsidiaries of the proxy group have a capital tracking mechanism and/or are able to include CWIP in rate base, in comparison, the Company lacks a comprehensive forward-looking mechanism or set of mechanisms, such as including CWIP in rate base, that would remedy the regulatory lag it faces. As a result, the Company has relatively greater risk of timely cost recovery and earnings potential as compared to the proxy group companies.

## Regulatory Risk

**Q: How does the regulatory environment affect investors' risk assessments?**

A: The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have the opportunity to recover the return of, and the market-

[51] S&P Global Ratings, Ratings Direct, Union Electric Co. d/b/a Ameren Missouri, March 20, 2024, at 2.

required return on, invested capital. Regulatory authorities recognize that because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms; doing so balances the long-term interests of investors and customers. The Company is no exception. Ameren Missouri must finance its operations and requires the opportunity to earn a reasonable return on its invested capital to maintain its financial profile. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' risk assessments.

From the perspective of debt investors, the authorized return should enable the Company to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its system, and maintain the necessary levels of liquidity to fund unexpected events. This financial liquidity must be derived not only from internally generated funds, but also by efficient access to capital markets. Moreover, because fixed income investors have many investment alternatives, even within a given market sector, the Company's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

Equity investors, on the other hand, require that the authorized return be adequate to provide a risk-comparable return on the equity portion of the Company's capital investments. Because equity investors are the residual claimants on the Company's cash flows (which is to say that the equity return is subordinate to debt repayment),

they are particularly concerned with the strength of regulatory support and its effect on future earnings and cash flows.

**Q: How do credit rating agencies consider regulatory risk in establishing a company's credit rating?**

A: Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity, and key financial metrics. Of these criteria, regulatory framework, and the ability to recover costs and earn returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.[52]

S&P also identifies the regulatory framework as an important factor in credit ratings for regulated utilities, stating: "One significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions in which a utility operates."[53] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated utilities: (1)

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[52] Moody's Investors Service, Inc., Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 4.

[53] Standard & Poor's Global Ratings, Ratings Direct, U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others, June 25, 2018, at 2.

regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[54]

**Q: How does the regulatory environment in which a utility operates affect its access to and cost of capital?**

A: The regulatory environment can significantly affect both the access to and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations."[55] Moody's further highlights the relevance of a stable and predictable regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation."[56]

**Q: Have you evaluated the regulatory framework in Missouri relative to the jurisdictions in which the operating companies of the proxy group members operate?**

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[54] *Id*., at 1.

[55] Moody's Investors Service, Inc., Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 6.

[56] *Id*.

A: Yes. I have evaluated the regulatory framework in Missouri on four factors that are important in terms of providing a regulated utility an opportunity to earn its authorized ROE. These are: (1) test year convention (*i.e.*, forecast vs. historical test year); (2) method for determining rate base (*i.e.*, average vs. year-end); (3) use of revenue decoupling mechanisms or other tools to mitigate volumetric risk; and (4) prevalence of capital cost recovery between rate cases.

**Q: What are the results of your analysis?**

A: The results of my regulatory risk assessment are summarized as follows, and the details are shown in Schedule AEB-D2, Attachment 9. Specifically:

*Test Year Convention*: Ameren Missouri uses a historical test year with limited "known and measurable" changes through a true-up period.[55] By contrast, 48 percent of the operating companies of the proxy group provide service in jurisdictions that use a fully- or partially-forecasted test year.

*Rate Base Convention*: The Company's rate base is determined using the year-end rate base method, meaning that the rate base includes capital additions that occurred in the second half of the test year and is more reflective of net utility plant going forward. Approximately 43 percent of the companies in the proxy group are also authorized to use year-end rate base.

*Volumetric Risk*: Ameren Missouri does have partial protection against volumetric risk in Missouri through an Energy Efficiency Adjustment Charge; however, this charge only allows the Company to recover the costs associated with the impact on sales from energy efficiency and does not address other volumetric risk. By comparison, 60 percent of the operating companies in the proxy group also have some form of protection against volumetric risk through either revenue decoupling, formula-based rates and/or straight-fixed variable rate design.

*Capital Cost Recovery*: As discussed, Ameren Missouri has capital tracking mechanisms (*i.e.*, PISA and the RESRAM for renewable energy standard compliance assets) to recover capital investment costs between rate cases. However, as discussed previously, Ameren Missouri's PISA capital cost recovery mechanism has limitations, including that it excludes new natural gas-fired generation, is applicable to only 85 percent of the investment, has a rate

cap (through 2023), and has a PISA revenue requirement impact cap starting in 2024. Similarly, approximately 68 percent of the operating companies held by the proxy group have some form of capital cost recovery mechanism in place.

*Fuel Adjustment Clause*: Ameren Missouri's fuel adjustment clause ("FAC") allows the Company to defer and recover 95 percent of the difference between the actual net energy costs and net base energy costs in rates without the need for a rate proceeding.[57] As shown in Schedule AEB-D2, Attachment 9, approximately 86 percent of the operating companies in the proxy group are allowed to directly recover the full cost of fuel and purchased power costs from customers, without either a dead band or sharing band, while only 8 percent of the companies are subject to a fuel cost recovery mechanism where the utility has the risk of over/under recovery of fuel costs similar to Ameren Missouri.

*Property Tax Rider:* Ameren Missouri's property tax rider is generally consistent with mechanisms that have been implemented in many regulatory jurisdictions that provide for changes in property taxes between rate proceedings.

**Q: Do the credit rating agencies consider these factors when assessing the overall risk of a utility?**

A: Yes. In a recent rating review of the Company, Moody's noted that "the use of historical test years in rate cases and limited interim cost recovery mechanisms continue to result in some regulatory lag"[58] and that fuel cost recovery is less than in most other regulatory jurisdictions:

> [t]he MoPSC has authorized various riders, including fuel and purchased power cost recovery mechanisms. However, the fuel adjustment clause allows for the recovery of 95% of incremental variations in prudently incurred fuel and purchased power costs, relative to standard authomatic fuel clauses available in most other jurisdictions that provide 100% recovery. Also, Missouri electric utilities have experienced regulatory lag partly due to the use of a historical test year in rate cases and low demand growth environment. The implementation of riders and csot trackers is typically legislatively

[57] Ameren Corporation, SEC Form 10-K, December 31, 2023, at 106.

[58] Moody's Investors Service, Credit Opinion, Union Electric Company, September 19, 2023.

> driven and on a case by case basis. Without legislation to allow the use of a forward test year, we expect a historical test year will continue to be used in future rate cases.[59]

**Q: Have you developed any additional analyses to evaluate the regulatory environment in Missouri as compared to the jurisdictions in which the companies in your proxy group operate?**

A: Yes. I have conducted two additional analyses to compare the regulatory framework of Missouri to the jurisdictions in which the companies in the proxy group operate. Specifically, I considered two different rankings: (1) RRA's ranking of regulatory jurisdictions; and (2) S&P's ranking of the credit supportiveness of regulatory jurisdictions.

**Q: Please explain how RRA evaluates the regulatory environment in each jurisdiction.**

A: RRA evaluates the regulatory environment from an investor perspective, considering the relative regulatory risk associated with ownership of securities issued by the companies that are regulated in each jurisdiction. RRA considers several factors that affect the regulatory process including gubernatorial, legislative and court activity, rate case decisions and other regulatory decisions, and information obtained through contact with commissioners, staff, company and government outreach.

**Q: How do you used the RRA ratings to compare the regulatory jurisdictions of the proxy companies with the Company's regulatory jurisdiction?**

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[59] *Id.*

A: RRA assigns a ranking for each regulatory jurisdiction as "Above Average," "Average" or "Below Average," and then within each of those categories, a numeric ranking from 1 to 3. Thus, there are a total of nine RRA rankings, with the rankings for each jurisdiction ranging from "Above Average/1," which is considered the most supportive, to "Below Average/3," which is the least supportive. I have applied a numeric ranking system to the RRA rankings with "Above Average/1" assigned the highest ranking (*i.e.*, a "1") and "Below Average/3" assigned the lowest ranking (*i.e.*, a "9"). As shown on Schedule AEB-D2, Attachment 10, the Missouri jurisdictional ranking is "Average / 3" (*i.e.*, a "6"), which is below the proxy group average ranking of between "Average/1" and "Average/2" (*i.e.*, a "4.5").

**Q: How did you conduct your analysis of the S&P credit supportiveness?**

A: For credit supportiveness, S&P classifies each regulatory jurisdiction into five categories that range from "Most Credit Supportive" down to "Credit Supportive." My analysis of the credit supportiveness of the regulatory jurisdictions in which the proxy companies operate as compared to the Company's regulatory jurisdiction was similar to the analysis of the RRA overall regulatory ranking discussed above. Specifically, I assigned a numerical ranking to each category, from Most Credit Supportive (*i.e.*, a "1") to Credit Supportive (*i.e.*, a "5"). As shown on Schedule AEB-D2, Attachment 11, similar to the RRA regulatory rankings discussed above, the Missouri jurisdictional classification of "Very Credit Supportive" (*i.e.*, a "3") is below the proxy group average ranking of 2.43, which would be classified between "Highly Credit Supportive" and "Very Credit Supportive" (*i.e.*, a "2.43").

**Q: Do investors consider the relative returns awarded in jurisdictions across the U.S.?**

A: Yes, they do. In fact, in a recent article from Barron's, an equity analyst from KeyBanc Capital Markets, Inc. recommended buying shares in Duke Energy as opposed to Consolidated Edison for reasons which included that the regulatory outcomes in the jurisdictions where Duke Energy operates were more favorable. Specifically, KeyBank analyst Sophie Karp noted:

> The regulatory environment is favorable in Duke's major markets: the Carolinas, Florida, and Indiana. "There's not so much of the utility bashing that goes on down there as it is in New York routinely," says KeyBanc's Karp. "So they have more constructive outcomes. They have better returns." A starting point of below-average customer bills helps. So does healthy population growth. New York has neither.[60]

**Q: Do credit rating agencies consider the authorized ROE in the overall risk assessment of a utility?**

A: Yes, they do. To the extent that the returns in a jurisdiction are lower than the returns that have been authorized more broadly, credit rating agencies will consider this in the overall risk assessment of the regulatory jurisdiction in which the company operates. It is important to consider credit ratings because they affect the overall cost of borrowing, and they act as a signal to equity investors about the risk of investing in the equity of a company. Therefore, lower credit ratings can affect both the cost of debt and equity.

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[60] Hough, Jack, "3 Electric Utility Stocks to Give Your Portfolio a Jolt," Barron's, July 26, 2021; www.barrons.com/articles/-utility-stocks-duke-energy-51627080936?mod=hp_columnists.

*Generation Ownership*

**Q: How does the business risk of vertically integrated electric utilities, which own generation, compare to the business risk of othe regulated electric transmission and distribution utilities?**

A: According to Moody's, generation ownership causes vertically-integrated electric utilities to have higher business risk than either electric transmission and distribution companies or natural gas distribution or transmission companies.[61] As a result of this higher business risk, vertically-integrated electric utilities typically require a higher ROE or percentage of equity in the capital structure than electric transmission, electric distribution, or natural gas utilities.

**Q: Are there other risk factors specific to vertically-integrated electric utilities that the credit rating agencies consider when determining the credit rating of a company that owns generation?**

A: Yes. As previously discussed, Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity and key financial metrics. Diversification, which Moody's assigns a 10.00 percent weighting in the overall assessment of a company's business risk, considers the fuel source diversity of a utility with generation:

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[61] Moody's Investors Service, "Rating Methodology: Regulated Electric and Gas Utilities," June 23, 2017, at 21-22.

> For utilities with electric generation, fuel source diversity can mitigate the impact (to the utility and to its rate-payers) of changes in commodity prices, hydrology and water flow, and environmental or other regulations affecting plant operations and economics. We have observed that utilities' regulatory environments are most likely to become unfavorable during periods of rapid rate increases (which are more important than absolute rate levels) and that fuel diversity leads to more stable rates over time.
>
> For that reason, fuel diversity can be important even if fuel and purchased power expenses are an automatic pass-through to the utility's ratepayers. Changes in environmental, safety and other regulations have caused vulnerabilities for certain technologies and fuel sources during the past five years. These vulnerabilities have varied widely in different countries and have changed over time.[62]

**Q: Is Ameren Missouri's generation portfolio currently in a state of transition?**

A: Yes. As noted by Moody's Ameren Missouri currently has a large exposure to coal-fired generation, which accounted for 54.6 percent of its 2023 energy supply, but has plans to retire all of its coal plants by 2042. This plan includes substantial renewable investment to replace lost energy.[63]

**Q: Are there risks related to the Company's generation portfolio?**

A: Yes. The planned retirements and the need to mitigate myriad risks associated with fossil-fueled generation, especially arising from environmental regulation, creates the need to build, acquire or contract new resources to meet the Company's generation and capacity needs which will require access to capital on reasonable terms. Further, to the extent that the Company does rely on market purchasesfrom the wholesale

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[62] *Id.,* at 16.

[63] Moody's Ratings, Credit Opinion, Union Electric Company, May 13, 2024, at 1.

markets, there is greater risk for the Company in the recovery of these costs through the fuel cost adjustment mechanism, which has limitations that do not exist for the majority of the proxy group companies.

Further, the Company continues to face risk related to a high concentration of generation resources in coal, even with the retirement of the Rush Island Energy Center and nuclear generation. As Moody's noted, the Company has a very high concentration of coal-fired generation assets. Further, the Callaway nuclear facility represents 24 percent of the Company's load, which is a high concentration of supply in one unit and represents increased risks and costs as a result of the embargo on Russian uranium.

**Q: What are your conclusions regarding the risk related to the Company's generation portfolio?**

A: The transition of the Company's generation portfolio has the potential to create significant financial risk without the proper regulatory support.

- The current fuel cost recovery mechanism, which does not provide for a full pass through of all fuel costs creates greater risk for the Company than the proxy group, where the majority of the companies have full recovery of fuel costs. This risk increases as the Company is more exposed to the wholesale market as it transitions its resource portfolio.
- The uncertainty related to the recovery of costs of retiring assets has the potential to create significant financial risk.

- High concentration of generation in the Callaway nuclear facility, particularly as it faces higher insurance costs and constraints on the supply of uranium increase the risks related to this generation resource.

# XIII. Conclusions

**Q: What is your conclusion regarding a fair ROE for Ameren Missouri?**

A: Figure 14 provides a summary of my analytical results for the proxy group. Based on these results, the qualitative analyses presented herein, the current and projected conditions in capital markets including the expectation for rising interest rates and increase in inflationary pressure, and the business and financial risks of Ameren Missouri compared to the proxy group, it is my view that a ROE in the range of 10.25 to 11.25 percent is reasonable, and that the Company's proposed ROE of 10.25 percent, which is below the midpoint of the range, is conservative, particularly when considering the business and financial risks discussed previously.

**FIGURE 14: SUMMARY OF ANALYTICAL RESULTS**

| | ***Constant Growth DCF*** | | |
|---|---|---|---|
| | Minimum Growth Rate (Median) | Average Growth Rate (Median) | Maximum Growth Rate (Median) |
| 30-Day Average | 9.93% | 10.54% | 11.22% |
| 90-Day Average | 10.14% | 10.83% | 11.44% |
| 180-Day Average | 10.14% | 10.85% | 11.59% |
| Constant Growth Average | 10.07% | 10.74% | 11.41% |
| | ***CAPM*** | | |
| | Current 30-day Average Treasury Bond Yield | Near-Term Blue Chip Forecast Yield | Long-Term Blue Chip Forecast Yield |
| Value Line Beta | 12.05% | 12.04% | 12.03% |
| Bloomberg Beta | 10.93% | 10.88% | 10.86% |

| | | | |
|---|---|---|---|
| Long-term Avg. Beta | 10.67% | 10.61% | 10.59% |
| | ***ECAPM*** | | |
| Value Line Beta | 12.17% | 12.16% | 12.15% |
| Bloomberg Beta | 11.33% | 11.29% | 11.27% |
| Long-term Avg. Beta | 11.13% | 11.09% | 11.07% |
| | ***Bond Yield Plus Risk Premium*** | | |
| | Current 30-day Average Treasury Bond Yield | Near-Term Blue Chip Forecast Yield | Long-Term Blue Chip Forecast Yield |
| Risk Premium Results | 10.62% | 10.47% | 10.41% |

**Q: Does this conclude your Direct Testimony?**

A: Yes.

# Ann E. Bulkley

**PRINCIPAL**

Boston 508.981.0866 Ann.Bulkley@brattle.com

With more than 25 years of experience in the energy industry, Ms. Bulkley specializes in regulatory economics for the electric and natural gas and water utility sectors, including valuation of regulated and unregulated utility assets, cost of capital, and capital structure issues.

Ms. Bulkley has extensive state and federal regulatory experience, and she has provided expert testimony on the cost of capital in nearly 100 regulatory proceedings before 32 state regulatory commissions and the Federal Energy Regulatory Commission (FERC).

In addition to her regulatory experience, Ms. Bulkley has provided valuation and appraisal services for a variety of purposes, including the sale or acquisition of utility assets, regulated ratemaking, ad valorem tax disputes, and other litigation purposes. In addition, she has experience in the areas of contract and business unit valuation, strategic alliances, market restructuring, and regulatory and litigation support.

Ms. Bulkley is a Certified General Appraiser licensed in the Commonwealth of Massachusetts and the State of New Hampshire.

Prior to joining Brattle, Ms. Bulkley was a Senior Vice President at an economic consultancy and held senior positions at several other consulting firms.

## AREAS OF EXPERTISE

- Regulatory Economics, Finance & Rates
- Regulatory Investigations & Enforcement
- Tax Controversy & Transfer Pricing
- Electricity Litigation & Regulatory Disputes
- M&A Litigation

## EDUCATION

- **Boston University**
  MA in Economics
- **Simmons College**
  BA in Economics and Finance

## PROFESSIONAL EXPERIENCE

- **The Brattle Group (2022–Present)**
  Principal
- **Concentric Energy Advisors, Inc. (2002–2021)**
  Senior Vice President
  Vice President
  Assistant Vice President
  Project Manager
- **Navigant Consulting, Inc. (1997–2002)**
  Project Manager
- **Reed Consulting Group (1995-1997)**
  Consultant- Project Manager
- **Cahners Publishing Company (1995)**
  Economist

## SELECTED CONSULTING EXPERIENCE & EXPERT TESTIMONY

### REGULATORY ANALYSIS AND RATEMAKING

Have provided a range of advisory services relating to regulatory policy analysis and many aspects of utility ratemaking, with specific services including:

- Cost of capital and return on equity testimony, cost of service and rate design analysis and testimony, development of ratemaking strategies
- Development of merchant function exit strategies

- Analysis and program development to address residual energy supply and/or provider of last resort obligations
- Stranded costs assessment and recovery
  Performance-based ratemaking analysis and design
- Many aspects of traditional utility ratemaking (e.g., rate design, rate base valuation)

### COST OF CAPITAL

Have provided expert testimony on the cost of capital and capital structure in nearly 100 regulatory proceedings before state and federal regulatory commissions in the United States.

### RATEMAKING

Have assisted several clients with analysis to support investor-owned and municipal utility clients in the preparation of rate cases. Sample engagements include:

- Assisted several investor-owned and municipal clients on cost allocation and rate design issues including the development of expert testimony supporting recommended rate alternatives.
- Worked with Canadian regulatory staff to establish filing requirements for a rate review of a newly regulated electric utility. Along with analyzing and evaluating rate application, attended hearings and conducted investigation of rate application for regulatory staff and prepared, supported, and defended recommendations for revenue requirements and rates for the company. Additionally, developed rates for gas utility for transportation program and ancillary services.

### VALUATION

Have provided valuation services to utility clients, unregulated generators, and private equity clients for a variety of purposes, including ratemaking, fair value, ad valorem tax, litigation and damages, and acquisition. Appraisal practices are consistent with the national standards established by the Uniform Standards of Professional Appraisal Practice.

Representative projects/clients have included:

- Prepared appraisals of electric utility transmission and distribution assets for ad valorem tax purposes.
- Prepared appraisals of hydroelectric generating facilities for ad valorem tax purposes.
- Conducted appraisals of fossil fuel generating facilities for ad valorem tax purposes.
- Conducted appraisals of generating assets for the purposes of unwinding sale-leaseback agreements.
- For a confidential utility client, prepared valuation of fossil and nuclear generation assets for financing purposes for regulated utility client.

- Conducted a strategic review of the acquisition of nuclear generation assets. Review included the evaluation of the operating costs of the facilities and the long-term liabilities associated with the assets including the decommissioning of the assets.
- Prepared a valuation of a portfolio of generation assets for a large energy utility to be used for strategic planning purposes. Valuation approach included an income approach, a real options analysis, and a risk analysis.
- Assisted clients in the restructuring of NUG contracts through the valuation of the underlying assets. Performed analysis to determine the option value of a plant in a competitively priced electricity market following the settlement of the NUG contract.
- Prepared market valuations of several purchase power contracts for large electric utilities in the sale of purchase power contracts. Assignment included an assessment of the regional power market, analysis of the underlying purchase power contracts, and a traditional discounted cash flow valuation approach, as well as a risk analysis. Analyzed bids from potential acquirers using income and risk analysis approached. Prepared an assessment of the credit issues and value at risk for the selling utility.
- Prepared appraisal of a portfolio of generating facilities for a large electric utility to be used for financing purposes.
- Conducted a valuation of regulated utility assets for the fair value rate base estimate used in electric rate proceedings in Indiana.
- Prepared an appraisal of a fleet of fossil generating assets for a large electric utility to establish the value of assets transferred from utility property.
- Conducted due diligence on an electric transmission and distribution system as part of a buy-side due diligence team.
- Provided analytical support and prepared testimony regarding the valuation of electric distribution system assets in five communities in a condemnation proceeding.
- Prepared feasibility reports analyzing the expected net benefits resulting from municipal ownership of investor-owned utility operations.
- Prepared independent analyses of proposal for the proposed government condemnation of the investor-owned utilities in Maine and the formation of a public power district.
- Valued purchase power agreements in the transfer of assets to a deregulated electric market.

## STRATEGIC AND FINANCIAL ADVISORY SERVICES

Have assisted several clients across North America with analytically-based strategic planning, due diligence, and financial advisory services.

Representative projects include:

- Preparation of feasibility studies for bond issuances for municipal and district steam clients.
- Assisted in the development of a generation strategy for an electric utility. Analyzed various NERC regions to identify potential market entry points. Evaluated potential competitors and alliance partners. Assisted in the development of gas and electric price forecasts. Developed a framework for the implementation of a risk management program.
- Assisted clients in identifying potential joint venture opportunities and alliance partners. Contacted interviewed and evaluated potential alliance candidates based on company-established criteria for several LDCs and marketing companies. Worked with several LDCs and unregulated marketing companies to establish alliances to enter into the retail energy market. Prepared testimony in support of several merger cases and participated in the regulatory process to obtain approval for these mergers.
- Assisted clients in several buy-side due diligence efforts, providing regulatory insight and developing valuation recommendations for acquisitions of both electric and gas properties.

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# BULKLEY TESTIMONY LISTING

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| **Arizona Corporation Commission** | | | | |
| Southwest Gas Corporation | 02/24 | Southwest Gas Corporation | Docket No. G-01551A-23-0341 | Return on Equity |
| UNS Electric | 11/22 | UNS Electric | Docket No. E-04204A-15-0251 | Return on Equity |
| Tucson Electric Power Company | 6/22 | Tucson Electric Power Company | Docket No. G-01933A-22-0107 | Return on Equity |
| Southwest Gas Corporation | 12/21 | Southwest Gas Corporation | Docket No. G-01551A-21-0368 | Return on Equity |
| Arizona Public Service Company | 10/19 | Arizona Public Service Company | Docket No. E-01345A-19-0236 | Return on Equity |
| Tucson Electric Power Company | 04/19 | Tucson Electric Power Company | Docket No. E-01933A-19-0028 | Return on Equity |
| Tucson Electric Power Company | 11/15 | Tucson Electric Power Company | Docket No. E-01933A-15-0322 | Return on Equity |
| UNS Electric | 05/15 | UNS Electric | Docket No. E-04204A-15-0142 | Return on Equity |
| UNS Electric | 12/12 | UNS Electric | Docket No. E-04204A-12-0504 | Return on Equity |
| **Arkansas Public Service Commission** | | | | |
| Oklahoma Gas and Electric Co | 10/21 | Oklahoma Gas and Electric Co | Docket No. D-18-046-FR | Return on Equity |
| Arkansas Oklahoma Gas Corporation | 10/13 | Arkansas Oklahoma Gas Corporation | Docket No. 13-078-U | Return on Equity |
| **California Public Utilities Commission** | | | | |
| PacifiCorp, d/b/a Pacific Power | 5/22 | PacifiCorp, d/b/a Pacific Power | Docket No. A-22-05-006 | Return on Equity |
| San Jose Water Company | 05/21 | San Jose Water Company | A2105004 | Return on Equity |
| **Colorado Public Utilities Commission** | | | | |

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| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| Public Service Company of Colorado | 01/24 | Public Service Company of Colorado | Docket No. 24AL-___G | Return on Equity |
| Public Service Company of Colorado | 11/22 | Public Service Company of Colorado | Docket No. 22AL-0530E | Return on Equity |
| Public Service Company of Colorado | 01/22 | Public Service Company of Colorado | Docket No. 22AL-0046G | Return on Equity |
| Public Service Company of Colorado | 07/21 | Public Service Company of Colorado | 21AL-0317E | Return on Equity |
| Public Service Company of Colorado | 02/20 | Public Service Company of Colorado | 20AL-0049G | Return on Equity |
| Public Service Company of Colorado | 05/19 | Public Service Company of Colorado | 19AL-0268E | Return on Equity |
| Public Service Company of Colorado | 01/19 | Public Service Company of Colorado | 19AL-0063ST | Return on Equity |
| Atmos Energy Corporation | 05/15 | Atmos Energy Corporation | Docket No. 15AL-0299G | Return on Equity |
| Atmos Energy Corporation | 04/14 | Atmos Energy Corporation | Docket No. 14AL-0300G | Return on Equity |
| Atmos Energy Corporation | 05/13 | Atmos Energy Corporation | Docket No. 13AL-0496G | Return on Equity |
| **Connecticut Public Utilities Regulatory Authority** | | | | |
| The Southern Connecticut Gas Company | 11/23 | The Southern Connecticut Gas Company | Docket No. 23-11-02 | Return on Equity |
| Connecticut Natural Gas Corporation | 11/23 | Connecticut Natural Gas Corporation | Docket No. 23-11-02 | Return on Equity |
| Connecticut Water Company | 10/23 | Connecticut Water Company | Docket No. 23-08-32 | Return on Equity |
| United Illuminating | 09/22 | United Illuminating | Docket No. 22-08-08 | Return on Equity |
| United Illuminating | 05/21 | United Illuminating | Docket No. 17-12-03RE11 | Return on Equity |
| Connecticut Water Company | 01/21 | Connecticut Water Company | Docket No. 20-12-30 | Return on Equity |
| Connecticut Natural Gas Corporation | 06/18 | Connecticut Natural Gas Corporation | Docket No. 18-05-16 | Return on Equity |

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| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| Yankee Gas Services Co. d/b/a Eversource Energy | 06/18 | Yankee Gas Services Co. d/b/a Eversource Energy | Docket No. 18-05-10 | Return on Equity |
| The Southern Connecticut Gas Company | 06/17 | The Southern Connecticut Gas Company | Docket No. 17-05-42 | Return on Equity |
| The United Illuminating Company | 07/16 | The United Illuminating Company | Docket No. 16-06-04 | Return on Equity |
| **Federal Energy Regulatory Commission** | | | | |
| Sea Robin Pipeline | 12/22 | Sea Robin Pipeline | Docket No. RP22-___ | Return on Equity |
| Northern Natural Gas Company | 07/22 | Northern Natural Gas Company | Docket No. RP22-___ | Return on Equity |
| Transwestern Pipeline Company, LLC | 07/22 | Transwestern Pipeline Company, LLC | Docket No. RP22-___ | Return on Equity |
| Florida Gas Transmission | 02/21 | Florida Gas Transmission | Docket No. RP21-441 | Return on Equity |
| TransCanyon | 01/21 | TransCanyon | Docket No. ER21-1065 | Return on Equity |
| Duke Energy | 12/20 | Duke Energy | Docket No. EL21-9-000 | Return on Equity |
| Wisconsin Electric Power Company | 08/20 | Wisconsin Electric Power Company | Docket No. EL20-57-000 | Return on Equity |
| Panhandle Eastern Pipe Line Company, LP | 10/19 | Panhandle Eastern Pipe Line Company, LP | Docket Nos. RP19-78-000 RP19-78-001 | Return on Equity |
| Panhandle Eastern Pipe Line Company, LP | 08/19 | Panhandle Eastern Pipe Line Company, LP | Docket Nos. RP19-1523 | Return on Equity |
| Sea Robin Pipeline Company LLC | 11/18 | Sea Robin Pipeline Company LLC | Docket# RP19-352-000 | Return on Equity |
| Tallgrass Interstate Gas Transmission | 10/15 | Tallgrass Interstate Gas Transmission | RP16-137 | Return on Equity |
| **Idaho Public Utilities Commission** | | | | |
| PacifiCorp d/b/a Rocky Mountain Power | 05/21 | PacifiCorp d/b/a Rocky Mountain Power | Case No. PAC-E-24-04 | Return on Equity |
| Intermountain Gas Co | 12/22 | Intermountain Gas Co | C-INT-G-22-07 | Return on Equity |

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| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| PacifiCorp d/b/a Rocky Mountain Power | 05/21 | PacifiCorp d/b/a Rocky Mountain Power | Case No. PAC-E-21-07 | Return on Equity |
| **Illinois Commerce Commission** | | | | |
| Illinois American Water | 01/24 | Illinois American Water | Docket No. 24-0097 | Return on Equity |
| Peoples Gas Light & Coke Company | 01/23 | Peoples Gas Light & Coke Company | D-23-0069 | Return on Equity |
| North Shore Gas Company | 01/23 | North Shore Gas Company | D-23-0068 | Return on Equity |
| Illinois American Water | 02/22 | Illinois American Water | Docket No. 22-0210 | Return on Equity |
| North Shore Gas Company | 02/21 | North Shore Gas Company | No. 20-0810 | Return on Equity |
| **Indiana Utility Regulatory Commission** | | | | |
| Ohio Valley Gas Corporation and Ohio Valley Gas, Inc. | 02/24 | Ohio Valley Gas Corporation and Ohio Valley Gas, Inc. | Cause No. 46011 | Return on Equity |
| Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South | 12/23 | Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South | IURC Cause No. 45990 | Return on Equity |
| Indiana Michigan Power Co. | 08/23 | Indiana Michigan Power Co. | IURC Cause No. 45933 | Return on Equity |
| Indiana American Water Company | 03/23 | Indiana and Michigan American Water Company | IURC Cause No. 45870 | Return on Equity |
| Indiana Michigan Power Co. | 07/21 | Indiana Michigan Power Co. | IURC Cause No. 45576 | Return on Equity |
| Indiana Gas Company Inc. | 12/20 | Indiana Gas Company Inc. | IURC Cause No. 45468 | Return on Equity |
| Southern Indiana Gas and Electric Company | 10/20 | Southern Indiana Gas and Electric Company | IURC Cause No. 45447 | Return on Equity |
| Indiana and Michigan American Water Company | 09/18 | Indiana and Michigan American Water Company | IURC Cause No. 45142 | Return on Equity |

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| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| Indianapolis Power and Light Company | 12/17 | Indianapolis Power and Light Company | Cause No. 45029 | Fair Value |
| Northern Indiana Public Service Company | 09/17 | Northern Indiana Public Service Company | Cause No. 44988 | Fair Value |
| Indianapolis Power and Light Company | 12/16 | Indianapolis Power and Light Company | Cause No.44893 | Fair Value |
| Northern Indiana Public Service Company | 10/15 | Northern Indiana Public Service Company | Cause No. 44688 | Fair Value |
| Indianapolis Power and Light Company | 09/15 | Indianapolis Power and Light Company | Cause No. 44576<br>Cause No. 44602 | Fair Value |
| Kokomo Gas and Fuel Company | 09/10 | Kokomo Gas and Fuel Company | Cause No. 43942 | Fair Value |
| Northern Indiana Fuel and Light Company, Inc. | 09/10 | Northern Indiana Fuel and Light Company, Inc. | Cause No. 43943 | Fair Value |
| **Iowa Department of Commerce Utilities Board** | | | | |
| Iowa-American Water Company | 04/24 | Iowa-American Water Company | Docket No. RPU-2024-000_ | Return on Equity |
| MidAmerican Energy Company | 06/23 | MidAmerican Energy Company | Docket No. RPU-2023-___ | Return on Equity |
| MidAmerican Energy Company | 01/22 | MidAmerican Energy Company | Docket No. RPU-2022-0001 | Return on Equity |
| Iowa-American Water Company | 08/20 | Iowa-American Water Company | Docket No. RPU-2020-0001 | Return on Equity |
| **Kansas Corporation Commission** | | | | |
| Evergy Kansas | 04/23 | Evergy Kansas | Docket No. 23-EKCE-775-RTS | Return on Equity |
| Atmos Energy Corporation | 08/15 | Atmos Energy Corporation | Docket No. 16-ATMG-079-RTS | Return on Equity |
| **Kentucky Public Service Commission** | | | | |
| Kentucky American Water Company | 06/23 | Kentucky American Water Company | Docket No. 2023-____ | Return on Equity |

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| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| Kentucky American Water Company | 11/18 | Kentucky American Water Company | Docket No. 2018-00358 | Return on Equity |
| **Maine Public Utilities Commission** | | | | |
| Central Maine Power | 08/22 | Central Maine Power | Docket No. 2022-00152 | Return on Equity |
| Central Maine Power | 10/18 | Central Maine Power | Docket No. 2018-194 | Return on Equity |
| **Maryland Public Service Commission** | | | | |
| Maryland American Water Company | 06/18 | Maryland American Water Company | Case No. 9487 | Return on Equity |
| **Massachusetts Appellate Tax Board** | | | | |
| Hopkinton LNG Corporation | 03/20 | Hopkinton LNG Corporation | Docket No. | Valuation of LNG Facility |
| FirstLight Hydro Generating Company | 06/17 | FirstLight Hydro Generating Company | Docket No. F-325471<br>Docket No. F-325472<br>Docket No. F-325473<br>Docket No. F-325474 | Valuation of Electric Generation Assets |
| **Massachusetts Department of Public Utilities** | | | | |
| Massachusetts Electric Company<br>Nantucket Electric Company<br>d/b/a National Grid | 11/23 | Massachusetts Electric Company<br>Nantucket Electric Company<br>d/b/a National Grid | DPU 23-150 | Return on Equity |
| National Grid USA | 11/20 | Boston Gas Company | DPU 20-120 | Return on Equity |
| Berkshire Gas Company | 05/18 | Berkshire Gas Company | DPU 18-40 | Return on Equity |
| Unitil Corporation | 01/04 | Fitchburg Gas and Electric | DTE 03-52 | Integrated Resource Plan; Gas Demand Forecast |
| **Michigan Public Service Commission** | | | | |
| Upper Michigan Energy Resources Corporation | 05/24 | Upper Michigan Energy Resources Corporation | Case No. U-21541 | Return on Equity |
| Michigan Gas Utilities Corporation | 03/24 | Michigan Gas Utilities Corporation | Case No. U-21540 | Return on Equity |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| Indiana Michigan Power Co. | 09/23 | Indiana Michigan Power Co. | Case No. U-21461 | Return on Equity |
| Michigan Gas Utilities Corporation | 03/23 | Michigan Gas Utilities Corporation | Case No. U-21366 | Return on Equity |
| Michigan Gas Utilities Corporation | 03/21 | Michigan Gas Utilities Corporation | Case No. U-20718 | Return on Equity |
| Wisconsin Electric Power Company | 12/11 | Wisconsin Electric Power Company | Case No. U-16830 | Return on Equity |
| **Michigan Tax Tribunal** | | | | |
| New Covert Generating Co., LLC. | 03/18 | The Township of New Covert Michigan | MTT Docket No. 000248TT and 16-001888-TT | Valuation of Electric Generation Assets |
| Covert Township | 07/14 | New Covert Generating Co., LLC. | Docket No. 399578 | Valuation of Electric Generation Assets |
| **Minnesota Public Utilities Commission** | | | | |
| ALLETE, Inc. d/b/a Minnesota Power | 11/23 | Allete, Inc. d/b/a Minnesota Power | D-E-015/GR-23-155 | Return on Equity |
| CenterPoint Energy Resources | 11/23 | CenterPoint Energy Resources | D-G-008/GR-23-173 | Return on Equity |
| Minnesota Energy Resources Corporation | 11/22 | Minnesota Energy Resources Corporation | Docket No. G011/GR-22-504 | Return on Equity |
| CenterPoint Energy Resources | 11/21 | CenterPoint Energy Resources | D-G-008/GR-21-435 | Return on Equity |
| ALLETE, Inc. d/b/a Minnesota Power | 11/21 | Allete, Inc. d/b/a Minnesota Power | D-E-015/GR-21-630 | Return on Equity |
| Otter Tail Power Company | 11/20 | Otter Tail Power Company | E017/GR-20-719 | Return on Equity |
| ALLETE, Inc. d/b/a Minnesota Power | 11/19 | Allete, Inc. d/b/a Minnesota Power | E015/GR-19-442 | Return on Equity |

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| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas | 10/19 | CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas | G-008/GR-19-524 | Return on Equity |
| Great Plains Natural Gas Co. | 09/19 | Great Plains Natural Gas Co. | Docket No. G004/GR-19-511 | Return on Equity |
| Minnesota Energy Resources Corporation | 10/17 | Minnesota Energy Resources Corporation | Docket No. G011/GR-17-563 | Return on Equity |
| **Missouri Public Service Commission** | | | | |
| Evergy Missouri West | 02/24 | Evergy Missouri West | File No. ER-2024-0189 | Return on Equity |
| Ameren Missouri | 08/22 | Ameren Missouri | File No. ER-2022-0337 | Return on Equity |
| Missouri American Water Company | 07/22 | Missouri American Water Company | Case No. WR-2022-0303<br>Case No. SR-2022-0304 | Return on Equity |
| Evergy Missouri West | 01/22 | Evergy Missouri West | File No. ER-2022-0130 | Return on Equity |
| Evergy Missouri Metro | 01/22 | Evergy Missouri Metro | File No. ER-2022-0129 | Return on Equity |
| Ameren Missouri | 03/21 | Ameren Missouri | Docket No. ER-2021-0240<br>Docket No. GR-2021-0241 | Return on Equity |
| Missouri American Water Company | 06/20 | Missouri American Water Company | Case No. WR-2020-0344<br>Case No. SR-2020-0345 | Return on Equity |
| Missouri American Water Company | 06/17 | Missouri American Water Company | Case No. WR-17-0285<br>Case No. SR-17-0286 | Return on Equity |
| **Montana Public Service Commission** | | | | |
| Montana-Dakota Utilities Co. | 11/22 | Montana-Dakota Utilities Co. | D2022.11.099 | Return on Equity |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| Montana-Dakota Utilities Co. | 06/20 | Montana-Dakota Utilities Co. | D2020.06.076 | Return on Equity |
| Montana-Dakota Utilities Co. | 09/18 | Montana-Dakota Utilities Co. | D2018.9.60 | Return on Equity |
| **Public Utilities Commission of Nevada** | | | | |
| Sierra Pacific Power Company d/b/a NV Energy | 02/24 | Sierra Pacific Power Company d/b/a NV Energy | 24-02026 | Return on Equity |
| Nevada Power Company d/b/a NV Energy | 06/23 | Nevada Power Company d/b/a NV Energy | 23-06007 | Return on Equity |
| Nevada Power Company d/b/a NV Energy | 03/23 | Nevada Power Company d/b/a NV Energy | 22-03028 | Merger benefits |
| **New Hampshire - Board of Tax and Land Appeals** | | | | |
| Liberty Utilities (EnergyNorth Natural Gas) | 07/23 | Liberty Utilities (EnergyNorth Natural Gas) | Docket No. DG 23-067 | Return on Equity |
| Liberty Utilities (Granite State Electric) | 05/23 | Liberty Utilities (Granite State Electric) | Docket No. DE 23-039 | Return on Equity |
| Public Service Company of New Hampshire d/b/a Eversource Energy | 11/19<br>12/19 | Public Service Company of New Hampshire d/b/a Eversource Energy | Master Docket No. 28873-14-15-16-17PT | Valuation of Utility Property and Generating Assets |
| **New Hampshire Public Utilities Commission** | | | | |
| Public Service Company of New Hampshire | 05/19 | Public Service Company of New Hampshire | DE-19-057 | Return on Equity |
| **New Hampshire-Merrimack County Superior Court** | | | | |
| Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE | 04/18 | Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE | 220-2012-CV-1100 | Valuation of Utility Property |
| **New Hampshire-Rockingham Superior Court** | | | | |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| Eversource Energy | 05/18 | Public Service Commission of New Hampshire | 218-2016-CV-00899<br>218-2017-CV-00917 | Valuation of Utility Property |
| **New Jersey Board of Public Utilities** | | | | |
| New Jersey American Water Company, Inc. | 02/24 | New Jersey American Water Company, Inc. | WR2401056 | Return on Equity |
| Elizabethtown Gas Company | 2/24 | Elizabethtown Gas Company | GR24020158 | Return on Equity |
| Public Service Electric and Gas Company | 12/23 | Public Service Electric and Gas Company | ER23120924<br>GR23120925 | Return on Equity |
| New Jersey American Water Company, Inc. | 01/22 | New Jersey American Water Company, Inc. | WR22010019 | Return on Equity |
| Public Service Electric and Gas Company | 10/20 | Public Service Electric and Gas Company | EO18101115 | Return on Equity |
| New Jersey American Water Company, Inc. | 12/19 | New Jersey American Water Company, Inc. | WR19121516 | Return on Equity |
| Public Service Electric and Gas Company | 04/19 | Public Service Electric and Gas Company | EO18060629<br>GO18060630 | Return on Equity |
| Public Service Electric and Gas Company | 02/18 | Public Service Electric and Gas Company | GR17070776 | Return on Equity |
| Public Service Electric and Gas Company | 01/18 | Public Service Electric and Gas Company | ER18010029<br>GR18010030 | Return on Equity |
| **New Mexico Public Regulation Commission** | | | | |
| Southwestern Public Service Company | 07/19 | Southwestern Public Service Company | 19-00170-UT | Return on Equity |
| Southwestern Public Service Company | 10/17 | Southwestern Public Service Company | Case No. 17-00255-UT | Return on Equity |
| Southwestern Public Service Company | 12/16 | Southwestern Public Service Company | Case No. 16-00269-UT | Return on Equity |
| Southwestern Public Service Company | 10/15 | Southwestern Public Service Company | Case No. 15-00296-UT | Return on Equity |
| Southwestern Public Service Company | 06/15 | Southwestern Public Service Company | Case No. 15-00139-UT | Return on Equity |

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| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| **New York State Department of Public Service** | | | | |
| Liberty Utilities (New York Water) | 5/23 | Liberty Utilities (New York Water) | Case 23-W-0235 | Return on Equity |
| New York State Electric and Gas Company<br><br>Rochester Gas and Electric | 05/22 | New York State Electric and Gas Company<br><br>Rochester Gas and Electric | 22-E-0317<br>22-G-0318<br>22-E-0319<br>22-G-0320 | Return on Equity |
| Corning Natural Gas Corporation | 07/21 | Corning Natural Gas Corporation | Case No. 21-G-0394 | Return on Equity |
| Central Hudson Gas and Electric Corporation | 08/20 | Central Hudson Gas and Electric Corporation | Electric 20-E-0428<br>Gas 20-G-0429 | Return on Equity |
| Niagara Mohawk Power Corporation | 07/20 | National Grid USA | Case No. 20-E-0380<br>20-G-0381 | Return on Equity |
| Corning Natural Gas Corporation | 02/20 | Corning Natural Gas Corporation | Case No. 20-G-0101 | Return on Equity |
| New York State Electric and Gas Company<br><br>Rochester Gas and Electric | 05/19 | New York State Electric and Gas Company<br><br>Rochester Gas and Electric | 19-E-0378<br>19-G-0379<br>19-E-0380<br>19-G-0381 | Return on Equity |
| Brooklyn Union Gas Company d/b/a National Grid NY<br>KeySpan Gas East Corporation d/b/a National Grid | 04/19 | Brooklyn Union Gas Company d/b/a National Grid NY<br>KeySpan Gas East Corporation d/b/a National Grid | 19-G-0309<br>19-G-0310 | Return on Equity |
| Central Hudson Gas and Electric Corporation | 07/17 | Central Hudson Gas and Electric Corporation | Electric 17-E-0459<br>Gas 17-G-0460 | Return on Equity |
| Niagara Mohawk Power Corporation | 04/17 | National Grid USA | Case No. 17-E-0238<br>17-G-0239 | Return on Equity |
| Corning Natural Gas Corporation | 06/16 | Corning Natural Gas Corporation | Case No. 16-G-0369 | Return on Equity |
| National Fuel Gas Company | 04/16 | National Fuel Gas Company | Case No. 16-G-0257 | Return on Equity |

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| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| KeySpan Energy Delivery | 01/16 | KeySpan Energy Delivery | Case No. 15-G-0058<br>Case No. 15-G-0059 | Return on Equity |
| New York State Electric and Gas Company<br>Rochester Gas and Electric | 05/15 | New York State Electric and Gas Company<br>Rochester Gas and Electric | Case No. 15-E-0283<br>Case No. 15-G-0284<br>Case No. 15-E-0285<br>Case No. 15-G-0286 | Return on Equity |
| **North Dakota Public Service Commission** | | | | |
| Otter Tail Power Company | 11/23 | Otter Tail Power Company | Case No. PU-23-___ | Return on Equity |
| Montana-Dakota Utilities Co. | 11/23 | Montana-Dakota Utilities Co. | Case No. PU-23-___ | Return on Equity |
| Montana-Dakota Utilities Co. | 05/22 | Montana-Dakota Utilities Co. | C-PU-22-194 | Return on Equity |
| Montana-Dakota Utilities Co. | 08/20 | Montana-Dakota Utilities Co. | C-PU-20-379 | Return on Equity |
| Northern States Power Company | 12/12 | Northern States Power Company | C-PU-12-813 | Return on Equity |
| Northern States Power Company | 12/10 | Northern States Power Company | C-PU-10-657 | Return on Equity |
| **Oklahoma Corporation Commission** | | | | |
| Oklahoma Gas & Electric | 12/23 | Oklahoma Gas & Electric | Cause No. PUD2023-000087 | Return on Equity |
| Oklahoma Gas & Electric | 12/21 | Oklahoma Gas & Electric | Cause No. PUD 202100164 | Return on Equity |
| Arkansas Oklahoma Gas Corporation | 01/13 | Arkansas Oklahoma Gas Corporation | Cause No. PUD 201200236 | Return on Equity |
| **Oregon Public Service Commission** | | | | |
| PacifiCorp d/b/a Pacific Power & Light | 02/24 | PacifiCorp d/b/a Pacific Power & Light | Docket No. UE-433 | Return on Equity |
| PacifiCorp d/b/a Pacific Power & Light | 03/22 | PacifiCorp d/b/a Pacific Power & Light | Docket No. UE-399 | Return on Equity |
| PacifiCorp d/b/a Pacific Power & Light | 02/20 | PacifiCorp d/b/a Pacific Power & Light | Docket No. UE-374 | Return on Equity |

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| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| **Pennsylvania Public Utility Commission** | | | | |
| American Water Works Company Inc. | 11/23 | Pennsylvania-American Water Company | Docket No. R-2023-3043189 (water) Docket No. R-2023-3043190 (wastewater) | Return on Equity |
| American Water Works Company Inc. | 04/22 | Pennsylvania-American Water Company | Docket No. R-2020-3031672 (water) Docket No. R-2020-3031673 (wastewater) | Return on Equity |
| American Water Works Company Inc. | 04/20 | Pennsylvania-American Water Company | Docket No. R-2020-3019369 (water) Docket No. R-2020-3019371 (wastewater) | Return on Equity |
| American Water Works Company Inc. | 04/17 | Pennsylvania-American Water Company | Docket No. R-2017-2595853 | Return on Equity |
| **South Dakota Public Utilities Commission** | | | | |
| MidAmerican Energy Company | 05/22 | MidAmerican Energy Company | D-NG22-005 | Return on Equity |
| Northern States Power Company | 06/14 | Northern States Power Company | Docket No. EL14-058 | Return on Equity |
| **Texas Public Utility Commission** | | | | |
| CenterPoint Energy Houston | 03/24 | CenterPoint Energy Houston | D-56211 | Return on Equity |
| AEP Texas | 02/24 | AEP Texas | D-56165 | Return on Equity |
| Entergy Texas, Inc. | 07/22 | Entergy Texas, Inc. | D-53719 | Return on Equity |
| Southwestern Public Service Commission | 08/19 | Southwestern Public Service Commission | Docket No. D-49831 | Return on Equity |
| Southwestern Public Service Company | 01/14 | Southwestern Public Service Company | Docket No. 42004 | Return on Equity |
| **Texas Railroad Commission** | | | | |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| CenterPoint Energy Entex and CenterPoint Energy Texas Gas | 10/23 | CenterPoint Energy Entex and CenterPoint Energy Texas Gas | 2023 Texas Division Rate Case Case No. OS-23-00015513 | Return on Equity |
| **Utah Public Service Commission** | | | | |
| PacifiCorp d/b/a Rocky Mountain Power | 05/20 | PacifiCorp d/b/a Rocky Mountain Power | Docket No. 20-035-04 | Return on Equity |
| **Virginia State Corporation Commission** | | | | |
| Virginia American Water Company, Inc. | 11/23 | Virginia American Water Company, Inc. | Docket No. PUR-2023-00194 | Return on Equity |
| Virginia American Water Company, Inc. | 11/21 | Virginia American Water Company, Inc. | Docket No. PUR-2021-00255 | Return on Equity |
| Virginia American Water Company, Inc. | 11/18 | Virginia American Water Company, Inc. | Docket No. PUR-2018-00175 | Return on Equity |
| **Washington Utilities Transportation Commission** | | | | |
| Cascade Natural Gas Corporation | 03/24 | Cascade Natural Gas Corporation | Docket No. UG-240008 | Return on Equity |
| Puget Sound Energy Inc. | 02/24 | Puget Sound Energy Inc. | Docket No. UE-240004 UG-240005 | Return on Equity |
| PacifiCorp d/b/a Pacific Power & Light | 03/23 | PacifiCorp d/b/a Pacific Power & Light | Docket No. UE-230172 | Return on Equity |
| Cascade Natural Gas Corporation | 06/20 | Cascade Natural Gas Corporation | Docket No. UG-200568 | Return on Equity |
| PacifiCorp d/b/a Pacific Power & Light | 12/19 | PacifiCorp d/b/a Pacific Power & Light | Docket No. UE-191024 | Return on Equity |
| Cascade Natural Gas Corporation | 04/19 | Cascade Natural Gas Corporation | Docket No. UG-190210 | Return on Equity |
| **West Virginia Public Service Commission** | | | | |
| West Virginia American Water Company | 05/23 | West Virginia American Water Company | Case No. 23-0383-W-42T | Return on Equity |

Brattle

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| West Virginia American Water Company | 04/21 | West Virginia American Water Company | Case No. 21-02369-W-42T | Return on Equity |
| West Virginia American Water Company | 04/18 | West Virginia American Water Company | Case No. 18-0573-W-42T<br>Case No. 18-0576-S-42T | Return on Equity |
| **Wisconsin Public Service Commission** | | | | |
| Wisconsin Power and Light | 04/24 | Wisconsin Power and Light | Docket No. 6680-UR-128 | Return on Equity |
| Wisconsin Electric Power Company and Wisconsin Gas LLC | 04/24 | Wisconsin Electric Power Company and Wisconsin Gas LLC | Docket No. 05-UR-111 | Return on Equity |
| Wisconsin Power and Light | 05/23 | Wisconsin Power and Light | Docket No. 6680-UR-124 | Return on Equity |
| Wisconsin Electric Power Company and Wisconsin Gas LLC | 04/22 | Wisconsin Electric Power Company and Wisconsin Gas LLC | Docket No. 05-UR-110 | Return on Equity |
| Wisconsin Public Service Corp. | 04/22 | Wisconsin Public Service Corp. | 6690-UR-127 | Return on Equity |
| Alliant Energy | | Alliant Energy | | Return on Equity |
| Wisconsin Electric Power Company and Wisconsin Gas LLC | 03/19 | Wisconsin Electric Power Company and Wisconsin Gas LLC | Docket No. 05-UR-109 | Return on Equity |
| Wisconsin Public Service Corp. | 03/19 | Wisconsin Public Service Corp. | 6690-UR-126 | Return on Equity |
| **Wyoming Public Service Commission** | | | | |
| PacifiCorp d/b/a Rocky Mountain Power | 02/23 | PacifiCorp d/b/a Rocky Mountain Power | Docket No. 20000-633-ER-23 | Return on Equity |
| PacifiCorp d/b/a Rocky Mountain Power | 03/20 | PacifiCorp d/b/a Rocky Mountain Power | Docket No. 20000-578-ER-20 | Return on Equity |
| Montana-Dakota Utilities Co. | 05/19 | Montana-Dakota Utilities Co. | 30013-351-GR-19 | Return on Equity |

Brattle

CERTIFICATIONS/ACCREDITATIONS

Certified General Appraiser, licensed in the Commonwealth of Massachusetts

SUMMARY OF ROE ANALYSES RESULTS

| | Minimum Growth Rate (Median) | Average Growth Rate (Median) | Maximum Growth Rate (Median) |
|---|---|---|---|
| ***Constant Growth DCF*** | | | |
| 30-Day Average | 9.93% | 10.54% | 11.22% |
| 90-Day Average | 10.14% | 10.83% | 11.44% |
| 180-Day Average | 10.14% | 10.85% | 11.59% |
| Constant Growth Average | 10.07% | 10.74% | 11.41% |
| ***CAPM*** | | | |
| | Current 30-day Average Treasury Bond Yield | Near-Term Blue Chip Forecast Yield | Long-Term Blue Chip Forecast Yield |
| Value Line Beta | 12.05% | 12.04% | 12.03% |
| Bloomberg Beta | 10.93% | 10.88% | 10.86% |
| Long-term Avg. Beta | 10.67% | 10.61% | 10.59% |
| ***ECAPM*** | | | |
| Value Line Beta | 12.17% | 12.16% | 12.15% |
| Bloomberg Beta | 11.33% | 11.29% | 11.27% |
| Long-term Avg. Beta | 11.13% | 11.09% | 11.07% |
| ***Bond Yield Plus Risk Premium*** | | | |
| | Current 30-day Average Treasury Bond Yield | Near-Term Blue Chip Forecast Yield | Long-Term Blue Chip Forecast Yield |
| Risk Premium Results | 10.62% | 10.47% | 10.41% |

**PROXY GROUP SCREENING DATA AND RESULTS**

| Company | Ticker | [1] Dividends | [2] S&P Credit Rating Between BBB- and AAA | [3] Covered by More Than 1 Analyst | [4] Positive Growth Rates from at least two sources (Value Line, Yahoo! First Call, and Zacks) | [5] Generation Assets Included in Rate Base | [6] % Company-Owned Generation > 40% | [7] % Regulated Electric Operating Income > 60% | [9] Announced Merger |
|---|---|---|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | Yes | A- | Yes | Yes | Yes | 72.75% | 88.17% | No |
| American Electric Power Company, Inc. | AEP | Yes | BBB+ | Yes | Yes | Yes | 51.62% | 99.95% | No |
| Avista Corporation | AVA | Yes | BBB | Yes | Yes | Yes | 59.47% | 72.57% | No |
| CMS Energy Corporation | CMS | Yes | BBB+ | Yes | Yes | Yes | 42.50% | 61.25% | No |
| DTE Energy Company | DTE | No | BBB+ | Yes | Yes | Yes | 77.42% | 71.10% | No |
| Duke Energy Corporation | DUK | Yes | BBB+ | Yes | Yes | Yes | 81.53% | 90.37% | No |
| Entergy Corporation | ETR | Yes | BBB+ | Yes | Yes | Yes | 71.43% | 97.95% | No |
| Evergy, Inc. | EVRG | Yes | BBB+ | Yes | Yes | Yes | 62.14% | 100.00% | No |
| IDACORP, Inc. | IDA | Yes | BBB | Yes | Yes | Yes | 65.35% | 99.98% | No |
| NextEra Energy, Inc. | NEE | Yes | A- | Yes | Yes | Yes | 96.40% | 88.15% | No |
| NorthWestern Corporation | NWE | Yes | BBB | Yes | Yes | Yes | 55.82% | 85.59% | No |
| OGE Energy Corporation | OGE | Yes | BBB+ | Yes | Yes | Yes | 50.65% | 100.00% | No |
| Pinnacle West Capital Corporation | PNW | Yes | BBB+ | Yes | Yes | Yes | 76.09% | 100.00% | No |
| Portland General Electric Company | POR | Yes | BBB+ | Yes | Yes | Yes | 54.88% | 100.00% | No |
| PPL Corporation | PPL | No | A- | Yes | Yes | Yes | 41.65% | 94.15% | No |
| Southern Company | SO | Yes | A- | Yes | Yes | Yes | 76.85% | 73.40% | No |
| Xcel Energy Inc. | XEL | Yes | BBB+ | Yes | Yes | Yes | 57.97% | 85.90% | No |

Notes:
[1] Bloomberg Professional
[2] Bloomberg Professional
[3] Yahoo! Finance and Zacks
[4] Yahoo! Finance, Value Line Investment Survey, and Zacks
[5] S&P Capital IQ Pro
[6] S&P Capital IQ Pro
[7] Form 10-K's for 2023, 2022, and 2021
[8] Form 10-K's for 2023, 2022, and 2021
[9] S&P Capital IQ Pro Financial News Releases

**30-DAY CONSTANT GROWTH DCF**

| Company | Ticker | [1] Annualized Dividend | [2] Stock Price | [3] Dividend Yield | [4] Expected Dividend Yield | [5] Value Line EPS Growth | [6] Yahoo! Finance EPS Growth | [7] Zacks EPS Growth | [8] Average Growth Rate | [9] ROE - Minimum Growth Rate | [10] ROE - Average Growth Rate | [11] ROE - Maximum Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | $1.92 | $50.63 | 3.79% | 3.91% | 6.50% | 6.30% | 6.10% | 6.30% | 10.01% | 10.21% | 10.42% |
| American Electric Power Company, Inc. | AEP | $3.52 | $88.66 | 3.97% | 4.10% | 6.50% | 6.36% | 6.10% | 6.32% | 10.19% | 10.42% | 10.60% |
| Avista Corporation | AVA | $1.90 | $36.64 | 5.19% | 5.34% | 6.00% | 6.20% | n/a | 6.10% | 11.34% | 11.44% | 11.55% |
| CMS Energy Corporation | CMS | $2.06 | $61.28 | 3.36% | 3.47% | 5.00% | 7.60% | 7.60% | 6.73% | 8.45% | 10.21% | 11.09% |
| DTE Energy Company | DTE | $4.08 | $113.23 | 3.60% | 3.71% | 4.50% | 5.10% | 8.20% | 5.93% | 8.18% | 9.64% | 11.95% |
| Duke Energy Corporation | DUK | $4.10 | $100.52 | 4.08% | 4.20% | 5.00% | 6.66% | 6.10% | 5.92% | 9.18% | 10.12% | 10.87% |
| Entergy Corporation | ETR | $4.52 | $109.26 | 4.14% | 4.24% | 0.50% | 6.80% | 7.30% | 4.87% | 4.65% | 9.10% | 11.59% |
| Evergy, Inc. | EVRG | $2.57 | $53.47 | 4.81% | 4.96% | 7.50% | 6.00% | 5.00% | 6.17% | 9.93% | 11.12% | 12.49% |
| IDACORP, Inc. | IDA | $3.32 | $95.65 | 3.47% | 3.55% | 5.00% | 4.40% | n/a | 4.70% | 7.95% | 8.25% | 8.56% |
| NextEra Energy, Inc. | NEE | $2.06 | $72.02 | 2.86% | 2.97% | 8.00% | 8.01% | 8.00% | 8.00% | 10.97% | 10.98% | 10.98% |
| NorthWestern Corporation | NWE | $2.60 | $51.21 | 5.08% | 5.19% | 4.00% | 4.50% | n/a | 4.25% | 9.18% | 9.44% | 9.69% |
| OGE Energy Corporation | OGE | $1.67 | $35.56 | 4.70% | 4.84% | 6.50% | negative | 5.00% | 5.75% | 9.82% | 10.59% | 11.36% |
| Pinnacle West Capital Corporation | PNW | $3.52 | $76.05 | 4.63% | 4.78% | 4.50% | 7.20% | 8.20% | 6.63% | 9.23% | 11.42% | 13.02% |
| Portland General Electric Company | POR | $1.90 | $43.98 | 4.32% | 4.52% | 6.00% | 12.50% | n/a | 9.25% | 10.45% | 13.77% | 17.09% |
| PPL Corporation | PPL | $1.03 | $28.45 | 3.62% | 3.75% | 7.50% | 6.80% | 6.80% | 7.03% | 10.54% | 10.78% | 11.26% |
| Southern Company | SO | $2.88 | $76.24 | 3.78% | 3.90% | 6.50% | 7.30% | 6.10% | 6.63% | 9.99% | 10.54% | 11.22% |
| Xcel Energy Inc. | XEL | $2.19 | $54.86 | 3.99% | 4.13% | 7.00% | 6.73% | 6.40% | 6.71% | 10.52% | 10.84% | 11.13% |
| Mean | | | | 4.08% | 4.21% | 5.68% | 6.78% | 6.68% | 6.31% | 9.45% | 10.52% | 11.46% |
| Median | | | | 3.99% | 4.13% | 6.00% | 6.70% | 6.40% | 6.30% | 9.93% | 10.54% | 11.22% |

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-day average as of May 31, 2024
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

**90-DAY CONSTANT GROWTH DCF**

| Company | Ticker | [1] Annualized Dividend | [2] Stock Price | [3] Dividend Yield | [4] Expected Dividend Yield | [5] Value Line EPS Growth | [6] Yahoo! Finance EPS Growth | [7] Zacks EPS Growth | [8] Average Growth Rate | [9] ROE - Minimum Growth Rate | [10] ROE - Average Growth Rate | [11] ROE - Maximum Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | $1.92 | $48.95 | 3.92% | 4.05% | 6.50% | 6.30% | 6.10% | 6.30% | 10.14% | 10.35% | 10.55% |
| American Electric Power Company, Inc. | AEP | $3.52 | $83.40 | 4.22% | 4.35% | 6.50% | 6.36% | 6.10% | 6.32% | 10.45% | 10.67% | 10.86% |
| Avista Corporation | AVA | $1.90 | $34.40 | 5.52% | 5.69% | 6.00% | 6.20% | n/a | 6.10% | 11.69% | 11.79% | 11.89% |
| CMS Energy Corporation | CMS | $2.06 | $58.74 | 3.51% | 3.62% | 5.00% | 7.60% | 7.60% | 6.73% | 8.59% | 10.36% | 11.24% |
| DTE Energy Company | DTE | $4.08 | $109.19 | 3.74% | 3.85% | 4.50% | 5.10% | 8.20% | 5.93% | 8.32% | 9.78% | 12.09% |
| Duke Energy Corporation | DUK | $4.10 | $95.59 | 4.29% | 4.42% | 5.00% | 6.66% | 6.10% | 5.92% | 9.40% | 10.34% | 11.09% |
| Entergy Corporation | ETR | $4.52 | $103.44 | 4.37% | 4.48% | 0.50% | 6.80% | 7.30% | 4.87% | 4.88% | 9.34% | 11.83% |
| Evergy, Inc. | EVRG | $2.57 | $51.13 | 5.03% | 5.18% | 7.50% | 6.00% | 5.00% | 6.17% | 10.15% | 11.35% | 12.72% |
| IDACORP, Inc. | IDA | $3.32 | $91.61 | 3.62% | 3.71% | 5.00% | 4.40% | n/a | 4.70% | 8.10% | 8.41% | 8.71% |
| NextEra Energy, Inc. | NEE | $2.06 | $63.18 | 3.26% | 3.39% | 8.00% | 8.01% | 8.00% | 8.00% | 11.39% | 11.39% | 11.40% |
| NorthWestern Corporation | NWE | $2.60 | $49.31 | 5.27% | 5.39% | 4.00% | 4.50% | n/a | 4.25% | 9.38% | 9.64% | 9.89% |
| OGE Energy Corporation | OGE | $1.67 | $33.87 | 4.94% | 5.08% | 6.50% | negative | 5.00% | 5.75% | 10.06% | 10.83% | 11.60% |
| Pinnacle West Capital Corporation | PNW | $3.52 | $71.84 | 4.90% | 5.06% | 4.50% | 7.20% | 8.20% | 6.63% | 9.51% | 11.70% | 13.30% |
| Portland General Electric Company | POR | $1.90 | $41.72 | 4.55% | 4.76% | 6.00% | 12.50% | n/a | 9.25% | 10.69% | 14.01% | 17.34% |
| PPL Corporation | PPL | $1.03 | $27.14 | 3.80% | 3.93% | 7.50% | 6.80% | 6.80% | 7.03% | 10.72% | 10.96% | 11.44% |
| Southern Company | SO | $2.88 | $70.75 | 4.07% | 4.21% | 6.50% | 7.30% | 6.10% | 6.63% | 10.29% | 10.84% | 11.52% |
| Xcel Energy Inc. | XEL | $2.19 | $54.82 | 4.00% | 4.13% | 7.00% | 6.73% | 6.40% | 6.71% | 10.52% | 10.84% | 11.13% |
| Mean | | | | 4.29% | 4.43% | 5.68% | 6.78% | 6.68% | 6.31% | 9.66% | 10.74% | 11.68% |
| Median | | | | 4.22% | 4.35% | 6.00% | 6.70% | 6.40% | 6.30% | 10.14% | 10.83% | 11.44% |

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 90-day average as of May 31, 2024
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

**180-DAY CONSTANT GROWTH DCF**

| Company | Ticker | [1] Annualized Dividend | [2] Stock Price | [3] Dividend Yield | [4] Expected Dividend Yield | [5] Value Line EPS Growth | [6] Yahoo! Finance EPS Growth | [7] Zacks EPS Growth | [8] Average Growth Rate | [9] ROE - Minimum Growth Rate | [10] ROE - Average Growth Rate | [11] ROE - Maximum Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | $1.92 | $48.97 | 3.92% | 4.04% | 6.50% | 6.30% | 6.10% | 6.30% | 10.14% | 10.34% | 10.55% |
| American Electric Power Company, Inc. | AEP | $3.52 | $79.86 | 4.41% | 4.55% | 6.50% | 6.36% | 6.10% | 6.32% | 10.64% | 10.87% | 11.05% |
| Avista Corporation | AVA | $1.90 | $33.69 | 5.64% | 5.81% | 6.00% | 6.20% | n/a | 6.10% | 11.81% | 11.91% | 12.02% |
| CMS Energy Corporation | CMS | $2.06 | $56.90 | 3.62% | 3.74% | 5.00% | 7.60% | 7.60% | 6.73% | 8.71% | 10.48% | 11.36% |
| DTE Energy Company | DTE | $4.08 | $105.62 | 3.86% | 3.98% | 4.50% | 5.10% | 8.20% | 5.93% | 8.45% | 9.91% | 12.22% |
| Duke Energy Corporation | DUK | $4.10 | $92.72 | 4.42% | 4.55% | 5.00% | 6.66% | 6.10% | 5.92% | 9.53% | 10.47% | 11.23% |
| Entergy Corporation | ETR | $4.52 | $99.47 | 4.54% | 4.65% | 0.50% | 6.80% | 7.30% | 4.87% | 5.06% | 9.52% | 12.01% |
| Evergy, Inc. | EVRG | $2.57 | $50.32 | 5.11% | 5.26% | 7.50% | 6.00% | 5.00% | 6.17% | 10.23% | 11.43% | 12.80% |
| IDACORP, Inc. | IDA | $3.32 | $93.14 | 3.56% | 3.65% | 5.00% | 4.40% | n/a | 4.70% | 8.04% | 8.35% | 8.65% |
| NextEra Energy, Inc. | NEE | $2.06 | $60.33 | 3.41% | 3.55% | 8.00% | 8.01% | 8.00% | 8.00% | 11.55% | 11.55% | 11.56% |
| NorthWestern Corporation | NWE | $2.60 | $49.08 | 5.30% | 5.41% | 4.00% | 4.50% | n/a | 4.25% | 9.40% | 9.66% | 9.92% |
| OGE Energy Corporation | OGE | $1.67 | $33.77 | 4.95% | 5.10% | 6.50% | negative | 5.00% | 5.75% | 10.08% | 10.85% | 11.61% |
| Pinnacle West Capital Corporation | PNW | $3.52 | $71.71 | 4.91% | 5.07% | 4.50% | 7.20% | 8.20% | 6.63% | 9.52% | 11.70% | 13.31% |
| Portland General Electric Company | POR | $1.90 | $41.35 | 4.59% | 4.81% | 6.00% | 12.50% | n/a | 9.25% | 10.73% | 14.06% | 17.38% |
| PPL Corporation | PPL | $1.03 | $26.16 | 3.94% | 4.08% | 7.50% | 6.80% | 6.80% | 7.03% | 10.87% | 11.11% | 11.59% |
| Southern Company | SO | $2.88 | $69.05 | 4.17% | 4.31% | 6.50% | 7.30% | 6.10% | 6.63% | 10.40% | 10.94% | 11.62% |
| Xcel Energy Inc. | XEL | $2.19 | $56.92 | 3.85% | 3.98% | 7.00% | 6.73% | 6.40% | 6.71% | 10.37% | 10.69% | 10.98% |
| Mean | | | | 4.37% | 4.50% | 5.68% | 6.78% | 6.68% | 6.31% | 9.74% | 10.81% | 11.76% |
| Median | | | | 4.41% | 4.55% | 6.00% | 6.70% | 6.40% | 6.30% | 10.14% | 10.85% | 11.59% |

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 180-day average as of May 31, 2024
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VL BETA

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

| | | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|
| Company | Ticker | Current 30-day average of 30-year U.S. Treasury bond yield | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | ROE (K) | ECAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.66% | 0.90 | 12.51% | 7.86% | 11.73% | 11.92% |
| American Electric Power Company, Inc. | AEP | 4.66% | 0.80 | 12.51% | 7.86% | 10.94% | 11.34% |
| Avista Corporation | AVA | 4.66% | 0.95 | 12.51% | 7.86% | 12.12% | 12.22% |
| CMS Energy Corporation | CMS | 4.66% | 0.85 | 12.51% | 7.86% | 11.34% | 11.63% |
| DTE Energy Company | DTE | 4.66% | 1.00 | 12.51% | 7.86% | 12.51% | 12.51% |
| Duke Energy Corporation | DUK | 4.66% | 0.90 | 12.51% | 7.86% | 11.73% | 11.92% |
| Entergy Corporation | ETR | 4.66% | 0.95 | 12.51% | 7.86% | 12.12% | 12.22% |
| Evergy, Inc. | EVRG | 4.66% | 0.95 | 12.51% | 7.86% | 12.12% | 12.22% |
| IDACORP, Inc. | IDA | 4.66% | 0.85 | 12.51% | 7.86% | 11.34% | 11.63% |
| NextEra Energy, Inc. | NEE | 4.66% | 1.05 | 12.51% | 7.86% | 12.91% | 12.81% |
| NorthWestern Corporation | NWE | 4.66% | 0.95 | 12.51% | 7.86% | 12.12% | 12.22% |
| OGE Energy Corporation | OGE | 4.66% | 1.05 | 12.51% | 7.86% | 12.91% | 12.81% |
| Pinnacle West Capital Corporation | PNW | 4.66% | 0.95 | 12.51% | 7.86% | 12.12% | 12.22% |
| Portland General Electric Company | POR | 4.66% | 0.90 | 12.51% | 7.86% | 11.73% | 11.92% |
| PPL Corporation | PPL | 4.66% | 1.15 | 12.51% | 7.86% | 13.69% | 13.40% |
| Southern Company | SO | 4.66% | 0.95 | 12.51% | 7.86% | 12.12% | 12.22% |
| Xcel Energy Inc. | XEL | 4.66% | 0.85 | 12.51% | 7.86% | 11.34% | 11.63% |
| Mean | | | | | | 12.05% | 12.17% |
| Median | | | | | | 12.12% | 12.22% |

Notes:
[1] Source: Bloomberg Professional, as of May 31, 2024.
[2] Source: Value Line
[3] Source: Schedule AEB-D2, Attachment 6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & VL BETA

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

| | | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|
| Company | Ticker | Near-term projected 30-year U.S. Treasury bond yield (Q3 2024 - Q3 2025) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | ROE (K) | ECAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.40% | 0.90 | 12.51% | 8.11% | 11.70% | 11.91% |
| American Electric Power Company, Inc. | AEP | 4.40% | 0.80 | 12.51% | 8.11% | 10.89% | 11.30% |
| Avista Corporation | AVA | 4.40% | 0.95 | 12.51% | 8.11% | 12.11% | 12.21% |
| CMS Energy Corporation | CMS | 4.40% | 0.85 | 12.51% | 8.11% | 11.30% | 11.60% |
| DTE Energy Company | DTE | 4.40% | 1.00 | 12.51% | 8.11% | 12.51% | 12.51% |
| Duke Energy Corporation | DUK | 4.40% | 0.90 | 12.51% | 8.11% | 11.70% | 11.91% |
| Entergy Corporation | ETR | 4.40% | 0.95 | 12.51% | 8.11% | 12.11% | 12.21% |
| Evergy, Inc. | EVRG | 4.40% | 0.95 | 12.51% | 8.11% | 12.11% | 12.21% |
| IDACORP, Inc. | IDA | 4.40% | 0.85 | 12.51% | 8.11% | 11.30% | 11.60% |
| NextEra Energy, Inc. | NEE | 4.40% | 1.05 | 12.51% | 8.11% | 12.92% | 12.82% |
| NorthWestern Corporation | NWE | 4.40% | 0.95 | 12.51% | 8.11% | 12.11% | 12.21% |
| OGE Energy Corporation | OGE | 4.40% | 1.05 | 12.51% | 8.11% | 12.92% | 12.82% |
| Pinnacle West Capital Corporation | PNW | 4.40% | 0.95 | 12.51% | 8.11% | 12.11% | 12.21% |
| Portland General Electric Company | POR | 4.40% | 0.90 | 12.51% | 8.11% | 11.70% | 11.91% |
| PPL Corporation | PPL | 4.40% | 1.15 | 12.51% | 8.11% | 13.73% | 13.43% |
| Southern Company | SO | 4.40% | 0.95 | 12.51% | 8.11% | 12.11% | 12.21% |
| Xcel Energy Inc. | XEL | 4.40% | 0.85 | 12.51% | 8.11% | 11.30% | 11.60% |
| Mean | | | | | | 12.04% | 12.16% |
| Median | | | | | | 12.11% | 12.21% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 2
[2] Source: Value Line
[3] Source: Schedule AEB-D2, Attachment 6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & VL BETA

$$K = Rf + \beta\ (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

| | | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|
| Company | Ticker | Projected 30-year U.S. Treasury bond yield (2023 - 2027) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | ROE (K) | ECAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.30% | 0.90 | 12.51% | 8.21% | 11.69% | 11.90% |
| American Electric Power Company, Inc. | AEP | 4.30% | 0.80 | 12.51% | 8.21% | 10.87% | 11.28% |
| Avista Corporation | AVA | 4.30% | 0.95 | 12.51% | 8.21% | 12.10% | 12.21% |
| CMS Energy Corporation | CMS | 4.30% | 0.85 | 12.51% | 8.21% | 11.28% | 11.59% |
| DTE Energy Company | DTE | 4.30% | 1.00 | 12.51% | 8.21% | 12.51% | 12.51% |
| Duke Energy Corporation | DUK | 4.30% | 0.90 | 12.51% | 8.21% | 11.69% | 11.90% |
| Entergy Corporation | ETR | 4.30% | 0.95 | 12.51% | 8.21% | 12.10% | 12.21% |
| Evergy, Inc. | EVRG | 4.30% | 0.95 | 12.51% | 8.21% | 12.10% | 12.21% |
| IDACORP, Inc. | IDA | 4.30% | 0.85 | 12.51% | 8.21% | 11.28% | 11.59% |
| NextEra Energy, Inc. | NEE | 4.30% | 1.05 | 12.51% | 8.21% | 12.92% | 12.82% |
| NorthWestern Corporation | NWE | 4.30% | 0.95 | 12.51% | 8.21% | 12.10% | 12.21% |
| OGE Energy Corporation | OGE | 4.30% | 1.05 | 12.51% | 8.21% | 12.92% | 12.82% |
| Pinnacle West Capital Corporation | PNW | 4.30% | 0.95 | 12.51% | 8.21% | 12.10% | 12.21% |
| Portland General Electric Company | POR | 4.30% | 0.90 | 12.51% | 8.21% | 11.69% | 11.90% |
| PPL Corporation | PPL | 4.30% | 1.15 | 12.51% | 8.21% | 13.75% | 13.44% |
| Southern Company | SO | 4.30% | 0.95 | 12.51% | 8.21% | 12.10% | 12.21% |
| Xcel Energy Inc. | XEL | 4.30% | 0.85 | 12.51% | 8.21% | 11.28% | 11.59% |
| Mean | | | | | | 12.03% | 12.15% |
| Median | | | | | | 12.10% | 12.21% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 14
[2] Source: Value Line
[3] Source: Schedule AEB-D2, Attachment 6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG BETA

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

| | | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|
| Company | Ticker | Current 30-day average of 30-year U.S. Treasury bond yield | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | ROE (K) | ECAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.66% | 0.78 | 12.51% | 7.86% | 10.79% | 11.22% |
| American Electric Power Company, Inc. | AEP | 4.66% | 0.75 | 12.51% | 7.86% | 10.59% | 11.07% |
| Avista Corporation | AVA | 4.66% | 0.76 | 12.51% | 7.86% | 10.59% | 11.07% |
| CMS Energy Corporation | CMS | 4.66% | 0.74 | 12.51% | 7.86% | 10.49% | 11.00% |
| DTE Energy Company | DTE | 4.66% | 0.81 | 12.51% | 7.86% | 11.05% | 11.41% |
| Duke Energy Corporation | DUK | 4.66% | 0.71 | 12.51% | 7.86% | 10.26% | 10.83% |
| Entergy Corporation | ETR | 4.66% | 0.85 | 12.51% | 7.86% | 11.36% | 11.65% |
| Evergy, Inc. | EVRG | 4.66% | 0.77 | 12.51% | 7.86% | 10.74% | 11.18% |
| IDACORP, Inc. | IDA | 4.66% | 0.79 | 12.51% | 7.86% | 10.84% | 11.26% |
| NextEra Energy, Inc. | NEE | 4.66% | 0.81 | 12.51% | 7.86% | 11.03% | 11.40% |
| NorthWestern Corporation | NWE | 4.66% | 0.86 | 12.51% | 7.86% | 11.42% | 11.69% |
| OGE Energy Corporation | OGE | 4.66% | 0.91 | 12.51% | 7.86% | 11.80% | 11.98% |
| Pinnacle West Capital Corporation | PNW | 4.66% | 0.81 | 12.51% | 7.86% | 11.03% | 11.40% |
| Portland General Electric Company | POR | 4.66% | 0.78 | 12.51% | 7.86% | 10.77% | 11.21% |
| PPL Corporation | PPL | 4.66% | 0.93 | 12.51% | 7.86% | 11.98% | 12.11% |
| Southern Company | SO | 4.66% | 0.77 | 12.51% | 7.86% | 10.72% | 11.17% |
| Xcel Energy Inc. | XEL | 4.66% | 0.72 | 12.51% | 7.86% | 10.35% | 10.89% |
| Mean | | | | | | 10.93% | 11.33% |
| Median | | | | | | 10.79% | 11.22% |

Notes:
[1] Source: Bloomberg Professional, as of May 31, 2024.
[2] Source: Bloomberg Professional, based on 10-year weekly returns, as of May 31, 2024
[3] Source: Schedule AEB-D2, Attachment 6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

| | | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|
| Company | Ticker | Near-term projected 30-year U.S. Treasury bond yield (Q3 2024 - Q3 2025) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | ROE (K) | ECAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.40% | 0.78 | 12.51% | 8.11% | 10.74% | 11.18% |
| American Electric Power Company, Inc. | AEP | 4.40% | 0.75 | 12.51% | 8.11% | 10.52% | 11.02% |
| Avista Corporation | AVA | 4.40% | 0.76 | 12.51% | 8.11% | 10.53% | 11.02% |
| CMS Energy Corporation | CMS | 4.40% | 0.74 | 12.51% | 8.11% | 10.42% | 10.95% |
| DTE Energy Company | DTE | 4.40% | 0.81 | 12.51% | 8.11% | 11.00% | 11.38% |
| Duke Energy Corporation | DUK | 4.40% | 0.71 | 12.51% | 8.11% | 10.19% | 10.77% |
| Entergy Corporation | ETR | 4.40% | 0.85 | 12.51% | 8.11% | 11.32% | 11.62% |
| Evergy, Inc. | EVRG | 4.40% | 0.77 | 12.51% | 8.11% | 10.68% | 11.14% |
| IDACORP, Inc. | IDA | 4.40% | 0.79 | 12.51% | 8.11% | 10.79% | 11.22% |
| NextEra Energy, Inc. | NEE | 4.40% | 0.81 | 12.51% | 8.11% | 10.98% | 11.37% |
| NorthWestern Corporation | NWE | 4.40% | 0.86 | 12.51% | 8.11% | 11.38% | 11.66% |
| OGE Energy Corporation | OGE | 4.40% | 0.91 | 12.51% | 8.11% | 11.78% | 11.96% |
| Pinnacle West Capital Corporation | PNW | 4.40% | 0.81 | 12.51% | 8.11% | 10.98% | 11.37% |
| Portland General Electric Company | POR | 4.40% | 0.78 | 12.51% | 8.11% | 10.72% | 11.17% |
| PPL Corporation | PPL | 4.40% | 0.93 | 12.51% | 8.11% | 11.96% | 12.10% |
| Southern Company | SO | 4.40% | 0.77 | 12.51% | 8.11% | 10.67% | 11.13% |
| Xcel Energy Inc. | XEL | 4.40% | 0.72 | 12.51% | 8.11% | 10.28% | 10.84% |
| Mean | | | | | | 10.88% | 11.29% |
| Median | | | | | | 10.74% | 11.18% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 2
[2] Source: Bloomberg Professional, based on 10-year weekly returns, as of May 31, 2024
[3] Source: Schedule AEB-D2, Attachment 6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

| | | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|
| Company | Ticker | Projected 30-year U.S. Treasury bond yield (2023 - 2027) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | ROE (K) | ECAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.30% | 0.78 | 12.51% | 8.21% | 10.72% | 11.17% |
| American Electric Power Company, Inc. | AEP | 4.30% | 0.75 | 12.51% | 8.21% | 10.50% | 11.00% |
| Avista Corporation | AVA | 4.30% | 0.76 | 12.51% | 8.21% | 10.50% | 11.01% |
| CMS Energy Corporation | CMS | 4.30% | 0.74 | 12.51% | 8.21% | 10.40% | 10.93% |
| DTE Energy Company | DTE | 4.30% | 0.81 | 12.51% | 8.21% | 10.98% | 11.36% |
| Duke Energy Corporation | DUK | 4.30% | 0.71 | 12.51% | 8.21% | 10.16% | 10.75% |
| Entergy Corporation | ETR | 4.30% | 0.85 | 12.51% | 8.21% | 11.31% | 11.61% |
| Evergy, Inc. | EVRG | 4.30% | 0.77 | 12.51% | 8.21% | 10.66% | 11.12% |
| IDACORP, Inc. | IDA | 4.30% | 0.79 | 12.51% | 8.21% | 10.76% | 11.20% |
| NextEra Energy, Inc. | NEE | 4.30% | 0.81 | 12.51% | 8.21% | 10.96% | 11.35% |
| NorthWestern Corporation | NWE | 4.30% | 0.86 | 12.51% | 8.21% | 11.37% | 11.65% |
| OGE Energy Corporation | OGE | 4.30% | 0.91 | 12.51% | 8.21% | 11.77% | 11.96% |
| Pinnacle West Capital Corporation | PNW | 4.30% | 0.81 | 12.51% | 8.21% | 10.97% | 11.35% |
| Portland General Electric Company | POR | 4.30% | 0.78 | 12.51% | 8.21% | 10.70% | 11.15% |
| PPL Corporation | PPL | 4.30% | 0.93 | 12.51% | 8.21% | 11.95% | 12.09% |
| Southern Company | SO | 4.30% | 0.77 | 12.51% | 8.21% | 10.64% | 11.11% |
| Xcel Energy Inc. | XEL | 4.30% | 0.72 | 12.51% | 8.21% | 10.25% | 10.82% |
| Mean | | | | | | 10.86% | 11.27% |
| Median | | | | | | 10.72% | 11.17% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 14
[2] Source: Bloomberg Professional, based on 10-year weekly returns, as of May 31, 2024
[3] Source: Schedule AEB-D2, Attachment 6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VALUE LINE LT AVERAGE BETA

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

| | | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|
| Company | Ticker | Current 30-day average of 30-year U.S. Treasury bond yield | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | ROE (K) | ECAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.66% | 0.76 | 12.51% | 7.86% | 10.66% | 11.12% |
| American Electric Power Company, Inc. | AEP | 4.66% | 0.69 | 12.51% | 7.86% | 10.05% | 10.67% |
| Avista Corporation | AVA | 4.66% | 0.80 | 12.51% | 7.86% | 10.91% | 11.31% |
| CMS Energy Corporation | CMS | 4.66% | 0.70 | 12.51% | 7.86% | 10.19% | 10.77% |
| DTE Energy Company | DTE | 4.66% | 0.77 | 12.51% | 7.86% | 10.73% | 11.17% |
| Duke Energy Corporation | DUK | 4.66% | 0.69 | 12.51% | 7.86% | 10.05% | 10.67% |
| Entergy Corporation | ETR | 4.66% | 0.76 | 12.51% | 7.86% | 10.66% | 11.12% |
| Evergy, Inc. | EVRG | 4.66% | 0.94 | 12.51% | 7.86% | 12.02% | 12.15% |
| IDACORP, Inc. | IDA | 4.66% | 0.74 | 12.51% | 7.86% | 10.48% | 10.99% |
| NextEra Energy, Inc. | NEE | 4.66% | 0.75 | 12.51% | 7.86% | 10.59% | 11.07% |
| NorthWestern Corporation | NWE | 4.66% | 0.76 | 12.51% | 7.86% | 10.66% | 11.12% |
| OGE Energy Corporation | OGE | 4.66% | 0.94 | 12.51% | 7.86% | 12.05% | 12.17% |
| Pinnacle West Capital Corporation | PNW | 4.66% | 0.75 | 12.51% | 7.86% | 10.59% | 11.07% |
| Portland General Electric Company | POR | 4.66% | 0.76 | 12.51% | 7.86% | 10.66% | 11.12% |
| PPL Corporation | PPL | 4.66% | 0.84 | 12.51% | 7.86% | 11.23% | 11.55% |
| Southern Company | SO | 4.66% | 0.68 | 12.51% | 7.86% | 10.01% | 10.64% |
| Xcel Energy Inc. | XEL | 4.66% | 0.67 | 12.51% | 7.86% | 9.94% | 10.59% |
| Mean | | | | | | 10.67% | 11.13% |
| Median | | | | | | 10.66% | 11.12% |

Notes:
[1] Source: Bloomberg Professional, as of May 31, 2024.
[2] Source: Schedule AEB-D2, Attachment 5
[3] Source: Schedule AEB-D2, Attachment 6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT AVERAGE BETA

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

| | | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|
| Company | Ticker | Near-term projected 30-year U.S. Treasury bond yield (Q3 2024 - Q3 2025) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | ROE (K) | ECAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.40% | 0.76 | 12.51% | 8.11% | 10.60% | 11.08% |
| American Electric Power Company, Inc. | AEP | 4.40% | 0.69 | 12.51% | 8.11% | 9.97% | 10.61% |
| Avista Corporation | AVA | 4.40% | 0.80 | 12.51% | 8.11% | 10.85% | 11.27% |
| CMS Energy Corporation | CMS | 4.40% | 0.70 | 12.51% | 8.11% | 10.12% | 10.72% |
| DTE Energy Company | DTE | 4.40% | 0.77 | 12.51% | 8.11% | 10.67% | 11.13% |
| Duke Energy Corporation | DUK | 4.40% | 0.69 | 12.51% | 8.11% | 9.97% | 10.61% |
| Entergy Corporation | ETR | 4.40% | 0.76 | 12.51% | 8.11% | 10.60% | 11.08% |
| Evergy, Inc. | EVRG | 4.40% | 0.94 | 12.51% | 8.11% | 12.01% | 12.13% |
| IDACORP, Inc. | IDA | 4.40% | 0.74 | 12.51% | 8.11% | 10.41% | 10.94% |
| NextEra Energy, Inc. | NEE | 4.40% | 0.75 | 12.51% | 8.11% | 10.52% | 11.02% |
| NorthWestern Corporation | NWE | 4.40% | 0.76 | 12.51% | 8.11% | 10.60% | 11.08% |
| OGE Energy Corporation | OGE | 4.40% | 0.94 | 12.51% | 8.11% | 12.03% | 12.15% |
| Pinnacle West Capital Corporation | PNW | 4.40% | 0.75 | 12.51% | 8.11% | 10.52% | 11.02% |
| Portland General Electric Company | POR | 4.40% | 0.76 | 12.51% | 8.11% | 10.60% | 11.08% |
| PPL Corporation | PPL | 4.40% | 0.84 | 12.51% | 8.11% | 11.19% | 11.52% |
| Southern Company | SO | 4.40% | 0.68 | 12.51% | 8.11% | 9.93% | 10.58% |
| Xcel Energy Inc. | XEL | 4.40% | 0.67 | 12.51% | 8.11% | 9.86% | 10.52% |
| Mean | | | | | | 10.61% | 11.09% |
| Median | | | | | | 10.60% | 11.08% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 2
[2] Source: Schedule AEB-D2, Attachment 5
[3] Source: Schedule AEB-D2, Attachment 6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT BETA

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

| | | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|
| Company | Ticker | Projected 30-year U.S. Treasury bond yield (2023 - 2027) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | ROE (K) | ECAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.30% | 0.76 | 12.51% | 8.21% | 10.57% | 11.06% |
| American Electric Power Company, Inc. | AEP | 4.30% | 0.69 | 12.51% | 8.21% | 9.94% | 10.58% |
| Avista Corporation | AVA | 4.30% | 0.80 | 12.51% | 8.21% | 10.83% | 11.25% |
| CMS Energy Corporation | CMS | 4.30% | 0.70 | 12.51% | 8.21% | 10.09% | 10.69% |
| DTE Energy Company | DTE | 4.30% | 0.77 | 12.51% | 8.21% | 10.65% | 11.11% |
| Duke Energy Corporation | DUK | 4.30% | 0.69 | 12.51% | 8.21% | 9.94% | 10.58% |
| Entergy Corporation | ETR | 4.30% | 0.76 | 12.51% | 8.21% | 10.57% | 11.06% |
| Evergy, Inc. | EVRG | 4.30% | 0.94 | 12.51% | 8.21% | 12.00% | 12.13% |
| IDACORP, Inc. | IDA | 4.30% | 0.74 | 12.51% | 8.21% | 10.39% | 10.92% |
| NextEra Energy, Inc. | NEE | 4.30% | 0.75 | 12.51% | 8.21% | 10.50% | 11.00% |
| NorthWestern Corporation | NWE | 4.30% | 0.76 | 12.51% | 8.21% | 10.57% | 11.06% |
| OGE Energy Corporation | OGE | 4.30% | 0.94 | 12.51% | 8.21% | 12.03% | 12.15% |
| Pinnacle West Capital Corporation | PNW | 4.30% | 0.75 | 12.51% | 8.21% | 10.50% | 11.00% |
| Portland General Electric Company | POR | 4.30% | 0.76 | 12.51% | 8.21% | 10.57% | 11.06% |
| PPL Corporation | PPL | 4.30% | 0.84 | 12.51% | 8.21% | 11.17% | 11.51% |
| Southern Company | SO | 4.30% | 0.68 | 12.51% | 8.21% | 9.90% | 10.55% |
| Xcel Energy Inc. | XEL | 4.30% | 0.67 | 12.51% | 8.21% | 9.83% | 10.50% |
| Mean | | | | | | 10.59% | 11.07% |
| Median | | | | | | 10.57% | 11.06% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 14
[2] Source: Schedule AEB-D2, Attachment 5
[3] Source: Schedule AEB-D2, Attachment 6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

HISTORICAL BETA - 2013 - 2023

| | | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] | [12] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Company | Ticker | 12/31/2013 | 12/31/2014 | 12/31/2015 | 12/31/2016 | 12/31/2017 | 12/31/2018 | 12/31/2019 | 12/31/2020 | 12/31/2021 | 12/31/2022 | 12/31/2023 | Average |
| Alliant Energy Corporation | LNT | 0.75 | 0.80 | 0.80 | 0.70 | 0.70 | 0.60 | 0.60 | 0.85 | 0.85 | 0.85 | 0.90 | 0.76 |
| American Electric Power Company, Inc. | AEP | 0.70 | 0.70 | 0.70 | 0.65 | 0.65 | 0.55 | 0.55 | 0.75 | 0.75 | 0.75 | 0.80 | 0.69 |
| Avista Corporation | AVA | 0.75 | 0.80 | 0.80 | 0.70 | 0.75 | 0.65 | 0.60 | 0.95 | 0.95 | 0.90 | 0.90 | 0.80 |
| CMS Energy Corporation | CMS | 0.70 | 0.70 | 0.75 | 0.65 | 0.65 | 0.55 | 0.50 | 0.80 | 0.80 | 0.80 | 0.85 | 0.70 |
| DTE Energy Company | DTE | 0.80 | 0.75 | 0.75 | 0.65 | 0.65 | 0.55 | 0.55 | 0.95 | 0.95 | 0.95 | 0.95 | 0.77 |
| Duke Energy Corporation | DUK | 0.65 | 0.60 | 0.65 | 0.60 | 0.60 | 0.50 | 0.50 | 0.85 | 0.85 | 0.85 | 0.90 | 0.69 |
| Entergy Corporation | ETR | 0.70 | 0.70 | 0.70 | 0.65 | 0.65 | 0.60 | 0.60 | 0.95 | 0.95 | 0.95 | 0.95 | 0.76 |
| Evergy, Inc. | EVRG | | | | | | NMF | NMF | 1.00 | 0.95 | 0.90 | 0.90 | 0.94 |
| IDACORP, Inc. | IDA | 0.75 | 0.80 | 0.80 | 0.75 | 0.70 | 0.55 | 0.55 | 0.80 | 0.80 | 0.80 | 0.85 | 0.74 |
| NextEra Energy, Inc. | NEE | 0.70 | 0.70 | 0.75 | 0.65 | 0.65 | 0.55 | 0.55 | 0.90 | 0.90 | 0.95 | 1.00 | 0.75 |
| NorthWestern Corporation | NWE | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.55 | 0.60 | 0.95 | 0.95 | 0.90 | 0.95 | 0.76 |
| OGE Energy Corporation | OGE | 0.85 | 0.90 | 0.95 | 0.90 | 0.95 | 0.85 | 0.75 | 1.10 | 1.05 | 1.00 | 1.05 | 0.94 |
| Pinnacle West Capital Corporation | PNW | 0.75 | 0.70 | 0.75 | 0.70 | 0.70 | 0.55 | 0.50 | 0.90 | 0.90 | 0.90 | 0.95 | 0.75 |
| Portland General Electric Company | POR | 0.75 | 0.80 | 0.80 | 0.70 | 0.70 | 0.60 | 0.55 | 0.85 | 0.90 | 0.85 | 0.90 | 0.76 |
| PPL Corporation | PPL | 0.65 | 0.60 | 0.70 | 0.70 | 0.75 | 0.70 | 0.70 | 1.15 | 1.10 | 1.05 | 1.10 | 0.84 |
| Southern Company | SO | 0.55 | 0.55 | 0.60 | 0.55 | 0.55 | 0.50 | 0.50 | 0.90 | 0.95 | 0.90 | 0.95 | 0.68 |
| Xcel Energy Inc. | XEL | 0.65 | 0.65 | 0.65 | 0.60 | 0.60 | 0.50 | 0.50 | 0.80 | 0.80 | 0.80 | 0.85 | 0.67 |
| Mean | | 0.71 | 0.72 | 0.74 | 0.68 | 0.68 | 0.58 | 0.57 | 0.91 | 0.91 | 0.89 | 0.93 | 0.77 |

Notes:
[1] Value Line, dated December 26, 2013.
[2] Value Line, dated December 31, 2014.
[3] Value Line, dated December 30, 2015.
[4] Value Line, dated December 29, 2016.
[5] Value Line, dated December 28, 2017.
[6] Value Line, dated December 27, 2018.
[7] Value Line, dated December 26, 2019.
[8] Value Line, dated December 30, 2020.
[9] Value Line, dated December 29, 2021.
[10] Value Line, dated December 30, 2022.
[11] Value Line, Dated December 29, 2023.
[12] Average ([1] - [11])

MARKET RISK PREMIUM DERIVED FROM ANALYSTS' LONG-TERM GROWTH ESTIMATES

| | |
|---|---|
| [1] Estimated Weighted Average Dividend Yield | 1.60% |
| [2] Estimated Weighted Average Long-Term Growth Rate | 10.83% |
| [3] S&P 500 Estimated Required Market Return | 12.51% |

STANDARD AND POOR'S 500 INDEX

| Name | Ticker | [4] Shares Outst'g | [5] Price | [6] Market Capitalization | [7] Weight in Index | [8] Estimated Dividend Yield | [9] Cap-Weighted Dividend Yield | [10] Value Line Long-Term Growth Est. | [11] Cap-Weighted Long-Term Growth Est. |
|---|---|---|---|---|---|---|---|---|---|
| LyondellBasell Industries NV | LYB | 325.62 | 98.08 | 31,937 | 0.10% | 5.46% | 0.01% | 10.72% | 0.01% |
| American Express Co | AXP | 719.30 | 240.00 | 172,633 | 0.51% | 1.17% | 0.01% | 15.23% | 0.08% |
| Verizon Communications Inc | VZ | 4,209.26 | 41.15 | 173,211 | 0.52% | 6.46% | 0.03% | 1.22% | 0.01% |
| Broadcom Inc | AVGO | 463.42 | 1,328.55 | 615,678 | 1.83% | 1.58% | 0.03% | 14.54% | 0.27% |
| Boeing Co/The | BA | 613.88 | 177.61 | 109,032 | | | | 50.92% | |
| Solventum Corp | SOLV | 172.71 | 59.34 | 10,249 | | | | | |
| Caterpillar Inc | CAT | 489.05 | 338.52 | 165,554 | 0.49% | 1.54% | 0.01% | 7.70% | 0.04% |
| JPMorgan Chase & Co | JPM | 2,871.67 | 202.63 | 581,886 | 1.73% | 2.27% | 0.04% | 3.03% | 0.05% |
| Chevron Corp | CVX | 1,847.32 | 162.30 | 299,820 | | 4.02% | | | |
| Coca-Cola Co/The | KO | 4,307.96 | 62.93 | 271,100 | 0.81% | 3.08% | 0.02% | 6.36% | 0.05% |
| AbbVie Inc | ABBV | 1,765.87 | 161.24 | 284,729 | 0.85% | 3.85% | 0.03% | 8.34% | 0.07% |
| Walt Disney Co/The | DIS | 1,823.04 | 103.91 | 189,432 | | 0.87% | | 20.89% | |
| Corpay Inc | CPAY | 70.27 | 267.67 | 18,809 | 0.06% | | | 14.22% | 0.01% |
| Extra Space Storage Inc | EXR | 211.73 | 144.77 | 30,651 | 0.09% | 4.48% | 0.00% | 1.86% | 0.00% |
| Exxon Mobil Corp | XOM | 4,485.93 | 117.26 | 526,020 | 1.57% | 3.24% | 0.05% | 6.00% | 0.09% |
| Phillips 66 | PSX | 423.95 | 142.11 | 60,248 | | 3.24% | | | |
| General Electric Co | GE | 1,094.61 | 165.14 | 180,763 | | 0.68% | | 32.59% | |
| HP Inc | HPQ | 978.56 | 36.50 | 35,717 | 0.11% | 3.02% | 0.00% | 5.12% | 0.01% |
| Home Depot Inc/The | HD | 991.61 | 334.87 | 332,062 | 0.99% | 2.69% | 0.03% | 3.43% | 0.03% |
| Monolithic Power Systems Inc | MPWR | 48.67 | 735.63 | 35,805 | 0.11% | 0.68% | 0.00% | 18.00% | 0.02% |
| International Business Machines Corp | IBM | 918.60 | 166.85 | 153,269 | 0.46% | 4.00% | 0.02% | 3.19% | 0.01% |
| Johnson & Johnson | JNJ | 2,406.68 | 146.67 | 352,988 | 1.05% | 3.38% | 0.04% | 4.99% | 0.05% |
| Lululemon Athletica Inc | LULU | 120.89 | 311.99 | 37,717 | 0.11% | | | 9.86% | 0.01% |
| McDonald's Corp | MCD | 720.68 | 257.22 | 185,374 | 0.55% | 2.60% | 0.01% | 7.51% | 0.04% |
| Merck & Co Inc | MRK | 2,532.81 | 125.54 | 317,968 | | 2.45% | | 53.01% | |
| 3M Co | MMM | 553.36 | 100.14 | 55,414 | | 2.80% | | -7.15% | |
| American Water Works Co Inc | AWK | 194.82 | 130.77 | 25,477 | 0.08% | 2.34% | 0.00% | 7.70% | 0.01% |
| Bank of America Corp | BAC | 7,820.37 | 39.99 | 312,737 | | 2.40% | | -6.00% | |
| Pfizer Inc | PFE | 5,666.59 | 28.66 | 162,405 | 0.48% | 5.86% | 0.03% | 8.39% | 0.04% |
| Procter & Gamble Co/The | PG | 2,360.14 | 164.54 | 388,337 | 1.16% | 2.45% | 0.03% | 8.09% | 0.09% |
| AT&T Inc | T | 7,170.17 | 18.22 | 130,640 | 0.39% | 6.09% | 0.02% | 2.55% | 0.01% |
| Travelers Cos Inc/The | TRV | 228.99 | 215.70 | 49,394 | 0.15% | 1.95% | 0.00% | 18.34% | 0.03% |
| RTX Corp | RTX | 1,329.51 | 107.81 | 143,334 | 0.43% | 2.34% | 0.01% | 10.62% | 0.05% |
| Analog Devices Inc | ADI | 496.22 | 233.56 | 115,897 | | 1.58% | | -2.75% | |
| Walmart Inc | WMT | 8,058.05 | 65.76 | 529,897 | 1.58% | 1.26% | 0.02% | 8.23% | 0.13% |
| Cisco Systems Inc | CSCO | 4,049.19 | 46.50 | 188,287 | 0.56% | 3.44% | 0.02% | 0.93% | 0.01% |
| Intel Corp | INTC | 4,256.87 | 30.85 | 131,325 | 0.39% | 1.62% | 0.01% | 11.40% | 0.04% |
| General Motors Co | GM | 1,140.40 | 44.99 | 51,306 | 0.15% | 1.07% | 0.00% | 16.07% | 0.02% |
| Microsoft Corp | MSFT | 7,432.31 | 415.13 | 3,085,373 | 9.19% | 0.72% | 0.07% | 14.81% | 1.36% |
| Dollar General Corp | DG | 219.90 | 136.91 | 30,106 | | 1.72% | | -2.08% | |
| Cigna Group/The | CI | 284.07 | 343.21 | 97,496 | 0.29% | 1.63% | 0.00% | 11.65% | 0.03% |
| Kinder Morgan Inc | KMI | 2,219.38 | 19.49 | 43,256 | 0.13% | 5.90% | 0.01% | 5.86% | 0.01% |
| Citigroup Inc | C | 1,907.44 | 62.31 | 118,853 | | 3.40% | | 26.67% | |
| American International Group Inc | AIG | 663.67 | 78.82 | 52,310 | 0.16% | 2.03% | 0.00% | 11.85% | 0.02% |
| Altria Group Inc | MO | 1,717.63 | 46.25 | 79,440 | 0.24% | 8.48% | 0.02% | 3.89% | 0.01% |
| HCA Healthcare Inc | HCA | 261.91 | 339.75 | 88,985 | 0.27% | 0.78% | 0.00% | 9.57% | 0.03% |
| International Paper Co | IP | 347.33 | 45.09 | 15,661 | | 4.10% | | -2.00% | |
| Hewlett Packard Enterprise Co | HPE | 1,300.00 | 17.65 | 22,945 | 0.07% | 2.95% | 0.00% | 2.86% | 0.00% |
| Abbott Laboratories | ABT | 1,739.63 | 102.19 | 177,773 | 0.53% | 2.15% | 0.01% | 8.00% | 0.04% |
| Aflac Inc | AFL | 568.22 | 89.87 | 51,066 | 0.15% | 2.23% | 0.00% | 7.55% | 0.01% |
| Air Products and Chemicals Inc | APD | 222.31 | 266.70 | 59,289 | 0.18% | 2.65% | 0.00% | 9.63% | 0.02% |
| Super Micro Computer Inc | SMCI | 58.56 | 784.51 | 45,939 | | | | 53.18% | |
| Royal Caribbean Cruises Ltd | RCL | 257.35 | 147.68 | 38,005 | | | | 29.92% | |
| Hess Corp | HES | 308.11 | 154.10 | 47,480 | 0.14% | 1.14% | 0.00% | 18.00% | 0.03% |
| Archer-Daniels-Midland Co | ADM | 494.44 | 62.44 | 30,873 | | 3.20% | | -2.85% | |
| Automatic Data Processing Inc | ADP | 409.29 | 244.92 | 100,244 | 0.30% | 2.29% | 0.01% | 11.31% | 0.03% |
| Verisk Analytics Inc | VRSK | 142.68 | 252.78 | 36,065 | 0.11% | 0.62% | 0.00% | 11.71% | 0.01% |
| AutoZone Inc | AZO | 17.30 | 2,769.94 | 47,928 | 0.14% | | | 14.66% | 0.02% |
| Linde PLC | LIN | 480.68 | 434.13 | 208,674 | 0.62% | 1.28% | 0.01% | 11.82% | 0.07% |
| Avery Dennison Corp | AVY | 80.55 | 227.59 | 18,333 | 0.05% | 1.55% | 0.00% | 11.67% | 0.01% |
| Enphase Energy Inc | ENPH | 136.06 | 127.90 | 17,402 | 0.05% | | | 18.17% | 0.01% |
| MSCI Inc | MSCI | 79.22 | 495.18 | 39,230 | 0.12% | 1.29% | 0.00% | 11.58% | 0.01% |
| Ball Corp | BALL | 310.38 | 69.23 | 21,487 | 0.06% | 1.16% | 0.00% | 11.78% | 0.01% |
| Axon Enterprise Inc | AXON | 75.47 | 281.67 | 21,257 | | | | | |
| Dayforce Inc | DAY | 155.56 | 49.46 | 7,694 | | | | | |
| Carrier Global Corp | CARR | 901.01 | 63.19 | 56,935 | 0.17% | 1.20% | 0.00% | 7.87% | 0.01% |
| Bank of New York Mellon Corp/The | BK | 747.82 | 59.61 | 44,577 | 0.13% | 2.82% | 0.00% | 10.01% | 0.01% |
| Otis Worldwide Corp | OTIS | 404.32 | 99.20 | 40,109 | 0.12% | 1.57% | 0.00% | 9.00% | 0.01% |
| Baxter International Inc | BAX | 509.58 | 34.09 | 17,372 | 0.05% | 3.40% | 0.00% | 9.78% | 0.01% |
| Becton Dickinson & Co | BDX | 289.01 | 231.97 | 67,041 | 0.20% | 1.64% | 0.00% | 7.77% | 0.02% |
| Berkshire Hathaway Inc | BRK/B | 1,311.39 | 414.40 | 543,438 | | | | | |
| Best Buy Co Inc | BBY | 215.38 | 84.82 | 18,269 | 0.05% | 4.43% | 0.00% | 0.05% | 0.00% |
| Boston Scientific Corp | BSX | 1,470.18 | 75.57 | 111,102 | 0.33% | | | 12.08% | 0.04% |
| Bristol-Myers Squibb Co | BMY | 2,027.10 | 41.09 | 83,294 | | 5.84% | | -4.12% | |
| Brown-Forman Corp | BF/B | 303.42 | 45.86 | 13,915 | 0.04% | 1.90% | 0.00% | 3.39% | 0.00% |
| Coterra Energy Inc | CTRA | 744.23 | 28.52 | 21,226 | | 2.95% | | | |
| Campbell Soup Co | CPB | 298.10 | 44.38 | 13,230 | 0.04% | 3.33% | 0.00% | 4.87% | 0.00% |
| Hilton Worldwide Holdings Inc | HLT | 250.05 | 200.60 | 50,159 | 0.15% | 0.30% | 0.00% | 15.52% | 0.02% |
| Carnival Corp | CCL | 1,122.32 | 15.08 | 16,925 | | | | | |
| Qorvo Inc | QRVO | 95.63 | 98.39 | 9,409 | | | | 20.04% | |
| Builders FirstSource Inc | BLDR | 122.06 | 160.79 | 19,626 | 0.06% | | | 8.54% | 0.00% |
| UDR Inc | UDR | 329.31 | 38.62 | 12,718 | 0.04% | 4.40% | 0.00% | 1.85% | 0.00% |
| Clorox Co/The | CLX | 124.19 | 131.56 | 16,338 | 0.05% | 3.65% | 0.00% | 15.46% | 0.01% |
| Paycom Software Inc | PAYC | 58.11 | 145.32 | 8,445 | 0.03% | 1.03% | 0.00% | 6.00% | 0.00% |
| CMS Energy Corp | CMS | 298.64 | 62.93 | 18,793 | 0.06% | 3.27% | 0.00% | 7.42% | 0.00% |
| Colgate-Palmolive Co | CL | 820.44 | 92.96 | 76,268 | 0.23% | 2.15% | 0.00% | 8.36% | 0.02% |
| EPAM Systems Inc | EPAM | 57.97 | 177.93 | 10,315 | 0.03% | | | 5.54% | 0.00% |
| Comerica Inc | CMA | 132.59 | 51.24 | 6,794 | 0.02% | 5.54% | 0.00% | 9.79% | 0.00% |
| Conagra Brands Inc | CAG | 478.06 | 29.88 | 14,285 | 0.04% | 4.69% | 0.00% | 1.82% | 0.00% |
| Airbnb Inc | ABNB | 441.50 | 144.93 | 63,987 | | | | 20.22% | |

STANDARD AND POOR'S 500 INDEX

| Name | Ticker | [4] Shares Outst'g | [5] Price | [6] Market Capitalization | [7] Weight in Index | [8] Estimated Dividend Yield | [9] Cap-Weighted Dividend Yield | [10] Value Line Long-Term Growth Est. | [11] Cap-Weighted Long-Term Growth Est. |
|---|---|---|---|---|---|---|---|---|---|
| Consolidated Edison Inc | ED | 344.92 | 94.55 | 32,613 | 0.10% | 3.51% | 0.00% | 5.70% | 0.01% |
| Corning Inc | GLW | 856.62 | 37.26 | 31,918 | 0.10% | 3.01% | 0.00% | 12.03% | 0.01% |
| Cummins Inc | CMI | 136.78 | 281.73 | 38,535 | 0.11% | 2.39% | 0.00% | 7.56% | 0.01% |
| Caesars Entertainment Inc | CZR | 216.42 | 35.56 | 7,696 | | | | -32.44% | |
| Danaher Corp | DHR | 740.69 | 256.80 | 190,208 | 0.57% | 0.42% | 0.00% | 3.84% | 0.02% |
| Target Corp | TGT | 462.64 | 156.16 | 72,245 | 0.22% | 2.82% | 0.01% | 13.97% | 0.03% |
| Deere & Co | DE | 275.57 | 374.76 | 103,273 | | 1.57% | | -6.84% | |
| Dominion Energy Inc | D | 837.59 | 53.92 | 45,163 | 0.13% | 4.95% | 0.01% | 14.16% | 0.02% |
| Dover Corp | DOV | 137.43 | 183.82 | 25,262 | 0.08% | 1.11% | 0.00% | 7.56% | 0.01% |
| Alliant Energy Corp | LNT | 256.38 | 51.49 | 13,201 | 0.04% | 3.73% | 0.00% | 7.00% | 0.00% |
| Steel Dynamics Inc | STLD | 157.13 | 133.87 | 21,035 | | 1.37% | | -3.32% | |
| Duke Energy Corp | DUK | 771.00 | 103.57 | 79,852 | 0.24% | 3.96% | 0.01% | 6.53% | 0.02% |
| Regency Centers Corp | REG | 184.58 | 61.40 | 11,333 | 0.03% | 4.36% | 0.00% | 3.27% | 0.00% |
| Eaton Corp PLC | ETN | 399.89 | 332.85 | 133,104 | 0.40% | 1.13% | 0.00% | 13.83% | 0.05% |
| Ecolab Inc | ECL | 285.57 | 232.20 | 66,309 | 0.20% | 0.98% | 0.00% | 17.31% | 0.03% |
| Revvity Inc | RVTY | 123.39 | 109.26 | 13,482 | 0.04% | 0.26% | 0.00% | 8.26% | 0.00% |
| Emerson Electric Co | EMR | 572.10 | 112.16 | 64,167 | 0.19% | 1.87% | 0.00% | 15.07% | 0.03% |
| EOG Resources Inc | EOG | 574.71 | 124.55 | 71,580 | | 2.92% | | | |
| Aon PLC | AON | 217.43 | 281.64 | 61,237 | 0.18% | 0.96% | 0.00% | 10.38% | 0.02% |
| Entergy Corp | ETR | 213.27 | 112.49 | 23,991 | 0.07% | 4.02% | 0.00% | 6.98% | 0.00% |
| Equifax Inc | EFX | 123.61 | 231.39 | 28,602 | 0.09% | 0.67% | 0.00% | 15.31% | 0.01% |
| EQT Corp | EQT | 441.59 | 41.09 | 18,145 | | 1.53% | | | |
| IQVIA Holdings Inc | IQV | 182.20 | 219.09 | 39,918 | 0.12% | | | 10.44% | 0.01% |
| Gartner Inc | IT | 77.63 | 419.67 | 32,579 | 0.10% | | | 9.89% | 0.01% |
| FedEx Corp | FDX | 246.08 | 253.96 | 62,495 | 0.19% | 1.98% | 0.00% | 17.71% | 0.03% |
| FMC Corp | FMC | 124.82 | 60.95 | 7,608 | 0.02% | 3.81% | 0.00% | 18.88% | 0.00% |
| Brown & Brown Inc | BRO | 285.25 | 89.51 | 25,533 | 0.08% | 0.58% | 0.00% | 9.77% | 0.01% |
| Ford Motor Co | F | 3,921.49 | 12.13 | 47,568 | 0.14% | 4.95% | 0.01% | 1.67% | 0.00% |
| NextEra Energy Inc | NEE | 2,055.00 | 79.51 | 163,383 | 0.49% | 2.59% | 0.01% | 8.10% | 0.04% |
| Franklin Resources Inc | BEN | 526.09 | 23.60 | 12,416 | | 5.25% | | | |
| Garmin Ltd | GRMN | 192.08 | 163.85 | 31,472 | 0.09% | 1.83% | 0.00% | 8.04% | 0.01% |
| Freeport-McMoRan Inc | FCX | 1,436.49 | 52.73 | 75,746 | 0.23% | 1.14% | 0.00% | 16.49% | 0.04% |
| Dexcom Inc | DXCM | 397.68 | 118.77 | 47,233 | | | | 23.63% | |
| General Dynamics Corp | GD | 274.36 | 299.77 | 82,246 | 0.24% | 1.89% | 0.00% | 14.18% | 0.03% |
| General Mills Inc | GIS | 564.55 | 68.75 | 38,813 | | 3.43% | | 0.00% | |
| Genuine Parts Co | GPC | 139.30 | 144.14 | 20,079 | | 2.78% | | | |
| Atmos Energy Corp | ATO | 150.88 | 115.92 | 17,490 | 0.05% | 2.78% | 0.00% | 7.00% | 0.00% |
| WW Grainger Inc | GWW | 49.07 | 921.46 | 45,215 | | 0.89% | | | |
| Halliburton Co | HAL | 885.30 | 36.70 | 32,491 | 0.10% | 1.85% | 0.00% | 11.60% | 0.01% |
| L3Harris Technologies Inc | LHX | 189.68 | 223.68 | 42,427 | 0.13% | 2.07% | 0.00% | 8.53% | 0.01% |
| Healthpeak Properties Inc | DOC | 703.78 | 19.90 | 14,005 | 0.04% | 6.03% | 0.00% | 4.48% | 0.00% |
| Insulet Corp | PODD | 70.04 | 177.19 | 12,410 | | | | 28.44% | |
| Catalent Inc | CTLT | 180.98 | 53.79 | 9,735 | | | | 28.24% | |
| Fortive Corp | FTV | 352.03 | 74.44 | 26,205 | 0.08% | 0.43% | 0.00% | 8.98% | 0.01% |
| Hershey Co/The | HSY | 147.62 | 197.83 | 29,203 | 0.09% | 2.77% | 0.00% | 2.36% | 0.00% |
| Synchrony Financial | SYF | 401.54 | 43.80 | 17,588 | | 2.28% | | | |
| Hormel Foods Corp | HRL | 548.31 | 30.98 | 16,986 | 0.05% | 3.65% | 0.00% | 6.59% | 0.00% |
| Arthur J Gallagher & Co | AJG | 218.50 | 253.33 | 55,353 | 0.16% | 0.95% | 0.00% | 12.49% | 0.02% |
| Mondelez International Inc | MDLZ | 1,341.36 | 68.53 | 91,923 | 0.27% | 2.48% | 0.01% | 7.65% | 0.02% |
| CenterPoint Energy Inc | CNP | 639.72 | 30.51 | 19,518 | 0.06% | 2.62% | 0.00% | 7.95% | 0.00% |
| Humana Inc | HUM | 120.50 | 358.12 | 43,154 | | 0.99% | | -1.30% | |
| Willis Towers Watson PLC | WTW | 102.24 | 255.29 | 26,100 | 0.08% | 1.38% | 0.00% | 12.41% | 0.01% |
| Illinois Tool Works Inc | ITW | 298.40 | 242.75 | 72,437 | 0.22% | 2.31% | 0.00% | 7.26% | 0.02% |
| CDW Corp/DE | CDW | 134.40 | 223.62 | 30,054 | 0.09% | 1.11% | 0.00% | 7.02% | 0.01% |
| Trane Technologies PLC | TT | 226.35 | 327.46 | 74,121 | 0.22% | 1.03% | 0.00% | 13.47% | 0.03% |
| Interpublic Group of Cos Inc/The | IPG | 377.42 | 31.04 | 11,714 | 0.03% | 4.25% | 0.00% | 3.91% | 0.00% |
| International Flavors & Fragrances Inc | IFF | 255.35 | 96.18 | 24,560 | 0.07% | 1.66% | 0.00% | 0.23% | 0.00% |
| Generac Holdings Inc | GNRC | 60.61 | 147.21 | 8,923 | 0.03% | | | 7.00% | 0.00% |
| NXP Semiconductors NV | NXPI | 255.68 | 272.10 | 69,572 | 0.21% | 1.49% | 0.00% | 6.92% | 0.01% |
| Kellanova | K | 341.88 | 59.78 | 20,438 | 0.06% | 3.75% | 0.00% | 8.42% | 0.01% |
| Broadridge Financial Solutions Inc | BR | 118.18 | 200.77 | 23,727 | | 1.59% | | | |
| Kimberly-Clark Corp | KMB | 336.71 | 133.30 | 44,883 | 0.13% | 3.66% | 0.00% | 7.72% | 0.01% |
| Kimco Realty Corp | KIM | 674.12 | 19.36 | 13,051 | 0.04% | 4.96% | 0.00% | 3.25% | 0.00% |
| Oracle Corp | ORCL | 2,748.51 | 117.19 | 322,098 | 0.96% | 1.37% | 0.01% | 11.24% | 0.11% |
| Kroger Co/The | KR | 721.69 | 52.37 | 37,795 | 0.11% | 2.22% | 0.00% | 6.00% | 0.01% |
| Lennar Corp | LEN | 245.04 | 160.35 | 39,292 | 0.12% | 1.25% | 0.00% | 8.82% | 0.01% |
| Eli Lilly & Co | LLY | 950.41 | 820.34 | 779,655 | | 0.63% | | 40.01% | |
| Bath & Body Works Inc | BBWI | 223.67 | 51.94 | 11,617 | 0.03% | 1.54% | 0.00% | 13.65% | 0.00% |
| Charter Communications Inc | CHTR | 144.39 | 287.12 | 41,456 | 0.12% | | | 5.89% | 0.01% |
| Loews Corp | L | 221.41 | 76.80 | 17,004 | | 0.33% | | | |
| Lowe's Cos Inc | LOW | 569.84 | 221.29 | 126,099 | 0.38% | 2.08% | 0.01% | 1.52% | 0.01% |
| Hubbell Inc | HUBB | 53.69 | 388.89 | 20,878 | 0.06% | 1.25% | 0.00% | 18.00% | 0.01% |
| IDEX Corp | IEX | 75.70 | 208.64 | 15,793 | | 1.32% | | | |
| Marsh & McLennan Cos Inc | MMC | 492.72 | 207.58 | 102,280 | 0.30% | 1.37% | 0.00% | 8.12% | 0.02% |
| Masco Corp | MAS | 220.24 | 69.92 | 15,399 | 0.05% | 1.66% | 0.00% | 8.64% | 0.00% |
| S&P Global Inc | SPGI | 320.26 | 427.51 | 136,913 | 0.41% | 0.85% | 0.00% | 13.11% | 0.05% |
| Medtronic PLC | MDT | 1,327.82 | 81.37 | 108,045 | 0.32% | 3.44% | 0.01% | 5.61% | 0.02% |
| Viatris Inc | VTRS | 1,190.68 | 10.60 | 12,621 | | 4.53% | | -2.57% | |
| CVS Health Corp | CVS | 1,255.37 | 59.60 | 74,820 | 0.22% | 4.46% | 0.01% | 4.01% | 0.01% |
| DuPont de Nemours Inc | DD | 418.10 | 82.16 | 34,351 | 0.10% | 1.85% | 0.00% | 1.03% | 0.00% |
| Micron Technology Inc | MU | 1,107.37 | 125.00 | 138,421 | | 0.37% | | -4.00% | |
| Motorola Solutions Inc | MSI | 166.79 | 364.91 | 60,862 | 0.18% | 1.07% | 0.00% | 8.89% | 0.02% |
| Cboe Global Markets Inc | CBOE | 105.15 | 172.99 | 18,191 | 0.05% | 1.27% | 0.00% | 14.28% | 0.01% |
| Newmont Corp | NEM | 1,153.16 | 41.69 | 48,075 | | 2.40% | | | |
| NIKE Inc | NKE | 1,211.46 | 94.68 | 114,701 | 0.34% | 1.56% | 0.01% | 10.85% | 0.04% |
| NiSource Inc | NI | 448.31 | 29.06 | 13,028 | 0.04% | 3.65% | 0.00% | 7.00% | 0.00% |
| Norfolk Southern Corp | NSC | 225.91 | 224.80 | 50,785 | 0.15% | 2.40% | 0.00% | 8.84% | 0.01% |
| Principal Financial Group Inc | PFG | 234.38 | 81.33 | 19,062 | 0.06% | 3.49% | 0.00% | 12.40% | 0.01% |
| Eversource Energy | ES | 350.73 | 59.23 | 20,774 | 0.06% | 4.83% | 0.00% | 4.83% | 0.00% |
| Northrop Grumman Corp | NOC | 147.99 | 450.77 | 66,709 | 0.20% | 1.83% | 0.00% | 18.34% | 0.04% |
| Wells Fargo & Co | WFC | 3,486.32 | 59.92 | 208,900 | 0.62% | 2.34% | 0.01% | 7.97% | 0.05% |
| Nucor Corp | NUE | 239.76 | 168.85 | 40,484 | | 1.28% | | | |
| Occidental Petroleum Corp | OXY | 886.64 | 62.50 | 55,415 | 0.17% | 1.41% | 0.00% | 20.00% | 0.03% |
| Omnicom Group Inc | OMC | 195.83 | 92.96 | 18,205 | 0.05% | 3.01% | 0.00% | 7.48% | 0.00% |
| ONEOK Inc | OKE | 583.65 | 81.00 | 47,275 | 0.14% | 4.89% | 0.01% | 2.55% | 0.00% |
| Raymond James Financial Inc | RJF | 207.28 | 122.75 | 25,443 | 0.08% | 1.47% | 0.00% | 15.38% | 0.01% |
| PG&E Corp | PCG | 2,133.51 | 18.54 | 39,555 | 0.12% | 0.22% | 0.00% | 10.10% | 0.01% |
| Parker-Hannifin Corp | PH | 128.54 | 531.52 | 68,322 | 0.20% | 1.23% | 0.00% | 13.84% | 0.03% |
| Rollins Inc | ROL | 484.23 | 45.69 | 22,124 | 0.07% | 1.31% | 0.00% | 13.04% | 0.01% |

STANDARD AND POOR'S 500 INDEX

| Name | Ticker | [4] Shares Outst'g | [5] Price | [6] Market Capitalization | [7] Weight in Index | [8] Estimated Dividend Yield | [9] Cap-Weighted Dividend Yield | [10] Value Line Long-Term Growth Est. | [11] Cap-Weighted Long-Term Growth Est. |
|---|---|---|---|---|---|---|---|---|---|
| PPL Corp | PPL | 737.12 | 29.33 | 21,620 | 0.06% | 3.51% | 0.00% | 7.34% | 0.00% |
| ConocoPhillips | COP | 1,169.53 | 116.48 | 136,227 | 0.41% | 2.68% | 0.01% | 9.00% | 0.04% |
| PulteGroup Inc | PHM | 210.34 | 117.32 | 24,677 | 0.07% | 0.68% | 0.00% | 7.65% | 0.01% |
| Pinnacle West Capital Corp | PNW | 113.56 | 78.86 | 8,955 | 0.03% | 4.46% | 0.00% | 7.61% | 0.00% |
| PNC Financial Services Group Inc/The | PNC | 397.91 | 157.39 | 62,627 | | 3.94% | | 31.00% | |
| PPG Industries Inc | PPG | 235.36 | 131.41 | 30,929 | 0.09% | 1.98% | 0.00% | 8.03% | 0.01% |
| Progressive Corp/The | PGR | 585.70 | 211.18 | 123,688 | | 0.19% | | 32.49% | |
| Veralto Corp | VLTO | 246.85 | 98.58 | 24,334 | | 0.37% | | | |
| Public Service Enterprise Group Inc | PEG | 498.59 | 75.76 | 37,773 | 0.11% | 3.17% | 0.00% | 5.99% | 0.01% |
| Robert Half Inc | RHI | 104.93 | 64.23 | 6,740 | 0.02% | 3.30% | 0.00% | 4.20% | 0.00% |
| Cooper Cos Inc/The | COO | 199.12 | 94.31 | 18,779 | 0.06% | | | 10.00% | 0.01% |
| Edison International | EIX | 383.93 | 76.85 | 29,505 | 0.09% | 4.06% | 0.00% | 7.80% | 0.01% |
| Schlumberger NV | SLB | 1,429.34 | 45.89 | 65,592 | 0.20% | 2.40% | 0.00% | 14.81% | 0.03% |
| Charles Schwab Corp/The | SCHW | 1,777.28 | 73.28 | 130,239 | 0.39% | 1.36% | 0.01% | 14.20% | 0.06% |
| Sherwin-Williams Co/The | SHW | 253.55 | 303.80 | 77,028 | 0.23% | 0.94% | 0.00% | 9.56% | 0.02% |
| West Pharmaceutical Services Inc | WST | 72.84 | 331.41 | 24,141 | 0.07% | 0.24% | 0.00% | 7.72% | 0.01% |
| J M Smucker Co/The | SJM | 106.18 | 111.64 | 11,853 | 0.04% | 3.80% | 0.00% | 7.04% | 0.00% |
| Snap-on Inc | SNA | 52.72 | 272.86 | 14,385 | 0.04% | 2.73% | 0.00% | 3.83% | 0.00% |
| AMETEK Inc | AME | 231.47 | 169.58 | 39,253 | 0.12% | 0.66% | 0.00% | 7.43% | 0.01% |
| Uber Technologies Inc | UBER | 2,089.52 | 64.56 | 134,899 | | | | 61.05% | |
| Southern Co/The | SO | 1,094.63 | 80.14 | 87,724 | 0.26% | 3.59% | 0.01% | 7.10% | 0.02% |
| Truist Financial Corp | TFC | 1,338.10 | 37.75 | 50,513 | 0.15% | 5.51% | 0.01% | 10.51% | 0.02% |
| Southwest Airlines Co | LUV | 598.46 | 26.84 | 16,063 | | 2.68% | | 21.33% | |
| W R Berkley Corp | WRB | 255.66 | 81.03 | 20,716 | 0.06% | 0.54% | 0.00% | 13.64% | 0.01% |
| Stanley Black & Decker Inc | SWK | 153.88 | 86.36 | 13,289 | 0.04% | 3.75% | 0.00% | 7.00% | 0.00% |
| Public Storage | PSA | 175.83 | 273.83 | 48,147 | 0.14% | 4.38% | 0.01% | 3.24% | 0.00% |
| Arista Networks Inc | ANET | 313.36 | 297.65 | 93,272 | 0.28% | | | 12.42% | 0.03% |
| Sysco Corp | SYY | 497.98 | 72.82 | 36,263 | 0.11% | 2.80% | 0.00% | 13.00% | 0.01% |
| Corteva Inc | CTVA | 687.80 | 55.78 | 38,365 | 0.11% | 1.15% | 0.00% | 11.33% | 0.01% |
| Texas Instruments Inc | TXN | 910.48 | 195.01 | 177,553 | | 2.67% | | -1.14% | |
| Textron Inc | TXT | 190.70 | 87.61 | 16,707 | 0.05% | 0.09% | 0.00% | 10.05% | 0.01% |
| Thermo Fisher Scientific Inc | TMO | 381.72 | 567.98 | 216,807 | 0.65% | 0.27% | 0.00% | 7.40% | 0.05% |
| TJX Cos Inc/The | TJX | 1,130.15 | 103.10 | 116,518 | 0.35% | 1.45% | 0.01% | 8.13% | 0.03% |
| Globe Life Inc | GL | 92.27 | 82.76 | 7,636 | 0.02% | 1.16% | 0.00% | 7.00% | 0.00% |
| Johnson Controls International plc | JCI | 673.68 | 71.91 | 48,444 | 0.14% | 2.06% | 0.00% | 9.45% | 0.01% |
| Ulta Beauty Inc | ULTA | 47.72 | 395.09 | 18,852 | 0.06% | | | 6.34% | 0.00% |
| Union Pacific Corp | UNP | 610.12 | 232.82 | 142,049 | 0.42% | 2.23% | 0.01% | 12.88% | 0.05% |
| Keysight Technologies Inc | KEYS | 174.54 | 138.48 | 24,170 | | | | -1.09% | |
| UnitedHealth Group Inc | UNH | 920.39 | 495.37 | 455,931 | 1.36% | 1.52% | 0.02% | 10.38% | 0.14% |
| Blackstone Inc | BX | 714.65 | 120.50 | 86,115 | | 2.76% | | 23.93% | |
| Marathon Oil Corp | MRO | 564.04 | 28.96 | 16,334 | | 1.52% | | | |
| Bio-Rad Laboratories Inc | BIO | 23.45 | 286.86 | 6,726 | | | | | |
| Ventas Inc | VTR | 404.77 | 50.26 | 20,344 | 0.06% | 3.58% | 0.00% | 6.19% | 0.00% |
| Labcorp Holdings Inc | LH | 84.29 | 194.91 | 16,430 | 0.05% | 1.48% | 0.00% | 1.23% | 0.00% |
| Vulcan Materials Co | VMC | 132.25 | 255.77 | 33,826 | 0.10% | 0.72% | 0.00% | 15.71% | 0.02% |
| Weyerhaeuser Co | WY | 729.62 | 30.03 | 21,910 | | 2.66% | | -0.33% | |
| Williams Cos Inc/The | WMB | 1,218.75 | 41.51 | 50,590 | 0.15% | 4.58% | 0.01% | 3.94% | 0.01% |
| Constellation Energy Corp | CEG | 315.12 | 217.25 | 68,460 | 0.20% | 0.65% | 0.00% | 11.80% | 0.02% |
| WEC Energy Group Inc | WEC | 315.82 | 81.03 | 25,591 | 0.08% | 4.12% | 0.00% | 6.85% | 0.01% |
| Adobe Inc | ADBE | 448.00 | 444.76 | 199,252 | 0.59% | | | 16.73% | 0.10% |
| Vistra Corp | VST | 347.46 | 99.08 | 34,426 | | 0.88% | | | |
| AES Corp/The | AES | 710.67 | 21.59 | 15,343 | | 3.20% | | | |
| Expeditors International of Washington Inc | EXPD | 141.25 | 120.17 | 16,974 | 0.05% | 1.21% | 0.00% | 3.78% | 0.00% |
| Amgen Inc | AMGN | 536.44 | 305.85 | 164,069 | 0.49% | 2.94% | 0.01% | 6.22% | 0.03% |
| Apple Inc | AAPL | 15,334.08 | 192.25 | 2,947,977 | 8.78% | 0.52% | 0.05% | 12.73% | 1.12% |
| Autodesk Inc | ADSK | 213.92 | 201.60 | 43,125 | 0.13% | | | 12.76% | 0.02% |
| Cintas Corp | CTAS | 101.46 | 677.97 | 68,789 | 0.20% | 0.80% | 0.00% | 12.04% | 0.02% |
| Comcast Corp | CMCSA | 3,914.18 | 40.03 | 156,685 | 0.47% | 3.10% | 0.01% | 8.33% | 0.04% |
| Molson Coors Beverage Co | TAP | 197.55 | 54.81 | 10,828 | 0.03% | 3.21% | 0.00% | 4.65% | 0.00% |
| KLA Corp | KLAC | 134.64 | 759.53 | 102,263 | 0.30% | 0.76% | 0.00% | 8.99% | 0.03% |
| Marriott International Inc/MD | MAR | 285.62 | 231.17 | 66,027 | 0.20% | 1.09% | 0.00% | 5.56% | 0.01% |
| Fiserv Inc | FI | 585.10 | 149.76 | 87,625 | 0.26% | | | 15.47% | 0.04% |
| McCormick & Co Inc/MD | MKC | 251.75 | 72.22 | 18,181 | 0.05% | 2.33% | 0.00% | 5.96% | 0.00% |
| PACCAR Inc | PCAR | 524.15 | 107.50 | 56,346 | | 1.12% | | -2.16% | |
| Costco Wholesale Corp | COST | 443.50 | 809.89 | 359,189 | 1.07% | 0.57% | 0.01% | 9.64% | 0.10% |
| Stryker Corp | SYK | 380.95 | 341.09 | 129,938 | 0.39% | 0.94% | 0.00% | 8.39% | 0.03% |
| Tyson Foods Inc | TSN | 286.02 | 57.25 | 16,374 | | 3.42% | | 53.92% | |
| Lamb Weston Holdings Inc | LW | 144.39 | 88.29 | 12,748 | 0.04% | 1.63% | 0.00% | 11.56% | 0.00% |
| Applied Materials Inc | AMAT | 827.98 | 215.08 | 178,081 | 0.53% | 0.74% | 0.00% | 15.06% | 0.08% |
| American Airlines Group Inc | AAL | 653.54 | 11.50 | 7,516 | | | | -4.75% | |
| Cardinal Health Inc | CAH | 243.57 | 99.27 | 24,179 | 0.07% | 2.04% | 0.00% | 13.47% | 0.01% |
| Cincinnati Financial Corp | CINF | 156.56 | 117.58 | 18,408 | 0.05% | 2.76% | 0.00% | 7.35% | 0.00% |
| Paramount Global | PARA | 625.78 | 11.91 | 7,453 | | 1.68% | | 48.12% | |
| DR Horton Inc | DHI | 329.31 | 147.80 | 48,672 | 0.14% | 0.81% | 0.00% | 4.37% | 0.01% |
| Electronic Arts Inc | EA | 266.38 | 132.88 | 35,396 | 0.11% | 0.57% | 0.00% | 12.24% | 0.01% |
| Fair Isaac Corp | FICO | 24.71 | 1,289.93 | 31,875 | | | | | |
| Fastenal Co | FAST | 572.43 | 65.98 | 37,769 | | 2.36% | | | |
| M&T Bank Corp | MTB | 166.85 | 150.25 | 25,070 | 0.07% | 3.59% | 0.00% | 5.82% | 0.00% |
| Xcel Energy Inc | XEL | 555.64 | 55.45 | 30,810 | 0.09% | 3.95% | 0.00% | 6.70% | 0.01% |
| Fifth Third Bancorp | FITB | 684.05 | 37.42 | 25,597 | | 3.74% | | 25.00% | |
| Gilead Sciences Inc | GILD | 1,245.85 | 64.27 | 80,071 | 0.24% | 4.79% | 0.01% | 14.38% | 0.03% |
| Hasbro Inc | HAS | 139.22 | 59.78 | 8,322 | 0.02% | 4.68% | 0.00% | 17.10% | 0.00% |
| Huntington Bancshares Inc/OH | HBAN | 1,449.25 | 13.92 | 20,174 | 0.06% | 4.45% | 0.00% | 4.46% | 0.00% |
| Welltower Inc | WELL | 597.92 | 103.67 | 61,986 | 0.18% | 2.35% | 0.00% | 14.68% | 0.03% |
| Biogen Inc | BIIB | 145.60 | 224.94 | 32,751 | 0.10% | | | 5.36% | 0.01% |
| Northern Trust Corp | NTRS | 204.59 | 84.24 | 17,235 | 0.05% | 3.56% | 0.00% | 10.80% | 0.01% |
| Packaging Corp of America | PKG | 89.80 | 183.49 | 16,477 | 0.05% | 2.72% | 0.00% | 2.83% | 0.00% |
| Paychex Inc | PAYX | 359.96 | 120.16 | 43,253 | 0.13% | 3.26% | 0.00% | 6.17% | 0.01% |
| QUALCOMM Inc | QCOM | 1,116.00 | 204.05 | 227,720 | 0.68% | 1.67% | 0.01% | 11.88% | 0.08% |
| Ross Stores Inc | ROST | 335.17 | 139.76 | 46,844 | | 1.05% | | 188.00% | |
| IDEXX Laboratories Inc | IDXX | 82.59 | 496.95 | 41,042 | 0.12% | | | 11.11% | 0.01% |
| Starbucks Corp | SBUX | 1,132.20 | 80.22 | 90,825 | 0.27% | 2.84% | 0.01% | 12.42% | 0.03% |
| KeyCorp | KEY | 942.86 | 14.37 | 13,549 | 0.04% | 5.71% | 0.00% | 19.11% | 0.01% |
| Fox Corp | FOXA | 231.15 | 34.43 | 7,958 | 0.02% | 1.51% | 0.00% | 6.61% | 0.00% |
| Fox Corp | FOX | 235.58 | 31.94 | 7,524 | 0.02% | 1.63% | 0.00% | 6.61% | 0.00% |
| State Street Corp | STT | 301.26 | 75.59 | 22,772 | 0.07% | 3.65% | 0.00% | 8.07% | 0.01% |
| Norwegian Cruise Line Holdings Ltd | NCLH | 429.04 | 16.60 | 7,122 | | | | 51.83% | |
| US Bancorp | USB | 1,560.46 | 40.55 | 63,277 | 0.19% | 4.83% | 0.01% | 2.71% | 0.01% |
| A O Smith Corp | AOS | 120.78 | 83.64 | 10,102 | | 1.53% | | | |

STANDARD AND POOR'S 500 INDEX

| Name | Ticker | [4] Shares Outst'g | [5] Price | [6] Market Capitalization | [7] Weight in Index | [8] Estimated Dividend Yield | [9] Cap-Weighted Dividend Yield | [10] Value Line Long-Term Growth Est. | [11] Cap-Weighted Long-Term Growth Est. |
|---|---|---|---|---|---|---|---|---|---|
| Gen Digital Inc | GEN | 626.15 | 24.83 | 15,547 | 0.05% | 2.01% | 0.00% | 10.16% | 0.00% |
| T Rowe Price Group Inc | TROW | 223.30 | 117.83 | 26,311 | 0.08% | 4.21% | 0.00% | 5.88% | 0.00% |
| Waste Management Inc | WM | 401.08 | 210.73 | 84,520 | 0.25% | 1.42% | 0.00% | 11.11% | 0.03% |
| Constellation Brands Inc | STZ | 182.95 | 250.23 | 45,780 | 0.14% | 1.61% | 0.00% | 11.21% | 0.02% |
| Invesco Ltd | IVZ | 449.83 | 15.71 | 7,067 | 0.02% | 5.22% | 0.00% | 8.71% | 0.00% |
| Intuit Inc | INTU | 279.55 | 576.44 | 161,142 | 0.48% | 0.62% | 0.00% | 15.15% | 0.07% |
| Morgan Stanley | MS | 1,625.16 | 97.84 | 159,006 | 0.47% | 3.48% | 0.02% | 9.49% | 0.04% |
| Microchip Technology Inc | MCHP | 536.89 | 97.23 | 52,201 | | 1.86% | | -9.39% | |
| Chubb Ltd | CB | 406.06 | 270.82 | 109,969 | 0.33% | 1.34% | 0.00% | 2.45% | 0.01% |
| Hologic Inc | HOLX | 233.38 | 73.78 | 17,219 | 0.05% | | | 7.36% | 0.00% |
| Citizens Financial Group Inc | CFG | 455.02 | 35.29 | 16,058 | | 4.76% | | | |
| Jabil Inc | JBL | 120.60 | 118.90 | 14,339 | 0.04% | 0.27% | 0.00% | 10.30% | 0.00% |
| O'Reilly Automotive Inc | ORLY | 58.89 | 963.26 | 56,730 | 0.17% | | | 11.00% | 0.02% |
| Allstate Corp/The | ALL | 263.92 | 167.52 | 44,211 | | 2.20% | | 175.32% | |
| Equity Residential | EQR | 378.94 | 65.03 | 24,642 | 0.07% | 4.15% | 0.00% | 3.98% | 0.00% |
| BorgWarner Inc | BWA | 227.84 | 35.55 | 8,100 | 0.02% | 1.24% | 0.00% | 4.17% | 0.00% |
| Keurig Dr Pepper Inc | KDP | 1,355.57 | 34.25 | 46,428 | 0.14% | 2.51% | 0.00% | 7.12% | 0.01% |
| Host Hotels & Resorts Inc | HST | 703.60 | 17.94 | 12,623 | | 4.46% | | -0.49% | |
| Incyte Corp | INCY | 224.86 | 57.79 | 12,994 | 0.04% | | | 19.22% | 0.01% |
| Simon Property Group Inc | SPG | 325.77 | 151.31 | 49,292 | 0.15% | 5.29% | 0.01% | 1.31% | 0.00% |
| Eastman Chemical Co | EMN | 117.65 | 101.33 | 11,921 | 0.04% | 3.20% | 0.00% | 6.19% | 0.00% |
| AvalonBay Communities Inc | AVB | 142.19 | 192.68 | 27,396 | 0.08% | 3.53% | 0.00% | 7.71% | 0.01% |
| Prudential Financial Inc | PRU | 359.00 | 120.35 | 43,206 | 0.13% | 4.32% | 0.01% | 9.96% | 0.01% |
| United Parcel Service Inc | UPS | 729.40 | 138.93 | 101,335 | 0.30% | 4.69% | 0.01% | 8.77% | 0.03% |
| Walgreens Boots Alliance Inc | WBA | 862.71 | 16.22 | 13,993 | | 6.17% | | -4.38% | |
| STERIS PLC | STE | 98.90 | 222.88 | 22,043 | | 0.93% | | | |
| McKesson Corp | MCK | 129.99 | 568.97 | 73,958 | 0.22% | 0.44% | 0.00% | 11.67% | 0.03% |
| Lockheed Martin Corp | LMT | 239.94 | 467.19 | 112,097 | 0.33% | 2.70% | 0.01% | 2.21% | 0.01% |
| Cencora Inc | COR | 196.93 | 226.57 | 44,618 | 0.13% | 0.90% | 0.00% | 10.82% | 0.01% |
| Capital One Financial Corp | COF | 381.92 | 137.63 | 52,564 | 0.16% | 1.74% | 0.00% | 12.55% | 0.02% |
| Waters Corp | WAT | 59.32 | 308.90 | 18,324 | 0.05% | | | 5.12% | 0.00% |
| Nordson Corp | NDSN | 57.27 | 234.72 | 13,442 | | 1.16% | | | |
| Dollar Tree Inc | DLTR | 217.98 | 117.95 | 25,711 | 0.08% | | | 14.10% | 0.01% |
| Darden Restaurants Inc | DRI | 119.36 | 150.39 | 17,950 | 0.05% | 3.48% | 0.00% | 10.89% | 0.01% |
| Evergy Inc | EVRG | 229.75 | 54.66 | 12,558 | 0.04% | 4.70% | 0.00% | 5.00% | 0.00% |
| Match Group Inc | MTCH | 265.67 | 30.63 | 8,137 | | | | 35.69% | |
| Domino's Pizza Inc | DPZ | 34.88 | 508.58 | 17,739 | 0.05% | 1.19% | 0.00% | 14.43% | 0.01% |
| NVR Inc | NVR | 3.13 | 7,680.73 | 24,056 | 0.07% | | | 4.87% | 0.00% |
| NetApp Inc | NTAP | 206.38 | 120.43 | 24,854 | | 1.73% | | | |
| Old Dominion Freight Line Inc | ODFL | 217.29 | 175.25 | 38,079 | 0.11% | 0.59% | 0.00% | 13.12% | 0.01% |
| DaVita Inc | DVA | 87.70 | 147.12 | 12,902 | 0.04% | | | 15.98% | 0.01% |
| Hartford Financial Services Group Inc/The | HIG | 295.76 | 102.98 | 30,457 | 0.09% | 1.83% | 0.00% | 12.22% | 0.01% |
| Iron Mountain Inc | IRM | 293.13 | 80.69 | 23,653 | 0.07% | 3.22% | 0.00% | 4.00% | 0.00% |
| Estee Lauder Cos Inc/The | EL | 233.02 | 123.36 | 28,746 | 0.09% | 2.14% | 0.00% | 16.13% | 0.01% |
| Cadence Design Systems Inc | CDNS | 272.13 | 286.31 | 77,915 | 0.23% | | | 15.67% | 0.04% |
| Tyler Technologies Inc | TYL | 42.46 | 480.36 | 20,394 | | | | | |
| Universal Health Services Inc | UHS | 59.68 | 189.60 | 11,315 | 0.03% | 0.42% | 0.00% | 17.84% | 0.01% |
| Skyworks Solutions Inc | SWKS | 160.45 | 92.66 | 14,867 | | 2.94% | | -1.59% | |
| Quest Diagnostics Inc | DGX | 111.09 | 141.97 | 15,772 | | 2.11% | | -0.82% | |
| Rockwell Automation Inc | ROK | 114.00 | 257.53 | 29,359 | 0.09% | 1.94% | 0.00% | 5.23% | 0.00% |
| Kraft Heinz Co/The | KHC | 1,214.30 | 35.37 | 42,950 | 0.13% | 4.52% | 0.01% | 3.77% | 0.00% |
| American Tower Corp | AMT | 466.98 | 195.74 | 91,406 | 0.27% | 3.31% | 0.01% | 11.49% | 0.03% |
| Regeneron Pharmaceuticals Inc | REGN | 108.37 | 980.16 | 106,217 | 0.32% | | | 6.96% | 0.02% |
| Amazon.com Inc | AMZN | 10,406.63 | 176.44 | 1,836,145 | | | | 28.96% | |
| Jack Henry & Associates Inc | JKHY | 72.90 | 164.68 | 12,005 | 0.04% | 1.34% | 0.00% | 7.46% | 0.00% |
| Ralph Lauren Corp | RL | 40.63 | 186.88 | 7,593 | 0.02% | 1.77% | 0.00% | 11.05% | 0.00% |
| Boston Properties Inc | BXP | 157.05 | 60.67 | 9,528 | 0.03% | 6.46% | 0.00% | 0.21% | 0.00% |
| Amphenol Corp | APH | 600.60 | 132.37 | 79,502 | 0.24% | 0.33% | 0.00% | 13.49% | 0.03% |
| Howmet Aerospace Inc | HWM | 408.18 | 84.65 | 34,553 | 0.10% | 0.24% | 0.00% | 19.82% | 0.02% |
| Valero Energy Corp | VLO | 327.00 | 157.14 | 51,384 | | 2.72% | | -24.00% | |
| Synopsys Inc | SNPS | 153.22 | 560.80 | 85,924 | 0.26% | | | 16.59% | 0.04% |
| Etsy Inc | ETSY | 116.93 | 63.47 | 7,422 | 0.02% | | | 7.51% | 0.00% |
| CH Robinson Worldwide Inc | CHRW | 117.10 | 86.37 | 10,113 | 0.03% | 2.83% | 0.00% | 11.80% | 0.00% |
| Accenture PLC | ACN | 670.42 | 282.29 | 189,253 | 0.56% | 1.83% | 0.01% | 6.68% | 0.04% |
| TransDigm Group Inc | TDG | 55.96 | 1,343.23 | 75,164 | 0.22% | | | 18.82% | 0.04% |
| Yum! Brands Inc | YUM | 281.63 | 137.43 | 38,705 | 0.12% | 1.95% | 0.00% | 10.66% | 0.01% |
| Prologis Inc | PLD | 925.84 | 110.49 | 102,297 | 0.30% | 3.48% | 0.01% | 7.57% | 0.02% |
| FirstEnergy Corp | FE | 575.52 | 40.26 | 23,170 | 0.07% | 4.22% | 0.00% | 6.65% | 0.00% |
| VeriSign Inc | VRSN | 100.14 | 174.32 | 17,456 | | | | | |
| Quanta Services Inc | PWR | 146.39 | 275.94 | 40,394 | 0.12% | 0.13% | 0.00% | 12.00% | 0.01% |
| Henry Schein Inc | HSIC | 128.05 | 69.34 | 8,879 | 0.03% | | | 7.53% | 0.00% |
| Ameren Corp | AEE | 266.51 | 73.37 | 19,554 | 0.06% | 3.65% | 0.00% | 6.00% | 0.00% |
| ANSYS Inc | ANSS | 87.30 | 317.45 | 27,713 | 0.08% | | | 6.37% | 0.01% |
| FactSet Research Systems Inc | FDS | 38.12 | 404.26 | 15,409 | 0.05% | 1.03% | 0.00% | 9.42% | 0.00% |
| NVIDIA Corp | NVDA | 2,460.00 | 1,096.33 | 2,696,972 | | 0.00% | | 35.80% | |
| Cognizant Technology Solutions Corp | CTSH | 497.20 | 66.15 | 32,890 | 0.10% | 1.81% | 0.00% | 5.15% | 0.01% |
| Intuitive Surgical Inc | ISRG | 354.71 | 402.12 | 142,634 | 0.42% | | | 16.21% | 0.07% |
| Take-Two Interactive Software Inc | TTWO | 171.39 | 160.36 | 27,483 | | | | | |
| Republic Services Inc | RSG | 314.98 | 185.19 | 58,330 | 0.17% | 1.16% | 0.00% | 10.52% | 0.02% |
| eBay Inc | EBAY | 506.00 | 54.22 | 27,435 | 0.08% | 1.99% | 0.00% | 7.83% | 0.01% |
| Goldman Sachs Group Inc/The | GS | 322.46 | 456.52 | 147,211 | 0.44% | 2.41% | 0.01% | 14.02% | 0.06% |
| SBA Communications Corp | SBAC | 107.44 | 196.68 | 21,132 | | 1.99% | | 23.41% | |
| Sempra | SRE | 632.85 | 77.03 | 48,748 | 0.15% | 3.22% | 0.00% | 3.85% | 0.01% |
| Moody's Corp | MCO | 182.60 | 396.99 | 72,490 | 0.22% | 0.86% | 0.00% | 11.79% | 0.03% |
| ON Semiconductor Corp | ON | 430.23 | 73.04 | 31,424 | 0.09% | | | 2.64% | 0.00% |
| Booking Holdings Inc | BKNG | 33.93 | 3,776.35 | 128,124 | 0.38% | 0.93% | 0.00% | 15.03% | 0.06% |
| F5 Inc | FFIV | 58.61 | 168.97 | 9,904 | 0.03% | | | 7.81% | 0.00% |
| Akamai Technologies Inc | AKAM | 152.32 | 92.24 | 14,050 | 0.04% | | | 1.54% | 0.00% |
| Charles River Laboratories International Inc | CRL | 51.51 | 208.44 | 10,737 | 0.03% | | | 9.81% | 0.00% |
| MarketAxess Holdings Inc | MKTX | 37.90 | 198.93 | 7,539 | 0.02% | 1.49% | 0.00% | 3.07% | 0.00% |
| Devon Energy Corp | DVN | 632.00 | 49.08 | 31,019 | | 2.85% | | | |
| Bio-Techne Corp | TECH | 157.59 | 77.19 | 12,164 | | 0.41% | | | |
| Alphabet Inc | GOOGL | 5,874.00 | 172.50 | 1,013,265 | 3.02% | 0.46% | 0.01% | 15.01% | 0.45% |
| Teleflex Inc | TFX | 47.10 | 209.07 | 9,848 | 0.03% | 0.65% | 0.00% | 7.51% | 0.00% |
| Netflix Inc | NFLX | 430.97 | 641.62 | 276,516 | | | | 35.61% | |
| Allegion plc | ALLE | 87.44 | 121.82 | 10,652 | 0.03% | 1.58% | 0.00% | 7.25% | 0.00% |
| Agilent Technologies Inc | A | 293.06 | 130.41 | 38,217 | 0.11% | 0.72% | 0.00% | 5.23% | 0.01% |
| Warner Bros Discovery Inc | WBD | 2,450.31 | 8.24 | 20,191 | | | | 34.78% | |
| Elevance Health Inc | ELV | 232.42 | 538.48 | 125,152 | 0.37% | 1.21% | 0.00% | 12.03% | 0.04% |

STANDARD AND POOR'S 500 INDEX

| Name | Ticker | [4] Shares Outst'g | [5] Price | [6] Market Capitalization | [7] Weight in Index | [8] Estimated Dividend Yield | [9] Cap-Weighted Dividend Yield | [10] Value Line Long-Term Growth Est. | [11] Cap-Weighted Long-Term Growth Est. |
|---|---|---|---|---|---|---|---|---|---|
| Trimble Inc | TRMB | 244.21 | 55.68 | 13,598 | 0.04% | | | 10.00% | 0.00% |
| CME Group Inc | CME | 360.06 | 202.98 | 73,085 | 0.22% | 2.27% | 0.00% | 4.90% | 0.01% |
| Juniper Networks Inc | JNPR | 324.99 | 35.45 | 11,521 | 0.03% | 2.48% | 0.00% | 4.78% | 0.00% |
| BlackRock Inc | BLK | 148.60 | 772.03 | 114,724 | 0.34% | 2.64% | 0.01% | 11.89% | 0.04% |
| DTE Energy Co | DTE | 206.93 | 116.53 | 24,113 | 0.07% | 3.50% | 0.00% | 8.70% | 0.01% |
| Nasdaq Inc | NDAQ | 576.53 | 59.03 | 34,033 | 0.10% | 1.63% | 0.00% | 5.72% | 0.01% |
| Celanese Corp | CE | 109.22 | 152.04 | 16,606 | | 1.84% | | 22.38% | |
| Philip Morris International Inc | PM | 1,554.56 | 101.38 | 157,601 | 0.47% | 5.13% | 0.02% | 8.23% | 0.04% |
| Salesforce Inc | CRM | 969.00 | 234.44 | 227,172 | 0.68% | 0.68% | 0.00% | 17.34% | 0.12% |
| Ingersoll Rand Inc | IR | 403.43 | 93.05 | 37,539 | 0.11% | 0.09% | 0.00% | 16.00% | 0.02% |
| Huntington Ingalls Industries Inc | HII | 39.43 | 253.10 | 9,980 | 0.03% | 2.05% | 0.00% | 7.78% | 0.00% |
| Roper Technologies Inc | ROP | 107.05 | 532.76 | 57,029 | | 0.56% | | | |
| MetLife Inc | MET | 711.12 | 72.37 | 51,464 | 0.15% | 3.01% | 0.00% | 13.85% | 0.02% |
| Tapestry Inc | TPR | 229.77 | 43.49 | 9,993 | 0.03% | 3.22% | 0.00% | 9.91% | 0.00% |
| CSX Corp | CSX | 1,954.93 | 33.75 | 65,979 | 0.20% | 1.42% | 0.00% | 10.76% | 0.02% |
| Edwards Lifesciences Corp | EW | 601.30 | 86.89 | 52,247 | 0.16% | | | 10.03% | 0.02% |
| Ameriprise Financial Inc | AMP | 99.33 | 436.61 | 43,366 | | 1.36% | | | |
| Zebra Technologies Corp | ZBRA | 51.42 | 312.34 | 16,060 | | | | | |
| Zimmer Biomet Holdings Inc | ZBH | 205.73 | 115.15 | 23,690 | 0.07% | 0.83% | 0.00% | 7.00% | 0.00% |
| CBRE Group Inc | CBRE | 306.82 | 88.07 | 27,022 | | | | | |
| Camden Property Trust | CPT | 106.54 | 102.65 | 10,936 | 0.03% | 4.01% | 0.00% | 1.59% | 0.00% |
| Mastercard Inc | MA | 922.47 | 447.07 | 412,409 | 1.23% | 0.59% | 0.01% | 15.54% | 0.19% |
| CarMax Inc | KMX | 157.33 | 70.26 | 11,054 | 0.03% | | | 18.69% | 0.01% |
| Intercontinental Exchange Inc | ICE | 573.59 | 133.90 | 76,803 | 0.23% | 1.34% | 0.00% | 8.96% | 0.02% |
| Fidelity National Information Services Inc | FIS | 556.25 | 75.88 | 42,208 | | 1.90% | | 21.47% | |
| Chipotle Mexican Grill Inc | CMG | 27.47 | 3,129.52 | 85,959 | | | | 22.95% | |
| Wynn Resorts Ltd | WYNN | 112.07 | 94.88 | 10,633 | | 1.05% | | -4.07% | |
| Live Nation Entertainment Inc | LYV | 231.44 | 93.74 | 21,695 | | | | | |
| Assurant Inc | AIZ | 51.99 | 173.47 | 9,018 | 0.03% | 1.66% | 0.00% | 6.19% | 0.00% |
| NRG Energy Inc | NRG | 208.48 | 81.00 | 16,887 | 0.05% | 2.01% | 0.00% | 3.00% | 0.00% |
| Regions Financial Corp | RF | 915.83 | 19.11 | 17,501 | 0.05% | 5.02% | 0.00% | 4.18% | 0.00% |
| Monster Beverage Corp | MNST | 1,041.73 | 51.92 | 54,087 | 0.16% | | | 12.72% | 0.02% |
| Mosaic Co/The | MOS | 321.39 | 30.93 | 9,941 | | 2.72% | | -18.32% | |
| Baker Hughes Co | BKR | 998.00 | 33.48 | 33,413 | | 2.51% | | 27.93% | |
| Expedia Group Inc | EXPE | 127.22 | 112.86 | 14,359 | | | | 22.40% | |
| CF Industries Holdings Inc | CF | 182.78 | 79.73 | 14,573 | | 2.51% | | -4.63% | |
| Leidos Holdings Inc | LDOS | 135.21 | 147.05 | 19,883 | 0.06% | 1.03% | 0.00% | 10.53% | 0.01% |
| APA Corp | APA | 371.19 | 30.53 | 11,332 | | 3.28% | | | |
| Alphabet Inc | GOOG | 5,617.00 | 173.96 | 977,133 | 2.91% | 0.46% | 0.01% | 15.01% | 0.44% |
| First Solar Inc | FSLR | 107.04 | 271.76 | 29,089 | | | | 29.00% | |
| TE Connectivity Ltd | TEL | 306.23 | 149.70 | 45,842 | 0.14% | 1.74% | 0.00% | 5.04% | 0.01% |
| Discover Financial Services | DFS | 250.60 | 122.66 | 30,738 | | 2.28% | | 61.19% | |
| Visa Inc | V | 1,574.15 | 272.46 | 428,893 | 1.28% | 0.76% | 0.01% | 13.05% | 0.17% |
| Mid-America Apartment Communities Inc | MAA | 116.69 | 133.71 | 15,602 | 0.05% | 4.40% | 0.00% | 0.83% | 0.00% |
| Xylem Inc/NY | XYL | 242.45 | 141.02 | 34,190 | | 1.02% | | | |
| Marathon Petroleum Corp | MPC | 352.33 | 176.61 | 62,225 | | 1.87% | | | |
| Advanced Micro Devices Inc | AMD | 1,616.31 | 166.90 | 269,763 | | | | 31.82% | |
| Tractor Supply Co | TSCO | 107.81 | 285.29 | 30,757 | 0.09% | 1.54% | 0.00% | 5.15% | 0.00% |
| ResMed Inc | RMD | 146.91 | 206.33 | 30,311 | 0.09% | 0.93% | 0.00% | 13.45% | 0.01% |
| Mettler-Toledo International Inc | MTD | 21.36 | 1,404.09 | 29,987 | 0.09% | | | 9.29% | 0.01% |
| Jacobs Solutions Inc | J | 125.21 | 139.34 | 17,447 | 0.05% | 0.83% | 0.00% | 10.76% | 0.01% |
| Copart Inc | CPRT | 962.30 | 53.06 | 51,060 | | | | | |
| VICI Properties Inc | VICI | 1,043.14 | 28.71 | 29,948 | 0.09% | 5.78% | 0.01% | 5.44% | 0.00% |
| Fortinet Inc | FTNT | 763.94 | 59.32 | 45,317 | 0.13% | | | 9.59% | 0.01% |
| Albemarle Corp | ALB | 117.53 | 122.59 | 14,408 | | 1.31% | | -12.70% | |
| Moderna Inc | MRNA | 383.24 | 142.55 | 54,631 | 0.16% | | | 17.59% | 0.03% |
| Essex Property Trust Inc | ESS | 64.21 | 259.79 | 16,680 | 0.05% | 3.77% | 0.00% | 4.64% | 0.00% |
| CoStar Group Inc | CSGP | 408.34 | 78.17 | 31,920 | 0.10% | | | 15.09% | 0.01% |
| Realty Income Corp | O | 870.77 | 52.80 | 45,975 | 0.14% | 5.97% | 0.01% | 5.24% | 0.01% |
| Westrock Co | WRK | 258.15 | 53.64 | 13,847 | 0.04% | 2.26% | 0.00% | 7.48% | 0.00% |
| Westinghouse Air Brake Technologies Corp | WAB | 176.39 | 169.23 | 29,850 | 0.09% | 0.47% | 0.00% | 15.49% | 0.01% |
| Pool Corp | POOL | 38.33 | 363.55 | 13,935 | 0.04% | 1.32% | 0.00% | 4.73% | 0.00% |
| Western Digital Corp | WDC | 326.53 | 75.29 | 24,584 | | | | -10.00% | |
| PepsiCo Inc | PEP | 1,374.79 | 172.90 | 237,700 | 0.71% | 3.13% | 0.02% | 7.91% | 0.06% |
| Diamondback Energy Inc | FANG | 178.34 | 199.26 | 35,537 | | 3.95% | | | |
| Palo Alto Networks Inc | PANW | 323.80 | 294.91 | 95,492 | 0.28% | | | 11.00% | 0.03% |
| ServiceNow Inc | NOW | 205.00 | 656.93 | 134,671 | | | | 25.00% | |
| Church & Dwight Co Inc | CHD | 244.52 | 107.01 | 26,166 | 0.08% | 1.06% | 0.00% | 11.04% | 0.01% |
| Federal Realty Investment Trust | FRT | 82.78 | 100.95 | 8,356 | 0.02% | 4.32% | 0.00% | 4.11% | 0.00% |
| MGM Resorts International | MGM | 313.68 | 40.17 | 12,601 | 0.04% | | | 15.86% | 0.01% |
| American Electric Power Co Inc | AEP | 526.59 | 90.25 | 47,525 | 0.14% | 3.90% | 0.01% | 6.10% | 0.01% |
| Invitation Homes Inc | INVH | 612.54 | 34.79 | 21,310 | 0.06% | 3.22% | 0.00% | 5.86% | 0.00% |
| PTC Inc | PTC | 119.74 | 176.24 | 21,104 | 0.06% | | | 14.94% | 0.01% |
| JB Hunt Transport Services Inc | JBHT | 103.20 | 160.75 | 16,589 | 0.05% | 1.07% | 0.00% | 13.58% | 0.01% |
| Lam Research Corp | LRCX | 130.74 | 932.44 | 121,903 | 0.36% | 0.86% | 0.00% | 8.61% | 0.03% |
| Mohawk Industries Inc | MHK | 63.86 | 121.93 | 7,787 | 0.02% | | | 2.74% | 0.00% |
| Pentair PLC | PNR | 166.03 | 81.38 | 13,511 | 0.04% | 1.13% | 0.00% | 13.13% | 0.01% |
| GE HealthCare Technologies Inc | GEHC | 456.47 | 78.00 | 35,604 | 0.11% | 0.15% | 0.00% | 11.26% | 0.01% |
| Vertex Pharmaceuticals Inc | VRTX | 258.05 | 455.34 | 117,502 | 0.35% | | | 12.79% | 0.04% |
| Amcor PLC | AMCR | 1,445.34 | 10.17 | 14,699 | 0.04% | 4.92% | 0.00% | 2.63% | 0.00% |
| Meta Platforms Inc | META | 2,191.45 | 466.83 | 1,023,033 | 3.05% | 0.43% | 0.01% | 18.58% | 0.57% |
| T-Mobile US Inc | TMUS | 1,171.85 | 174.96 | 205,028 | 0.61% | 1.49% | 0.01% | 5.00% | 0.03% |
| United Rentals Inc | URI | 66.59 | 669.41 | 44,576 | 0.13% | 0.97% | 0.00% | 5.27% | 0.01% |
| Honeywell International Inc | HON | 651.19 | 202.19 | 131,663 | 0.39% | 2.14% | 0.01% | 8.50% | 0.03% |
| Alexandria Real Estate Equities Inc | ARE | 174.88 | 119.00 | 20,811 | 0.06% | 4.27% | 0.00% | 4.21% | 0.00% |
| Delta Air Lines Inc | DAL | 645.31 | 51.02 | 32,924 | 0.10% | 0.78% | 0.00% | 12.00% | 0.01% |
| Seagate Technology Holdings PLC | STX | 209.99 | 93.24 | 19,579 | | 3.00% | | | |
| United Airlines Holdings Inc | UAL | 328.80 | 52.99 | 17,423 | 0.05% | | | 12.79% | 0.01% |
| News Corp | NWS | 190.68 | 27.88 | 5,316 | | 0.72% | | | |
| Centene Corp | CNC | 534.91 | 71.59 | 38,294 | 0.11% | | | 5.16% | 0.01% |
| Martin Marietta Materials Inc | MLM | 61.64 | 571.34 | 35,217 | 0.10% | 0.52% | 0.00% | 9.71% | 0.01% |
| Teradyne Inc | TER | 156.11 | 140.94 | 22,002 | 0.07% | 0.34% | 0.00% | 17.47% | 0.01% |
| PayPal Holdings Inc | PYPL | 1,046.05 | 62.99 | 65,890 | 0.20% | | | 8.69% | 0.02% |
| Tesla Inc | TSLA | 3,189.20 | 178.08 | 567,932 | | | | | |
| Arch Capital Group Ltd | ACGL | 375.49 | 102.63 | 38,537 | 0.11% | | | 3.53% | 0.00% |
| Dow Inc | DOW | 703.27 | 57.63 | 40,529 | 0.12% | 4.86% | 0.01% | 2.46% | 0.00% |
| Everest Group Ltd | EG | 43.46 | 390.93 | 16,989 | 0.05% | 2.05% | 0.00% | 1.85% | 0.00% |
| Teledyne Technologies Inc | TDY | 47.42 | 396.95 | 18,824 | 0.06% | | | 7.34% | 0.00% |
| GE Vernova Inc | GEV | 274.09 | 175.90 | 48,212 | | | | 63.97% | |

STANDARD AND POOR'S 500 INDEX

| Name | Ticker | [4] Shares Outst'g | [5] Price | [6] Market Capitalization | [7] Weight in Index | [8] Estimated Dividend Yield | [9] Cap-Weighted Dividend Yield | [10] Value Line Long-Term Growth Est. | [11] Cap-Weighted Long-Term Growth Est. |
|---|---|---|---|---|---|---|---|---|---|
| News Corp | NWSA | 379.21 | 27.19 | 10,311 | | 0.74% | | | |
| Exelon Corp | EXC | 999.74 | 37.55 | 37,540 | 0.11% | 4.05% | 0.00% | 5.27% | 0.01% |
| Global Payments Inc | GPN | 255.25 | 101.85 | 25,997 | 0.08% | 0.98% | 0.00% | 11.80% | 0.01% |
| Crown Castle Inc | CCI | 434.52 | 102.50 | 44,539 | | 6.11% | | -8.74% | |
| Aptiv PLC | APTV | 272.06 | 83.26 | 22,652 | | | | 24.81% | |
| Align Technology Inc | ALGN | 75.28 | 257.21 | 19,363 | 0.06% | | | 11.74% | 0.01% |
| Illumina Inc | ILMN | 159.30 | 104.28 | 16,612 | | | | 40.05% | |
| Kenvue Inc | KVUE | 1,914.81 | 19.30 | 36,956 | 0.11% | 4.15% | 0.00% | 15.93% | 0.02% |
| Targa Resources Corp | TRGP | 221.72 | 118.23 | 26,214 | | 2.54% | | 21.12% | |
| Bunge Global SA | BG | 141.60 | 107.59 | 15,234 | | 2.53% | | -8.30% | |
| Deckers Outdoor Corp | DECK | 25.44 | 1,093.92 | 27,832 | 0.08% | | | 8.39% | 0.01% |
| LKQ Corp | LKQ | 266.78 | 43.03 | 11,479 | | 2.79% | | | |
| Zoetis Inc | ZTS | 456.30 | 169.56 | 77,369 | 0.23% | 1.02% | 0.00% | 10.36% | 0.02% |
| Digital Realty Trust Inc | DLR | 324.50 | 145.34 | 47,163 | | 3.36% | | -15.66% | |
| Equinix Inc | EQIX | 94.91 | 762.98 | 72,411 | 0.22% | 2.23% | 0.00% | 10.10% | 0.02% |
| Las Vegas Sands Corp | LVS | 745.05 | 45.03 | 33,549 | | 1.78% | | | |
| Molina Healthcare Inc | MOH | 59.00 | 314.58 | 18,560 | 0.06% | | | 11.72% | 0.01% |

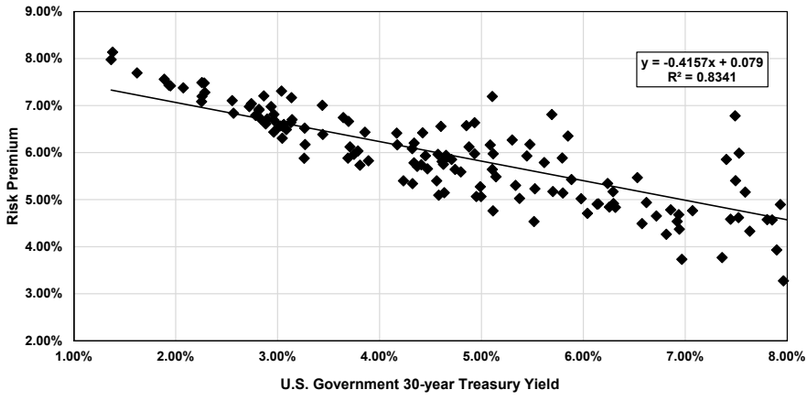
Notes:
[1] Equals sum of Col. [9]
[2] Equals sum of Col. [11]
[3] Equals ([1] x (1 + (0.5 x [2]))) + [2]
[4] Source: Bloomberg Professional as of May 31, 2024
[5] Source: Bloomberg Professional as of May 31, 2024
[6] Equals [4] x [5]
[7] Equals weight in S&P 500 based on market capitalization [6] if Growth Rate >0% and ≤20%
[8] Source: Bloomberg Professional, as of May 31, 2024
[9] Equals [7] x [8]
[10] Source: Value Line, as of May 31, 2024
[11] Equals [7] x [10]

**BOND YIELD PLUS RISK PREMIUM**

| Quarter | [1] Average Authorized Electric ROE | [2] U.S. Govt. 30-year Treasury | [3] Risk Premium |
|---|---|---|---|
| 1980.1 | 13.97% | 11.66% | 2.31% |
| 1980.2 | 14.25% | 10.52% | 3.73% |
| 1980.3 | 14.30% | 10.85% | 3.45% |
| 1980.4 | 14.32% | 12.10% | 2.23% |
| 1981.1 | 14.82% | 12.53% | 2.28% |
| 1981.2 | 15.05% | 13.24% | 1.81% |
| 1981.3 | 15.31% | 14.13% | 1.17% |
| 1981.4 | 15.59% | 13.85% | 1.74% |
| 1982.1 | 15.71% | 13.96% | 1.75% |
| 1982.2 | 15.60% | 13.52% | 2.08% |
| 1982.3 | 15.85% | 12.79% | 3.06% |
| 1982.4 | 16.03% | 10.75% | 5.28% |
| 1983.1 | 15.54% | 10.71% | 4.83% |
| 1983.2 | 15.13% | 10.65% | 4.48% |
| 1983.3 | 15.39% | 11.62% | 3.77% |
| 1983.4 | 15.37% | 11.74% | 3.63% |
| 1984.1 | 15.06% | 12.04% | 3.02% |
| 1984.2 | 15.18% | 13.18% | 2.00% |
| 1984.3 | 15.38% | 12.69% | 2.69% |
| 1984.4 | 15.69% | 11.70% | 3.99% |
| 1985.1 | 15.48% | 11.58% | 3.90% |
| 1985.2 | 15.27% | 11.00% | 4.27% |
| 1985.3 | 14.91% | 10.55% | 4.36% |
| 1985.4 | 15.11% | 10.04% | 5.07% |
| 1986.1 | 14.42% | 8.77% | 5.65% |
| 1986.2 | 14.27% | 7.49% | 6.78% |
| 1986.3 | 13.26% | 7.40% | 5.86% |
| 1986.4 | 13.52% | 7.53% | 5.99% |
| 1987.1 | 12.90% | 7.49% | 5.40% |
| 1987.2 | 13.17% | 8.53% | 4.64% |
| 1987.3 | 13.14% | 9.06% | 4.08% |
| 1987.4 | 12.76% | 9.23% | 3.53% |
| 1988.1 | 12.74% | 8.63% | 4.11% |
| 1988.2 | 12.70% | 9.06% | 3.63% |
| 1988.3 | 12.78% | 9.18% | 3.60% |
| 1988.4 | 12.97% | 8.97% | 4.00% |
| 1989.1 | 13.02% | 9.04% | 3.99% |
| 1989.2 | 13.22% | 8.70% | 4.52% |
| 1989.3 | 12.38% | 8.12% | 4.26% |
| 1989.4 | 12.83% | 7.93% | 4.90% |
| 1990.1 | 12.62% | 8.44% | 4.19% |
| 1990.2 | 12.85% | 8.65% | 4.20% |
| 1990.3 | 12.54% | 8.79% | 3.75% |
| 1990.4 | 12.68% | 8.56% | 4.12% |
| 1991.1 | 12.66% | 8.20% | 4.46% |
| 1991.2 | 12.67% | 8.31% | 4.36% |
| 1991.3 | 12.49% | 8.19% | 4.30% |
| 1991.4 | 12.42% | 7.85% | 4.57% |
| 1992.1 | 12.38% | 7.81% | 4.58% |
| 1992.2 | 11.83% | 7.90% | 3.93% |
| 1992.3 | 12.03% | 7.45% | 4.59% |
| 1992.4 | 12.14% | 7.52% | 4.62% |
| 1993.1 | 11.84% | 7.07% | 4.76% |
| 1993.2 | 11.64% | 6.86% | 4.78% |
| 1993.3 | 11.15% | 6.32% | 4.84% |
| 1993.4 | 11.04% | 6.14% | 4.91% |
| 1994.1 | 11.07% | 6.58% | 4.49% |
| 1994.2 | 11.13% | 7.36% | 3.77% |
| 1994.3 | 12.75% | 7.59% | 5.16% |
| 1994.4 | 11.24% | 7.96% | 3.28% |
| 1995.1 | 11.96% | 7.63% | 4.33% |
| 1995.2 | 11.32% | 6.94% | 4.37% |
| 1995.3 | 11.37% | 6.72% | 4.65% |
| 1995.4 | 11.58% | 6.24% | 5.35% |
| 1996.1 | 11.46% | 6.29% | 5.17% |
| 1996.2 | 11.46% | 6.92% | 4.54% |
| 1996.3 | 10.70% | 6.97% | 3.73% |
| 1996.4 | 11.56% | 6.62% | 4.94% |
| 1997.1 | 11.08% | 6.82% | 4.26% |
| 1997.2 | 11.62% | 6.94% | 4.68% |
| 1997.3 | 12.00% | 6.53% | 5.47% |
| 1997.4 | 11.06% | 6.15% | 4.91% |
| 1998.1 | 11.31% | 5.88% | 5.43% |
| 1998.2 | 12.20% | 5.85% | 6.35% |
| 1998.3 | 11.65% | 5.48% | 6.17% |
| 1998.4 | 12.30% | 5.11% | 7.19% |
| 1999.1 | 10.40% | 5.37% | 5.03% |
| 1999.2 | 10.94% | 5.80% | 5.14% |
| 1999.3 | 10.75% | 6.04% | 4.71% |
| 1999.4 | 11.10% | 6.26% | 4.84% |
| 2000.1 | 11.21% | 6.30% | 4.92% |
| 2000.2 | 11.00% | 5.98% | 5.02% |
| 2000.3 | 11.68% | 5.79% | 5.89% |
| 2000.4 | 12.50% | 5.69% | 6.81% |
| 2001.1 | 11.38% | 5.45% | 5.93% |
| 2001.2 | 10.88% | 5.70% | 5.17% |
| 2001.3 | 10.76% | 5.53% | 5.23% |
| 2001.4 | 11.57% | 5.30% | 6.27% |
| 2002.1 | 10.05% | 5.52% | 4.53% |
| 2002.2 | 11.41% | 5.62% | 5.79% |
| 2002.3 | 11.25% | 5.09% | 6.16% |
| 2002.4 | 11.57% | 4.93% | 6.63% |
| 2003.1 | 11.43% | 4.85% | 6.57% |
| 2003.2 | 11.16% | 4.60% | 6.56% |
| 2003.3 | 9.88% | 5.11% | 4.76% |
| 2003.4 | 11.09% | 5.11% | 5.98% |
| 2004.1 | 11.00% | 4.88% | 6.12% |
| 2004.2 | 10.64% | 5.34% | 5.30% |
| 2004.3 | 10.75% | 5.11% | 5.64% |

**BOND YIELD PLUS RISK PREMIUM**

| | [1] | [2] | [3] |
|---|---|---|---|
| Quarter | Average Authorized Electric ROE | U.S. Govt. 30-year Treasury | Risk Premium |
| 2004.4 | 10.91% | 4.93% | 5.98% |
| 2005.1 | 10.56% | 4.71% | 5.85% |
| 2005.2 | 10.13% | 4.47% | 5.65% |
| 2005.3 | 10.85% | 4.42% | 6.42% |
| 2005.4 | 10.59% | 4.65% | 5.94% |
| 2006.1 | 10.38% | 4.63% | 5.75% |
| 2006.2 | 10.63% | 5.14% | 5.49% |
| 2006.3 | 10.06% | 5.00% | 5.07% |
| 2006.4 | 10.39% | 4.74% | 5.64% |
| 2007.1 | 10.39% | 4.80% | 5.59% |
| 2007.2 | 10.27% | 4.99% | 5.28% |
| 2007.3 | 10.02% | 4.95% | 5.07% |
| 2007.4 | 10.43% | 4.61% | 5.81% |
| 2008.1 | 10.15% | 4.41% | 5.74% |
| 2008.2 | 10.54% | 4.57% | 5.96% |
| 2008.3 | 10.38% | 4.45% | 5.93% |
| 2008.4 | 10.39% | 3.64% | 6.74% |
| 2009.1 | 10.45% | 3.44% | 7.01% |
| 2009.2 | 10.58% | 4.17% | 6.41% |
| 2009.3 | 10.41% | 4.32% | 6.09% |
| 2009.4 | 10.54% | 4.34% | 6.20% |
| 2010.1 | 10.45% | 4.62% | 5.82% |
| 2010.2 | 10.08% | 4.37% | 5.71% |
| 2010.3 | 10.29% | 3.86% | 6.43% |
| 2010.4 | 10.34% | 4.17% | 6.17% |
| 2011.1 | 9.96% | 4.56% | 5.40% |
| 2011.2 | 10.12% | 4.34% | 5.78% |
| 2011.3 | 10.36% | 3.70% | 6.66% |
| 2011.4 | 10.34% | 3.04% | 7.31% |
| 2012.1 | 10.30% | 3.14% | 7.17% |
| 2012.2 | 9.92% | 2.94% | 6.98% |
| 2012.3 | 9.78% | 2.74% | 7.04% |
| 2012.4 | 10.07% | 2.86% | 7.21% |
| 2013.1 | 9.77% | 3.13% | 6.64% |
| 2013.2 | 9.84% | 3.14% | 6.70% |
| 2013.3 | 9.83% | 3.71% | 6.12% |
| 2013.4 | 9.82% | 3.79% | 6.04% |
| 2014.1 | 9.57% | 3.69% | 5.88% |
| 2014.2 | 9.83% | 3.44% | 6.39% |
| 2014.3 | 9.79% | 3.27% | 6.52% |
| 2014.4 | 9.78% | 2.96% | 6.81% |
| 2015.1 | 9.66% | 2.55% | 7.11% |
| 2015.2 | 9.50% | 2.88% | 6.61% |
| 2015.3 | 9.40% | 2.96% | 6.44% |
| 2015.4 | 9.65% | 2.96% | 6.69% |
| 2016.1 | 9.70% | 2.72% | 6.98% |
| 2016.2 | 9.41% | 2.57% | 6.84% |
| 2016.3 | 9.76% | 2.28% | 7.48% |
| 2016.4 | 9.55% | 2.83% | 6.72% |
| 2017.1 | 9.61% | 3.05% | 6.57% |
| 2017.2 | 9.61% | 2.90% | 6.71% |
| 2017.3 | 9.73% | 2.82% | 6.91% |
| 2017.4 | 9.74% | 2.82% | 6.92% |
| 2018.1 | 9.59% | 3.02% | 6.57% |
| 2018.2 | 9.57% | 3.09% | 6.49% |
| 2018.3 | 9.66% | 3.06% | 6.60% |
| 2018.4 | 9.44% | 3.27% | 6.17% |
| 2019.1 | 9.57% | 3.01% | 6.55% |
| 2019.2 | 9.58% | 2.78% | 6.79% |
| 2019.3 | 9.57% | 2.29% | 7.28% |
| 2019.4 | 9.74% | 2.26% | 7.49% |
| 2020.1 | 9.45% | 1.89% | 7.56% |
| 2020.2 | 9.52% | 1.38% | 8.14% |
| 2020.3 | 9.34% | 1.37% | 7.98% |
| 2020.4 | 9.32% | 1.62% | 7.69% |
| 2021.1 | 9.45% | 2.07% | 7.38% |
| 2021.2 | 9.46% | 2.26% | 7.20% |
| 2021.3 | 9.37% | 1.93% | 7.43% |
| 2021.4 | 9.37% | 1.95% | 7.42% |
| 2022.1 | 9.34% | 2.25% | 7.08% |
| 2022.2 | 9.35% | 3.05% | 6.30% |
| 2022.3 | 9.14% | 3.26% | 5.88% |
| 2022.4 | 9.72% | 3.89% | 5.83% |
| 2023.1 | 9.71% | 3.75% | 5.96% |
| 2023.2 | 9.54% | 3.81% | 5.73% |
| 2023.3 | 9.63% | 4.23% | 5.40% |
| 2023.4 | 9.68% | 4.58% | 5.09% |
| 2024.1 | 9.66% | 4.32% | 5.34% |
| 2024.2 | 9.78% | 4.64% | 5.15% |
| AVERAGE | 11.44% | 6.07% | 5.38% |
| MEDIAN | 10.97% | 5.32% | 5.54% |




SUMMARY OUTPUT

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.9133175 |
| R Square | 0.8341489 |
| Adjusted R Square | 0.8332066 |
| Standard Error | 0.0056850 |
| Observations | 178 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 1 | 0.02861 | 0.02861 | 885.19282 | 0.00000 |
| Residual | 176 | 0.00569 | 0.00003 | | |
| Total | 177 | 0.03430 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 0.0790 | 0.00 | 83.25 | 0.0000 | 0.0771 | 0.0808 | 0.0771 | 0.0808 |
| U.S. Govt. 30-year Treasury | (0.4157) | 0.01 | (29.75) | 0.0000 | (0.4433) | (0.3881) | (0.4433) | (0.3881) |

| | U.S. Govt. 30-year Treasury | Risk Premium | ROE |
|---|---|---|---|
| Current 30-day average of 30-year U.S. Treasury bond yield [4] | 4.66% | 5.96% | 10.62% |
| Blue Chip Near-Term Projected Forecast (Q3 2024 - Q3 2025) [5] | 4.40% | 6.07% | 10.47% |
| Blue Chip Long-Term Projected Forecast (2025-2029) [6] | 4.30% | 6.11% | 10.41% |
| AVERAGE | | | 10.50% |

Notes:
[1] Source: Regulatory Research Associates, rate cases through May 31, 2024
[2] Source: S&P Capital IQ Pro, quarterly bond yields are the average of each trading day in the quarter
[3] Equals Column [1] − Column [2]
[4] Source: S&P Capital IQ Pro, 30-day average as of May 31, 2024
[5] Source: Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 2
[6] Source: Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 14
[7] See notes [4], [5] & [6]
[8] Equals 0.078976 + (-0.415692 x Column [7])
[9] Equals Column [7] + Column [8]

PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF 2023 NET PLANT
*($ Millions)*

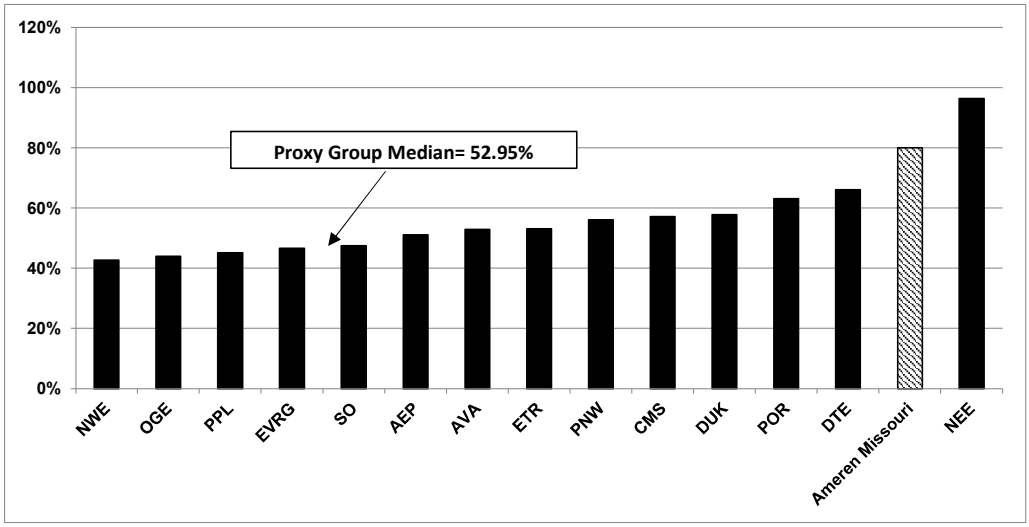
| | | [1] | [2] | [3] | [4] | [5] | [6] | [7] | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Projected Cap. Ex. / 2023 Net Plant | Rank |
| Alliant Energy Corporation | LNT | | | | | | | | |
| Capital Spending per Share | | | $5.80 | $5.60 | $5.50 | $5.40 | $5.40 | | |
| Common Shares Outstanding | | | 256.70 | 256.70 | 256.85 | 257.00 | 257.00 | | |
| Capital Expenditures | | | $1,488.9 | $1,437.5 | $1,412.7 | $1,387.8 | $1,387.8 | 41.5% | 1 |
| Net Plant | | $17,157.0 | | | | | | | |
| American Electric Power Company | AEP | | | | | | | | |
| Capital Spending per Share | | | $14.15 | $14.10 | $14.05 | $14.00 | $14.00 | | |
| Common Shares Outstanding | | | 530.00 | 535.00 | 542.50 | 550.00 | 550.00 | | |
| Capital Expenditures | | | $7,499.5 | $7,543.5 | $7,622.1 | $7,700.0 | $7,700.0 | 51.0% | 7 |
| Net Plant | | $74,600.0 | | | | | | | |
| Avista Corporation | AVA | | | | | | | | |
| Capital Spending per Share | | | $6.95 | $7.15 | $7.33 | $7.50 | $7.50 | | |
| Common Shares Outstanding | | | 79.00 | 81.00 | 83.00 | 85.00 | 85.00 | | |
| Capital Expenditures | | | $549.1 | $579.2 | $608.0 | $637.5 | $637.5 | 52.8% | 8 |
| Net Plant | | $5,700.1 | | | | | | | |
| CMS Energy Corporation | CMS | | | | | | | | |
| Capital Spending per Share | | | $9.00 | $9.80 | $9.78 | $9.75 | $9.75 | | |
| Common Shares Outstanding | | | 295.00 | 295.50 | 297.75 | 300.00 | 300.00 | | |
| Capital Expenditures | | | $2,655.0 | $2,895.9 | $2,910.5 | $2,925.0 | $2,925.0 | 57.1% | 11 |
| Net Plant | | $25,072.0 | | | | | | | |
| Detroit Edison | DTE | | | | | | | | |
| Capital Spending per Share | | | $17.50 | $17.75 | $18.13 | $18.50 | $18.50 | | |
| Common Shares Outstanding | | | 205.50 | 205.50 | 205.75 | 206.00 | 206.00 | | |
| Capital Expenditures | | | $3,596.3 | $3,647.6 | $3,729.2 | $3,811.0 | $3,811.0 | 66.0% | 15 |
| Net Plant | | $28,169.0 | | | | | | | |
| Duke Energy Corporation | DUK | | | | | | | | |
| Capital Spending per Share | | | $17.60 | $17.75 | $17.25 | $16.75 | $16.75 | | |
| Common Shares Outstanding | | | 772.00 | 773.00 | 774.00 | 775.00 | 775.00 | | |
| Capital Expenditures | | | $13,587.2 | $13,720.8 | $13,351.5 | $12,981.3 | $12,981.3 | 57.8% | 12 |
| Net Plant | | $115,315.0 | | | | | | | |
| Entergy Corporation | ETR | | | | | | | | |
| Capital Spending per Share | | | $21.00 | $22.00 | $20.88 | $19.75 | $19.75 | | |
| Common Shares Outstanding | | | 218.00 | 222.00 | 226.00 | 230.00 | 230.00 | | |
| Capital Expenditures | | | $4,578.0 | $4,884.0 | $4,717.8 | $4,542.5 | $4,542.5 | 53.1% | 9 |
| Net Plant | | $43,834.0 | | | | | | | |
| Evergy, Inc. | EVRG | | | | | | | | |
| Capital Spending per Share | | | $9.25 | $9.30 | $9.40 | $9.50 | $9.50 | | |
| Common Shares Outstanding | | | 230.00 | 230.00 | 230.00 | 230.00 | 230.00 | | |
| Capital Expenditures | | | $2,127.5 | $2,139.0 | $2,162.0 | $2,185.0 | $2,185.0 | 46.6% | 5 |
| Net Plant | | $23,150.0 | | | | | | | |
| IDACORP, Inc. | IDA | | | | | | | | |
| Capital Spending per Share | | | $17.00 | $14.00 | $13.00 | $12.00 | $12.00 | | |
| Common Shares Outstanding | | | 51.00 | 51.50 | 52.25 | 53.00 | 53.00 | | |
| Capital Expenditures | | | $867.0 | $721.0 | $679.3 | $636.0 | $636.0 | 61.6% | 13 |
| Net Plant | | $5,745.2 | | | | | | | |

PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF 2023 NET PLANT
*($ Millions)*

| | | [1] | [2] | [3] | [4] | [5] | [6] | [7] | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Projected Cap. Ex. / 2023 Net Plant | Rank |
| NextEra Energy, Inc. | NEE | | | | | | | | |
| Capital Spending per Share | | | $11.00 | $11.00 | $11.50 | $12.00 | $12.00 | | |
| Common Shares Outstanding | | | 2,055.00 | 2,065.00 | 2,107.50 | 2,150.00 | 2,150.00 | | |
| Capital Expenditures | | | $22,605.0 | $22,715.0 | $24,236.3 | $25,800.0 | $25,800.0 | 96.3% | 18 |
| Net Plant | | $125,776.0 | | | | | | | |
| NorthWestern Corporation | NWE | | | | | | | | |
| Capital Spending per Share | | | $8.15 | $8.15 | $8.20 | $8.25 | $8.25 | | |
| Common Shares Outstanding | | | 61.50 | 62.00 | 63.00 | 64.00 | 64.00 | | |
| Capital Expenditures | | | $501.2 | $505.3 | $516.6 | $528.0 | $528.0 | 42.7% | 2 |
| Net Plant | | $6,039.8 | | | | | | | |
| OGE Energy Corporation | OGE | | | | | | | | |
| Capital Spending per Share | | | $4.75 | $4.75 | $4.75 | $4.75 | $4.75 | | |
| Common Shares Outstanding | | | 200.20 | 200.20 | 200.20 | 200.20 | 200.20 | | |
| Capital Expenditures | | | $951.0 | $951.0 | $951.0 | $951.0 | $951.0 | 43.9% | 3 |
| Net Plant | | $10,830.0 | | | | | | | |
| Pinnacle West Capital Corporation | PNW | | | | | | | | |
| Capital Spending per Share | | | $16.80 | $16.80 | $15.00 | $17.20 | $17.20 | | |
| Common Shares Outstanding | | | 116.00 | 119.00 | 122.00 | 125.00 | 125.00 | | |
| Capital Expenditures | | | $1,948.8 | $1,999.2 | $1,830.0 | $2,150.0 | $2,150.0 | 56.1% | 10 |
| Net Plant | | $17,980.0 | | | | | | | |
| Portland General Electric Company | POR | | | | | | | | |
| Capital Spending per Share | | | $12.90 | $11.75 | $11.38 | $11.00 | $11.00 | | |
| Common Shares Outstanding | | | 101.50 | $102.00 | 104.00 | 106.00 | 106.00 | | |
| Capital Expenditures | | | $1,309.4 | $1,198.5 | $1,183.0 | $1,166.0 | $1,166.0 | 63.1% | 14 |
| Net Plant | | $9,546.0 | | | | | | | |
| PPL Corporation | PPL | | | | | | | | |
| Capital Spending per Share | | | $3.65 | $3.70 | $3.85 | $4.00 | $4.00 | | |
| Common Shares Outstanding | | | 737.20 | $737.40 | 737.70 | 738.00 | 738.00 | | |
| Capital Expenditures | | | $2,690.8 | $2,728.4 | $2,840.1 | $2,952.0 | $2,952.0 | 45.1% | 4 |
| Net Plant | | $31,418.0 | | | | | | | |
| Southern Company | SO | | | | | | | | |
| Capital Spending per Share | | | $8.85 | $8.75 | $8.63 | $8.50 | $8.50 | | |
| Common Shares Outstanding | | | 1,095.00 | 1,095.00 | 1,095.00 | 1,095.00 | 1,095.00 | | |
| Capital Expenditures | | | $9,690.8 | $9,581.3 | $9,444.4 | $9,307.5 | $9,307.5 | 47.4% | 6 |
| Net Plant | | $99,844.0 | | | | | | | |
| Xcel Energy Inc. | XEL | | | | | | | | |
| Capital Spending per Share | | | $13.25 | $16.40 | $14.83 | $11.65 | $11.65 | | |
| Common Shares Outstanding | | | 560.00 | 565.00 | 562.50 | 580.00 | 580.00 | | |
| Capital Expenditures | | | $7,420.0 | $9,266.0 | $8,339.1 | $6,757.0 | $6,757.0 | 74.6% | 16 |
| Net Plant | | $51,642.0 | | | | | | | |
| | | | | | | | | | |
| Ameren Missouri | Ameren Missouri | | | | | | | | |
| Capital Expenditures [8] | **TOTAL** | $12,342.0 | $2,703.28 | $2,116.05 | $2,797.62 | $2,521.42 | $2,203.64 | 80.0% | 17 |
| Net Plant [9] | | $15,422.3 | | | | | | | |

Notes:
[1] - [6] Value Line, dated March 8, April 19, and May 10, 2024.
[7] Equals (Column [2] + [3] + [4] + [5] + [6]) / Column [1]
[8] Company Provided Data
[9] Company Provided Data

**PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF 2022 NET PLANT**




**Projected CAPEX / 2022 Net Plant**

| Rank | Company | | Percent |
|---|---|---|---|
| 1 | Alliant Energy Corporation | LNT | 41.5% |
| 2 | NorthWestern Corporation | NWE | 42.7% |
| 3 | OGE Energy Corporation | OGE | 43.9% |
| 4 | PPL Corporation | PPL | 45.1% |
| 5 | Evergy, Inc. | EVRG | 46.6% |
| 6 | Southern Company | SO | 47.4% |
| 7 | American Electric Power Company | AEP | 51.0% |
| 8 | Avista Corporation | AVA | 52.8% |
| 9 | Entergy Corporation | ETR | 53.1% |
| 10 | Pinnacle West Capital Corporation | PNW | 56.1% |
| 11 | CMS Energy Corporation | CMS | 57.1% |
| 12 | Duke Energy Corporation | DUK | 57.8% |
| 14 | Portland General Electric Company | POR | 63.1% |
| 15 | Detroit Edison | DTE | 66.0% |
| 17 | Ameren Missouri | Ameren Missouri | 80.0% |
| 18 | NextEra Energy, Inc. | NEE | 96.3% |
| | Proxy Group Median | | 52.95% |
| | Ameren as % of Median | | 1.51 |

Notes:
AEB-10, pp. 1-2 col. [6]

## COMPARATIVE REGULATORY COST RECOVERY RISK ASSESSMENT

| | | | | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] | [12] | [13] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Decoupling / Reveue Stabilization | | | | Capital Cost Recovery | | | | | | |
| Proxy Group Company | Operating Subsidiary | Jurisdiction | Service | Test Year | Rate Base Convention | Revenue Decoupling | Formula-Based Rates | Straight Fixed-Variable Rate Design | Total | Traditional Generation | Renewables/ Non-Traditional Generation | Delivery Infrastructure | Environmental Compliance | Total | CWIP in Rate Base | Fuel Adjustment Clause |
| Alliant Energy Corporation | Interstate Power & Light Co. | Iowa | Electric | Historical | Average | No | No | No | No | No | Yes | No | Yes | Yes | No | Yes |
| | Interstate Power & Light Co. | Iowa | Gas | Historical | Average | No | No | No | No | No | No | No | No | No | No | Yes |
| | Wisconsin Power & Light Co. | Wisconsin | Electric | Fully Forecast | Average | No | No | No | No | No | No | No | No | No | No | Yes |
| | Wisconsin Power & Light Co. | Wisconsin | Gas | Fully Forecast | Average | No | No | No | No | No | No | No | No | No | No | Yes |
| American Electric Power Company, Inc. | Southwestern Electric Power Co. | Arkansas | Electric | Historical | Year End | Partial | Yes | No | Yes | Yes | No | No | Yes | Yes | No | Yes |
| | Indiana Michigan Power Co. | Indiana | Electric | Fully Forecast | Year End | Full | No | No | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| | Kentucky Power Co. | Kentucky | Electric | Fully Forecast | Year End | Partial | No | No | Yes | No | No | Yes | No | Yes | Yes | Yes |
| | Southwestern Electric Power Co. | Louisiana | Electric | Historical | Average | Partial | Yes | No | Yes | No | No | No | No | No | Yes | Yes |
| | Indiana Michigan Power Co. | Michigan | Electric | Fully Forecast | Average | Partial | No | No | Yes | No | Yes | No | No | Yes | Yes | Yes |
| | Ohio Power Co. | Ohio | Electric | Partially Forecast | Year End | Partial | No | No | Yes | No | Yes | Yes | No | Yes | Yes | Yes |
| | Public Service Co. of Oklahoma | Oklahoma | Electric | Historical | Year End | Partial | No | No | Yes | No | Yes | Yes | No | Yes | Yes | Yes |
| | Kingsport Power Co. | Tennessee | Electric | Fully Forecast | Average | No | No | No | No | No | No | No | No | No | Yes | Yes |
| | AEP Texas Inc. | Texas | Electric | Historical | Year End | No | No | No | No | No | No | Yes | No | Yes | No | n/a |
| | Southwestern Electric Power Co. | Texas | Electric | Historical | Year End | No | No | No | No | No | No | Yes | No | Yes | No | Yes |
| | Appalachian Power Co. | Virginia | Electric | Historical | Year End | No | No | No | No | Yes | No | No | Yes | Yes | No | Yes |
| | Appalachian Power Co./Wheeling Power Co. | West Virginia | Electric | Historical | Average | No | No | No | No | No | No | No | Yes | Yes | Yes | Yes |
| Avista Corporation | Alaska Electric Light & Power Co. | Alaska | Electric | Historical | Average | No | No | No | No | No | No | No | No | No | Yes | Yes |
| | Avista Corp. | Idaho | Electric | Historical | Average | Full | No | No | Yes | No | No | No | No | No | No | Yes w/ sharing |
| | Avista Corp. | Idaho | Gas | Historical | Average | Full | No | No | Yes | No | No | No | No | No | No | Yes |
| | Avista Corp. | Oregon | Gas | Fully Forecast | Average | Partial | No | No | Yes | No | No | No | No | No | No | Yes |
| | Avista Corp. | Washington | Electric | Historical | Average | Full | No | No | Yes | No | No | No | No | No | Yes | Yes w/ sharing |
| | Avista Corp. | Washington | Gas | Historical | Average | Full | No | No | Yes | No | No | No | No | No | Yes | Yes w/ sharing |
| CMS Energy Corporation | Consumers Energy Co. | Michigan | Electric | Fully Forecast | Average | No | No | No | No | No | Yes | No | No | Yes | Yes | Yes |
| | Consumers Energy Co. | Michigan | Gas | Fully Forecast | Average | Partial | No | No | Yes | No | No | No | No | No | Yes | Yes |
| DTE Energy | DTE Electric Co. | Michigan | Electric | Fully Forecast | Average | No | No | No | No | No | Yes | No | No | Yes | Yes | Yes |
| | DTE Gas Co. | Michigan | Gas | Partially Forecast | Average | Partial | No | No | Yes | Ni | No | Yes | No | Yes | Yes | Yes |
| Duke Energy Corporation | Duke Energy Florida LLC | Florida | Electric | Fully Forecast | Average | No | No | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes |
| | Duke Energy Indiana LLC | Indiana | Electric | Historical | Year End | Partial | No | No | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| | Duke Energy Kentucky Inc. | Kentucky | Electric | Fully Forecast | Year End | Partial | No | No | Yes | No | No | No | Yes | Yes | Yes | Yes |
| | Duke Energy Kentucky Inc. | Kentucky | Gas | Fully Forecast | Year End | Partial | No | No | Yes | No | No | Yes | No | Yes | Yes | Yes |
| | Duke Energy Carolinas/Duke Energy Progress | North Carolina | Electric | Historical | Year End | No | No | No | No | No | Yes | No | Yes | Yes | Yes | Yes |
| | Piedmont Natural Gas Co. Inc. | North Carolina | Gas | Historical | Year End | Full | No | No | Yes | No | No | Yes | No | Yes | Yes | Yes |
| | Duke Energy Ohio Inc. | Ohio | Electric | Partially Forecast | Year End | Partial | No | No | Yes | No | Yes | Yes | No | Yes | Yes | Yes |
| | Duke Energy Ohio Inc. | Ohio | Gas | Partially Forecast | Year End | No | No | Yes | Yes | No | No | Yes | Yes | Yes | Yes | Yes |
| | Duke Energy Carolinas/Duke Energy Progress | South Carolina | Electric | Historical | Year End | No | No | No | No | No | Yes | No | Yes | Yes | Yes | Yes |
| | Piedmont Natural Gas Co. Inc. | South Carolina | Gas | Historical | Year End | Partial | No | No | Yes | No | No | No | No | No | Yes | Yes |
| | Piedmont Natural Gas Co. Inc. | Tennessee | Gas | Fully Forecast | Average | Partial | No | No | Yes | No | No | Yes | No | Yes | Yes | Yes |
| Entergy Corporation | Entergy Arkansas LLC | Arkansas | Electric | Fully Forecast | Year End | Partial | Yes | No | Yes | Yes | Yes | Yes | No | Yes | No | Yes |
| | Entergy New Orleans LLC | Louisiana-NOCC | Electric | Partially Forecast | Average | No | Yes | No | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| | Entergy New Orleans LLC | Louisiana-NOCC | Gas | Partially Forecast | Average | No | Yes | No | Yes | No | No | No | No | No | Yes | Yes |
| | Entergy Louisiana LLC | Louisiana | Electric | Historical | Average | Partial | Yes | No | Yes | No | No | No | Yes | Yes | Yes | Yes |
| | Entergy Louisiana LLC | Louisiana | Gas | Historical | Average | No | Yes | No | Yes | No | No | Yes | No | Yes | Yes | Yes |
| | Entergy Mississippi LLC | Mississippi | Electric | Fully Forecast | Average | Partial | Yes | No | Yes | No | No | No | No | No | Yes | Yes |
| | Entergy Texas Inc. | Texas | Electric | Historical | Year End | No | No | No | No | Yes | No | Yes | No | Yes | No | Yes |
| Evergy | Evergy Kansas Central Inc | Kansas | Electric | Historical | Year End | Partial | No | No | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| | Evergy Metro Inc. | Kansas | Electric | Historical | Year End | No | No | No | No | No | No | Yes | No | Yes | Yes | Yes |
| | Evergy Metro Inc | Missouri | Electric | Historical | Year End | Partial | No | No | Yes | No | No | Yes | No | Yes | No | Yes w/ sharing |
| | Evergy Missouri West Inc. | Missouri | Electric | Historical | Year End | Partial | No | No | Yes | No | Yes | Yes | No | Yes | No | Yes w/ sharing |
| IDACORP, Inc. | Idaho Power Co. | Idaho | Electric | Partially Forecast | Average | Full | No | No | Yes | No | No | No | No | No | No | Yes w/ sharing |
| | Idaho Power Co. | Oregon | Electric | Partially Forecast | Average | No | No | No | No | No | No | No | No | No | No | Yes |
| NextEra Energy, Inc. | Florida Power & Light Co. | Florida | Electric | Fully Forecast | Average | No | No | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes |
| | Pivotal Utility Holdings Inc. | Florida | Gas | Fully Forecast | Average | No | No | No | No | No | No | Yes | Yes | Yes | Yes | Yes |
| | Lone Star Transmission LLC | Texas | Electric | Historical | Year End | No | No | No | No | No | No | Yes | No | Yes | No | n/a |
| NorthWestern Corporation | NorthWestern Corporation | Montana | Electric | Historical | Average | No | No | No | No | No | No | No | No | No | No | Yes w/ sharing |
| | NorthWestern Corporation | Montana | Gas | Historical | Average | No | No | No | No | No | No | No | No | No | No | Yes |
| | NorthWestern Corporation | Nebraska | Gas | Historical | Year End | No | No | No | No | No | No | No | No | No | Yes | Yes |
| | NorthWestern Corporation | South Dakota | Electric | Historical | Average | No | No | No | No | No | No | No | No | No | Yes | Yes |
| | NorthWestern Corporation | South Dakota | Gas | Historical | Average | No | No | No | No | No | No | No | No | No | Yes | Yes |
| OGE Energy Corporation | Oklahoma Gas & Electric Co. | Arkansas | Electric | Historical | Year End | Partial | No | Yes | Yes | No | No | Yes | No | Yes | No | Yes |
| | Oklahoma Gas & Electric Co. | Oklahoma | Electric | Historical | Year End | Partial | No | Yes | Yes | No | No | Yes | Yes | Yes | Yes | Yes |
| Pinnacle West Capital Corporation | Arizona Public Service Co. | Arizona | Electric | Historical | Year End | Partial | No | No | Yes | No | Yes | No | Yes | Yes | No | Yes |
| Portland General Electric Company | Portland General Electric Co. | Oregon | Electric | Fully Forecast | Average | No | No | No | No | Yes | Yes | No | Yes | Yes | No | Yes |
| PPL Electric Utilities | Kentucky Utilities Co. | Kentucky | Electric | Fully Forecast | Year End | Partial | No | No | Yes | No | No | No | Yes | Yes | Yes | Yes |
| | Louisville Gas & Electric Co. | Kentucky | Electric | Fully Forecast | Year End | Partial | No | No | Yes | No | No | No | Yes | Yes | Yes | Yes |
| | Louisville Gas & Electric Co. | Kentucky | Gas | Fully Forecast | Year End | Partial | No | No | Yes | No | No | Yes | No | Yes | Yes | Yes |
| | PPL Electric Utilities Corp. | Pennsylvania | Electric | Fully Forecast | Year End | No | Yes | No | Yes | No | No | Yes | No | Yes | No | No |
| | Narragansett Electric Co. | Rhode Island | Electric | Historical | Average | Full | Yes | No | Yes | No | No | Yes | No | Yes | No | No |
| | Narragansett Electric Co. | Rhode Island | Gas | Historical | Average | Full | Yes | No | Yes | No | No | Yes | Yes | Yes | No | Yes |
| | Kentucky Utilities Co. | Virginia | Electric | Historical | Year End | No | No | No | No | No | No | No | No | No | No | Yes |
| Southern Company | Alabama Power Co. | Alabama | Electric | Historical | Average | No | Yes | No | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |

## COMPARATIVE REGULATORY COST RECOVERY RISK ASSESSMENT

| | | | | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] | [12] | [13] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Decoupling / Reveue Stabilization | | | | Capital Cost Recovery | | | | | | |
| Proxy Group Company | Operating Subsidiary | Jurisdiction | Service | Test Year | Rate Base Convention | Revenue Decoupling | Formula-Based Rates | Straight Fixed-Variable Rate Design | Total | Traditional Generation | Renewables/ Non-Traditional Generation | Delivery Infrastructure | Environmental Compliance | Total | CWIP in Rate Base | Fuel Adjustment Clause |
| | Atlanta Gas Light Co. | Georgia | Electric | Fully Forecast | Average | No | Yes | No | Yes | No | No | Yes | Yes | Yes | Yes | Yes |
| | Georgia Power Co. | Georgia | Gas | Fully Forecast | Average | No | Yes | Yes | Yes | Yes | No | No | Yes | Yes | Yes | n/a |
| | Northern Illinois Gas Co. | Illinois | Gas | Fully Forecast | Average | Partial | No | No | Yes | No | No | Yes | Yes | Yes | Yes | Yes |
| | Mississippi Power Co. | Mississippi | Electric | Fully Forecast | Average | Partial | Yes | No | Yes | No | No | No | Yes | Yes | Yes | Yes |
| | Chattanooga Gas Co. | Tennessee | Gas | Historical | Average | Partial | Yes | No | Yes | No | No | No | No | No | Yes | Yes |
| | Virginia Natural Gas Inc. | Virginia | Gas | Historical | Year End | Partial | No | No | Yes | No | No | Yes | No | Yes | No | Yes |
| Xcel Energy Inc. | Public Service Co. of Colorado | Colorado | Electric | Historical | Year End | Partial | No | No | Yes | No | Yes | No | No | Yes | Yes | Yes |
| | Public Service Co. of Colorado | Colorado | Gas | Historical | Year End | Partial | No | No | Yes | No | No | Yes | No | Yes | Yes | Yes |
| | Northern States Power Co.-Minnesota | Minnesota | Electric | Fully Forecast | Average | Partial | Yes | No | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| | Northern States Power Co.-Minnesota | Minnesota | Gas | Fully Forecast | Average | No | No | No | No | No | No | Yes | No | Yes | Yes | Yes |
| | Southwestern Public Service Co. | New Mexico | Electric | Historical | Year End | No | No | No | No | No | Yes | No | No | Yes | Yes | Yes |
| | Northern States Power Co.-Minnesota | North Dakota | Electric | Fully Forecast | Average | No | No | No | No | No | Yes | Yes | No | Yes | Yes | Yes |
| | Northern States Power Co.-Minnesota | North Dakota | Gas | Fully Forecast | Average | No | No | Yes | Yes | No | No | No | No | No | Yes | Yes |
| | Northern States Power Co.-Minnesota | South Dakota | Electric | Historical | Average | Partial | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes |
| | Southwestern Public Service Co. | Texas | Electric | Historical | Year End | No | No | No | No | No | No | No | No | No | No | Yes |
| | Northern States Power Co.-Wisconsin | Wisconsin | Electric | Fully Forecast | Average | No | No | No | No | No | No | No | No | No | No | Yes |
| | Northern States Power Co.-Wisconsin | Wisconsin | Gas | Fully Forecast | Average | No | No | No | No | No | No | No | No | No | No | Yes |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proxy Group Average | | | Fully Forecast | 33 | Year End | 38 | | | Yes | 53 | | | | Yes | 59 | Yes | 56 | Yes | 75 |
| | | | Partially Forecast | 8 | Average | 49 | | | No | 34 | | | | No | 28 | No | 31 | Yes w/ sharing | 7 |
| | | | Historical | 46 | | | | | | | | | | | | | | No | 2 |
| | | | | | | | | | | | | | | | | | | n/a | 3 |
| | | | % with Forecast: | | % with Year End: | | | % with Form of | | | | | % with Form of | | | % Yes | 64.37% | % with Full FCA | |
| | | | Test Year | 47.1% | | 43.7% | | Revenue Stabilization | 60.9% | | | | Capital Cost Recovery | 67.8% | | | | Cost Recovery | 86.2% |
| | | | | | | | | | | | | | | | | | | | 8.0% |
| Ameren Missouri [14] | | | | Historical | | Year End | Partial | No | No | Yes | No | Yes | Yes | No | Yes | | No | | | Yes |

Notes:
[1] Regulatory Research Associates, effective as of March 31, 2024
[2] Regulatory Research Associates, effective as of March 31, 2024
[3] S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022. Operating subsidiaries not covered in this report were excluded from this exhibit.
[4] Company Form 10-K, Company Tariffs, S&P Capital IQ Pro
[5] S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.
[6] Equals IF( AND( [2]=No, [3]=No, [4]=No), No, Yes)
[7] S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.
[8] S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.
[9] S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.
[10] S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.
[11] Equals IF( AND( [6]=No, [7]=No, [8]=No, [9]=No), No, Yes)
[12] S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.
[2] Regulatory Research Associates, effective as of March 31, 2024
[14] Company provided data.

**COMPARISON OF AEE AND PROXY GROUP COMPANIES**
**RRA JURISDICTIONAL RANKINGS**

| | | [1] | [2] |
|---|---|---|---|
| | | RRA | |
| | | Rank | Numeric Rank |
| Alliant Energy Corporation | Iowa | Above Average/3 | 3 |
| | Wisconsin | Above Average/3 | 3 |
| American Electric Power Company, Inc. | Arkansas | Average/1 | 4 |
| | Indiana | Average/1 | 4 |
| | Kentucky | Average/2 | 5 |
| | Louisiana — PSC | Average/2 | 5 |
| | Michigan | Above Average/3 | 3 |
| | Ohio | Average/2 | 5 |
| | Oklahoma | Average/3 | 6 |
| | Tennessee | Above Average/3 | 3 |
| | Texas — PUC | Average/3 | 6 |
| | Virginia | Average/2 | 5 |
| | West Virginia | Below Average/1 | 7 |
| Avista Corporation | Alaska | Below Average/1 | 7 |
| | Idaho | Average/2 | 5 |
| | Oregon | Average/2 | 5 |
| | Washington | Average/3 | 6 |
| CMS Energy Corporation | Michigan | Above Average/3 | 3 |
| DTE Energy Company | Michigan | Above Average/3 | 3 |
| Duke Energy | Florida | Above Average/2 | 2 |
| | Indiana | Average/1 | 4 |
| | Kentucky | Average/2 | 5 |
| | North Carolina | Above Average/3 | 3 |
| | Ohio | Average/2 | 5 |
| | South Carolina | Average/3 | 6 |
| | Tennessee | Above Average/3 | 3 |
| Entergy | Arkansas | Average/1 | 4 |
| | Louisiana — NOCC | Average/3 | 6 |
| | Louisiana — PSC | Average/2 | 5 |
| | Mississippi | Above Average/3 | 3 |
| | Texas — PUC | Average/3 | 6 |
| Evergy, Inc. | Kansas | Below Average/1 | 7 |
| | Missouri | Average/3 | 6 |
| IDACORP, Inc. | Idaho | Average/2 | 5 |
| | Oregon | Average/2 | 5 |
| NextEra Energy, Inc. | Florida | Above Average/2 | 2 |
| | Texas — PUC | Average/3 | 6 |
| NorthWestern Corporation | Montana | Below Average/1 | 7 |
| | Nebraska | Average/1 | 4 |
| | South Dakota | Average/2 | 5 |
| OGE Energy Corporation | Arkansas | Average/1 | 4 |
| | Oklahoma | Average/3 | 6 |
| Pinnacle West Capital Corporation | Arizona | Below Average/3 | 9 |
| Portland General Electric Company | Oregon | Average/2 | 5 |
| PPL Corporation | Kentucky | Average/2 | 5 |
| | Pennsylvania | Above Average/2 | 2 |
| | Rhode Island | Average/2 | 5 |
| | Virginia | Average/2 | 5 |
| Southern Company | Alabama | Above Average/1 | 1 |
| | Georgia | Above Average/2 | 2 |
| | Illinois | Average/2 | 5 |
| | Mississippi | Above Average/3 | 3 |
| | Tennessee | Above Average/3 | 3 |
| | Virginia | Average/2 | 5 |
| Xcel Energy Inc. | Colorado | Average/1 | 4 |
| | Minnesota | Average/2 | 5 |
| | North Dakota | Average/1 | 4 |
| | New Mexico | Below Average/1 | 7 |
| | South Dakota | Average/2 | 5 |
| | Texas — PUC | Average/3 | 6 |
| | Wisconsin | Above Average/3 | 3 |
| Proxy Group Average | | Average / 1 - Average / 2 | 4.61 |
| Ameren Missouri | Missouri | Average/3 | 6 |

Notes
[1] State Regulatory Evaluations, Regulatory Research Associates, as of December 4, 2023.
[2] AA/1= 1, AA/2= 2, AA/3= 3, A/1= 4, A/2= 5, A/3=6, BA/1= 7, BA/2= 8, BA/3= 9

**COMPARISON OF AEE AND PROXY GROUP COMPANIES**
**S&P JURISDICTIONAL RANKINGS**

| | | [1] S&P Rank | [2] Numeric Rank |
|---|---|---|---|
| Alliant Energy Corporation | Iowa | Most credit supportive | 1 |
| | Wisconsin | Most credit supportive | 1 |
| American Electric Power Company, Inc. | Arkansas | Highly credit supportive | 2 |
| | Indiana | Highly credit supportive | 2 |
| | Kentucky | Most credit supportive | 1 |
| | Louisiana (PSC) | Highly credit supportive | 2 |
| | Michigan | Most credit supportive | 1 |
| | Ohio | Very credit supportive | 3 |
| | Oklahoma | Very credit supportive | 3 |
| | Tennessee | Highly credit supportive | 2 |
| | Texas (PUC) | Very credit supportive | 3 |
| | Virginia | Highly credit supportive | 2 |
| | West Virginia | Very credit supportive | 3 |
| Avista Corporation | Alaska | More credit supportive | 4 |
| | Idaho | Very credit supportive | 3 |
| | Oregon | More credit supportive | 4 |
| | Washington | Very credit supportive | 3 |
| CMS Energy Corporation | Michigan | Most credit supportive | 1 |
| DTE Energy Company | Michigan | Most credit supportive | 1 |
| Duke Energy | Florida | Most credit supportive | 1 |
| | Indiana | Highly credit supportive | 2 |
| | Kentucky | Most credit supportive | 1 |
| | North Carolina | Highly credit supportive | 2 |
| | Ohio | Very credit supportive | 3 |
| | South Carolina | More credit supportive | 4 |
| | Tennessee | Highly credit supportive | 2 |
| Entergy | Arkansas | Highly credit supportive | 2 |
| | Louisiana (NOCC) | More credit supportive | 4 |
| | Louisiana (PSC) | Highly credit supportive | 2 |
| | Mississippi | Very credit supportive | 3 |
| | Texas (PUC) | Very credit supportive | 3 |
| Evergy, Inc. | Kansas | Highly credit supportive | 2 |
| | Missouri | Very credit supportive | 3 |
| IDACORP, Inc. | Idaho | Very credit supportive | 3 |
| | Oregon | More credit supportive | 4 |
| NextEra Energy, Inc. | Florida | Most credit supportive | 1 |
| | Texas (PUC) | Very credit supportive | 3 |
| NorthWestern Corporation | Montana | More credit supportive | 4 |
| | Nebraska | Very credit supportive | 3 |
| | South Dakota | Very credit supportive | 3 |
| OGE Energy Corporation | Arkansas | Highly credit supportive | 2 |
| | Oklahoma | Very credit supportive | 3 |
| Pinnacle West Capital Corporation | Arizona | More credit supportive | 4 |
| Portland General Electric Company | Oregon | More credit supportive | 4 |
| PPL Corporation | Kentucky | Most credit supportive | 1 |
| | Pennsylvania | Highly credit supportive | 2 |
| | Rhode Island | Very credit supportive | 3 |
| | Virginia | Highly credit supportive | 2 |
| Southern Company | Alabama | Most credit supportive | 1 |
| | Georgia | Highly credit supportive | 2 |
| | Illinois | Very credit supportive | 3 |
| | Mississippi | Very credit supportive | 3 |
| | Tennessee | Highly credit supportive | 2 |
| | Virginia | Highly credit supportive | 2 |
| Xcel Energy Inc. | Colorado | Very credit supportive | 3 |
| | Minnesota | Highly credit supportive | 2 |
| | North Dakota | Highly credit supportive | 2 |
| | New Mexico | Credit supportive | 5 |
| | South Dakota | Very credit supportive | 3 |
| | Texas (PUC) | Very credit supportive | 3 |
| | Wisconsin | Most credit supportive | 1 |
| Proxy Group Average | | Highly Credit Supportive - Very Credit Supportive | 2.46 |
| Ameren Missouri | Missouri | Very Credit Supportive | 3 |

Notes
[1] North American Utility Regulatory Jurisdictions, S&P Global Ratings, November 10, 2023
[2] Most= 1, Highly= 2, Very= 3, More= 4, Credit Supportive= 5

**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 Electric Service. | ) ) ) | Case No. ER-2024-0319 |

**AFFIDAVIT OF ANN E. BULKLEY**

**COMMONWEALTH OF MASSACHUSETTS** )
) **ss**
**CITY OF BOSTON** )

Ann E. Bulkley, being first duly sworn states:

My name is Ann E. Bulkley, and on my oath declare that I am of sound mind and lawful age; that I have prepared the foregoing *Direct Testimony*; and further, under the penalty of perjury, that the same is true and correct to the best of my knowledge and belief.

Ann E. Bulkley

Sworn to me this 27th day of June, 2024.