# DIRECT TESTIMONY OF JAMES M. COYNE
**On Behalf of Arizona Public Service Company**
**Docket No. E-01345A-25-0105**

**June 13, 2025**

**Table of Contents**

ATTACHMENTS

JMC-1DR - Educational and Professional Background
JMC-2DR - Proxy Group Selection
JMC-3DR - Constant Growth DCF Model
JMC-4.1DR - Beta Coefficients for CAPM Analysis
JMC-4.2DR - Total Market Return for S&P 500
JMC-4.3DR - Historical Market Risk Premium
JMC-4.4DR - CAPM Analysis – Forward-Looking MRP
JMC-4.5DR - CAPM Analysis – Historical MRP
JMC-5DR - Risk Premium Analysis
JMC-6DR - Expected Earnings Analysis
JMC-7.1DR - Capex Analysis
JMC-7.2DR - Capex Analysis Chart
JMC-8DR - Regulatory Risk Assessment
JMC-9DR - Nuclear Generation Analysis
JMC-10DR - Alternative Rate Plans
JMC-11DR - Capital Structure Analysis
JMC-12DR - Return on Fair Value Rate Base Increment

**DIRECT TESTIMONY OF JAMES M. COYNE**
**ON BEHALF OF ARIZONA PUBLIC SERVICE COMPANY**
**(Docket No. E-01345A-25-0105)**

## I. INTRODUCTION

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is James M. Coyne. My business address is 293 Boston Post Road West, Suite 500, Marlborough, MA 01752.

**Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

A. I am employed by Concentric Energy Advisors, Inc. (Concentric) as a Senior Vice President.

**Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS DIRECT TESTIMONY?**

A. I am submitting this Direct Testimony on behalf of Arizona Public Service Company (APS or Company) to the Arizona Corporation Commission (ACC or Commission). APS is a wholly-owned subsidiary of Pinnacle West Capital Corporation (Pinnacle West).

**Q. PLEASE DESCRIBE YOUR EDUCATION AND EXPERIENCE.**

A. I provide expert testimony before federal, state and Canadian provincial agencies on matters pertaining to economics, finance, and public policy in the energy industry. I regularly advise utilities, generating companies, public bodies, and private equity investors on business issues pertaining to the utility industry. This work includes calculating the cost of capital for the purpose of ratemaking and providing expert testimony and studies on matters pertaining to rate policy, valuation, capital costs, and fuels and power markets. I have authored numerous articles on the energy industry,

lectured on utility regulation for regulatory commission staff, and provided testimony on more than 50 occasions before the Federal Energy Regulatory Commission (FERC) as well as state and provincial jurisdictions in the U.S. and Canada. I hold a Bachelor of Science in Business Administration from Georgetown University and a Master of Science in Resource Economics from the University of New Hampshire. My educational and professional background is summarized more fully in Attachment JMC-1DR.

**Q. PLEASE DESCRIBE CONCENTRIC.**

A. Concentric is a management consulting and economic advisory firm, focused on the North American energy industry. Based in Marlborough, Massachusetts and with offices in Washington, D.C. and Calgary, Alberta, Concentric specializes in regulatory and litigation support, financial advisory services, energy market strategies, market assessments, energy commodity contracting and procurement, economic feasibility studies, and capital market analyses.

## II. PURPOSE AND OVERVIEW

**Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

A. The purpose of my Direct Testimony is to present evidence to support my recommendation regarding an appropriate return on equity (ROE)[1] for the Company's regulated electric utility operations and to assess the reasonableness of the Company's proposed capital structure for rate-making purposes as proposed in the Direct Testimony

[1] I use the terms "ROE," "return on equity" and "cost of equity," interchangeably throughout my Direct Testimony.

of APS witness Chris R. Bauer. My Direct Testimony also provides evidence and a recommendation as to the appropriate return on the Fair Value Rate Base (FVRB) Increment and the Fair Value Rate of Return (FVROR). My analyses and conclusions are supported by the data presented in Attachment JMC-2DR through Attachment JMC-12DR, which were prepared by me or under my direction.

**Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT YOU CONDUCTED TO SUPPORT YOUR ROE RECOMMENDATION.**

A. My ROE recommendation is based on the results from the Constant Growth form of the Discounted Cash Flow (DCF) model, the Capital Asset Pricing Model (CAPM), the Bond Yield Plus Risk Premium method (Risk Premium), and the Expected Earnings approach. The advantage of using multiple models is to mitigate the impacts of market factors that may unduly influence any one model's results. My application of the DCF model is based on reputable third-party growth rate projections, as well as market-based information on current annualized dividends and recent stock prices. The CAPM analysis is based on a risk-free rate and market risk premium and betas from reputable sources. The Risk Premium model is based on a projected risk-free rate and the relationship between actual authorized ROEs in the U.S. and bond yields. The Expected Earnings approach is based on projected returns from the Value Line Investment Survey for the companies in my proxy group.

In addition to the analyses discussed above, I also consider the Company's capital expenditure program, its regulatory environment and cost recovery mechanisms relative to a set of proxy companies (described later in my testimony), its ownership of

generation assets including nuclear, and its exposure to wildfire risk to assist with determining the appropriate ROE within the range of results.

**Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE APPROPRIATE COST OF EQUITY AND FVROR FOR APS?**

A. As summarized in Figure 1 below, the ROE analyses presented in my Direct Testimony indicate a range of results from 10.20 percent to 11.60 percent from a combination of models and alternative input assumptions. Based on the results of all four methods (i.e., DCF, CAPM, Risk Premium and Expected Earnings), and in light of the business risks of APS relative to the proxy group, combined with my observations pertaining to capital market conditions, my analyses support an authorized ROE of 10.70 percent for APS, just below the mean of all methods

**Figure 1: Summary of ROE Results**

| **DCF – 90-day Average** | **Results** |
|---|---|
| Constant Growth – Mean | 10.16% |
| **CAPM – Forward MRP, Forecast Bond Yield** | |
| Value Line Beta | 14.31% |
| Bloomberg Beta – 5-year | 11.29% |
| Bloomberg Beta – 10-year | 12.61% |
| **CAPM – Historical MRP, Current Bond Yield** | |
| Value Line Beta | 11.51% |
| Bloomberg Beta – 5-year | 9.42% |
| Bloomberg Beta – 10-year | 10.33% |
| **CAPM Average** | 11.58% |
| **Risk Premium – 30 Yr. U.S. Treasury** | |
| 30-Yr. U.S. Treasury – LT Forecast | 10.45% |
| **Expected Earnings - Median** | 10.71% |
| **Mean of All Methods** | **10.73%** |

In addition, the Company's proposed return on the Fair Value Rate Base (FVRB) Increment of 1.00 percent is significantly lower than reasonable estimates of the minimum rate of return that should be applied to the FVRB Increment and results in a FVROR of 4.84 percent.

**Q. HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY ORGANIZED?**

A. The balance of my Direct Testimony is organized as follows: Section III provides background on the regulatory principles behind making an ROE determination in general. Section IV presents a review of current and projected economic and capital market conditions and their impacts on utility cost of capital. Section V describes the criteria and approach for selecting a proxy group of comparable companies. Section VI provides a description of the market data used to estimate the cost of equity, as well as

the results of the Constant Growth DCF, CAPM, Risk Premium, and Expected Earnings analyses. Section VII provides an assessment of the business risk factors I have considered in selecting an appropriate ROE for APS. Section VIII assesses the reasonableness of APS's proposed capital structure in the context of the proxy group. Section IX discusses my estimation of the return on the FVRB Increment and the FVROR. Lastly, Section X summarizes my results, conclusions, and recommendations.

## III. REGULATORY PRINCIPLES

**Q. PLEASE DESCRIBE THE GUIDING PRINCIPLES USED IN ESTABLISHING THE COST OF CAPITAL FOR A REGULATED UTILITY.**

A. Utilities are entitled by law to receive a fair rate of return sufficient to attract needed capital at reasonable rates. The basic tenets of this regulatory doctrine originate from several bellwether decisions by the United States Supreme Court, and that doctrine is followed to the same degree across the country with respect to state-level rate-making, including in Arizona.

**Q. PLEASE BRIEFLY DISCUSS HOW THOSE PRINCIPLES APPLY IN THE CONTEXT OF THE REGULATED RATE OF RETURN.**

A. Regulated utilities rely primarily on common stock and long-term debt to finance their permanent property, plant, and equipment. The allowed rate of return for a regulated utility is based on its weighted average cost of capital, where the costs of the individual sources of capital, debt, and equity are weighted by their respective book values. The ROE represents the cost of raising and retaining equity capital, and is estimated through

one or more analytical techniques that use market data to quantify investor expectations regarding equity returns.

However, the ROE cannot be derived solely through quantitative metrics and models. To properly estimate the ROE, the financial, regulatory, and economic context in which the analysis takes place must also be considered. The DCF, CAPM, Risk Premium, and Expected Earnings approaches, while fundamental to the ROE determination, are still only models. One should not assume that the results of these models can be mechanistically applied without also considering informed judgment, the context of capital market conditions, and the relative risk of APS as compared to the proxy group companies.

Also, it is important to note that the U.S. Supreme Court has held that, under the statutory standard of "just and reasonable," it is the result reached, not the method employed, which is controlling.[2] Consequently, it is appropriate to consider a variety of approaches and data sources when arriving at a recommended ROE.

Based on these widely recognized standards, the ACC's order in this case should provide APS with the opportunity to earn a return on equity that is:

- Commensurate with returns on investments in enterprises having comparable risks;
- Adequate to attract capital on reasonable terms, thereby enabling APS to provide safe, reliable service; and

[2] *Fed.l Power Com. v. Hope Nat. Gas Co., 320 U.S. 591, 602 (1944).*

- Sufficient to ensure the financial soundness of the Company's operations.

Importantly, a fair return must satisfy all three of these standards. The allowed ROE should enable APS to finance capital expenditures on reasonable terms and provide the Company financial flexibility to access debt and equity capital under a variety of economic and capital market conditions over the period during which rates are expected to remain in effect.

**Q. WHAT IS THE RELATIONSHIP BETWEEN THE REGULATORY ENVIRONMENT AND CAPITAL MARKET EXPECTATIONS?**

A. The ratemaking process is premised on the principle that, in order for investors and companies to commit the capital needed to provide safe and reliable utility services, the utility must have the opportunity to recover its invested capital, and the market-required return on that capital. Because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital on reasonable terms. Such decisions balance the long-term interests of customers and shareholders. The financial community carefully monitors the current and expected financial condition of utility companies, as well as the regulatory environment in which they operate. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' assessments of risk. It is therefore important for the ROE authorized in this proceeding to take into consideration the current and expected capital market conditions with which APS must contend, as well as investors' expectations and requirements regarding both risks and returns.

## IV. ECONOMIC AND CAPITAL MARKET CONDITIONS

**Q. WHY IS IT IMPORTANT TO CONSIDER THE EFFECTS OF PREVAILING ECONOMIC AND CAPITAL MARKET CONDITIONS WHEN SETTING THE ROE?**

A. The required cost of capital, including the ROE, is a function of prevailing and expected conditions in the general economy and in capital markets. The standard ROE estimation tools, such as the DCF, CAPM and Risk Premium models, each reflect the state of the general economy and financial markets by incorporating specific economic and financial data. These inputs are, however, only samples of the various economic and market forces that may affect a utility's ROE going forward. Consideration must be given to whether the assumptions relied on in the current or projected data are sustainable over the period that the recommended ROE will be in effect. If investors do not expect current market conditions to be sustained in the future, it is possible that the ROE estimation models will not provide an accurate estimate of investors' required return. Therefore, an assessment of market conditions is integral to any ROE recommendation.

**Q. WHAT ARE THE KEY GLOBAL ECONOMIC AND CAPITAL MARKET FACTORS AFFECTING THE RETURN ON EQUITY FOR REGULATED UTILITIES?**

A. The return on equity for regulated utilities is being affected by several key economic and market factors, including: (1) the general state of the economy; (2) the current and prospective interest rate environment; (3) the current and longer-term outlook for

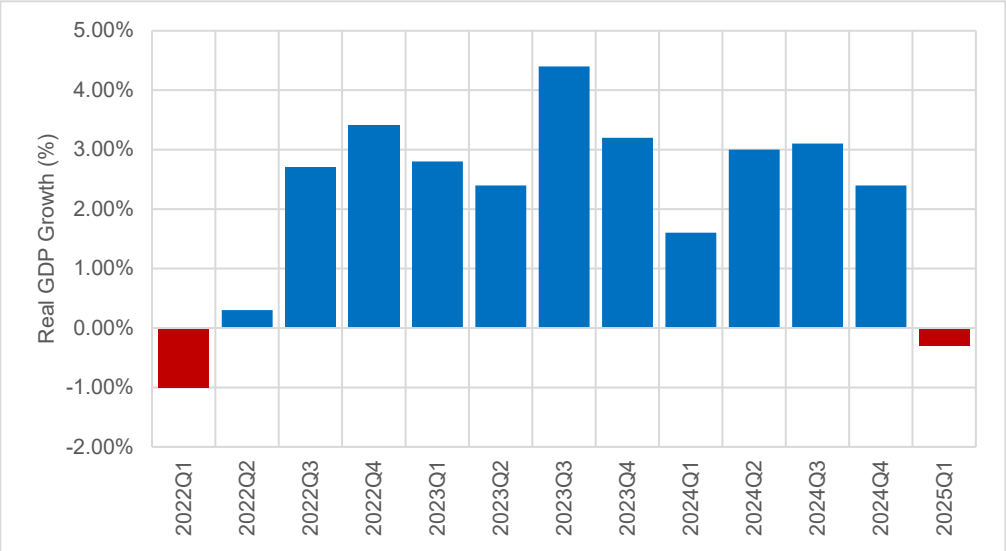
inflation; and (4) evolving trade policy. In this section, I discuss each of these factors and how they affect the models used to estimate the equity return for regulated utilities.

**Q. PLEASE DISCUSS ECONOMIC CONDITIONS.**

A. Real Gross Domestic Product (GDP) grew at an annual rate of 2.8 percent in 2024 compared to 2.9 percent in 2023.[3] Figure 2 shows that real GDP has grown steadily since the third quarter of 2022. Economic uncertainty has returned in 2025, as long-term interest rates have remained elevated, the path of monetary policy has become more uncertain, inflationary pressure has remained more persistent than expected, and U.S. trade policy (i.e., tariffs) has cast a shadow over the rate of economic growth both domestically and internationally. According to the "advance" estimate, real GDP contracted at an annualized rate of 0.3 percent in the first quarter of 2025.[4]

[3] U.S. Department of Commerce, Bureau of Economic Analysis, accessed March 27, 2025.
[4] *Id.*, as of April 30, 2025.

**Figure 2: U.S. Real GDP Growth[5]**




**Q. PLEASE DISCUSS THE PATH OF MONETARY POLICY.**

A. Following the lead of other central banks around the world, the Federal Reserve voted to reduce the federal funds rate three times in the second half of 2024, and it stands at 4.25 to 4.50 percent as of May 2025. The Federal Reserve has indicated that one or two additional cuts in the federal funds rate of 25 basis points each are possible in 2025, depending on the balance of economic data on inflation, unemployment, and economic growth. Prior to the December 2024 Federal Open Market Committee (FOMC) meeting, the Federal Reserve had been expecting to cut the federal funds rate by one full percentage point in 2025. In his comments following the March 2025 FOMC meeting, Chair Powell indicated that the Federal Reserve now projected inflation to be somewhat higher than previously anticipated (i.e., 2.8 percent in 2025 vs. prior forecast of 2.5 percent) and economic growth to be somewhat lower than expected (i.e., real GDP

[5] Source: U.S. Department of Commerce, Bureau of Economic Analysis.

growth of 1.7 percent in 2025 vs. prior forecast of 2.1 percent) because of the "uncertainty around the economic outlook" due to tariffs.[6]

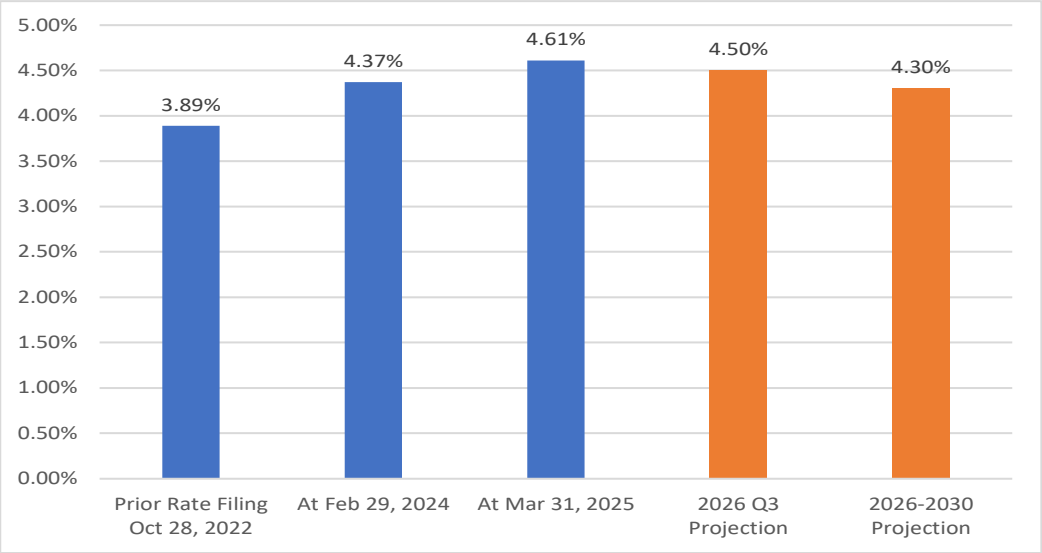
**Q. HOW HAVE GOVERNMENT BOND YIELDS CHANGED SINCE APS'S PREVIOUS RATE CASE IN 2022, AND WHAT ARE THE IMPLICATIONS FOR EQUITY INVESTORS CONSIDERING THE UTILITY SECTOR?**

A. The 30-day average yield on 30-year Treasury bonds was 3.89 percent as of October 28, 2022 (when the Company's last rate case was filed) and 4.37 percent as of February 29, 2024 (immediately prior to when the Commission issued its decision in APS's last rate case). As shown in Figure 3, as of March 31, 2025, the 30-day average 30-year Treasury bond yield was 4.61 percent, or 72 basis points higher than at the time of APS's previous rate case filing and 24 basis points higher than when the Commission made its decision in that case. Yields on 30-year Treasury bonds are projected to remain near current levels, at 4.50 percent in the third quarter of 2026[7] and to average 4.30 percent over the period from 2026-2030.[8]

---

6 Press Conference of Jerome Powell, Chair of U.S. Federal Reserve, (Mar. 19, 2025).
7 Blue Chip Financial Forecasts, Vol. 44, Issue No. 4, (Mar. 31, 2025) at 2.
8 Blue Chip Financial Forecasts, Vol. 43, Issue No. 12, (Nov. 27, 2024) at 14.

**Figure 3: Comparison of United States Treasury Bond Yields**



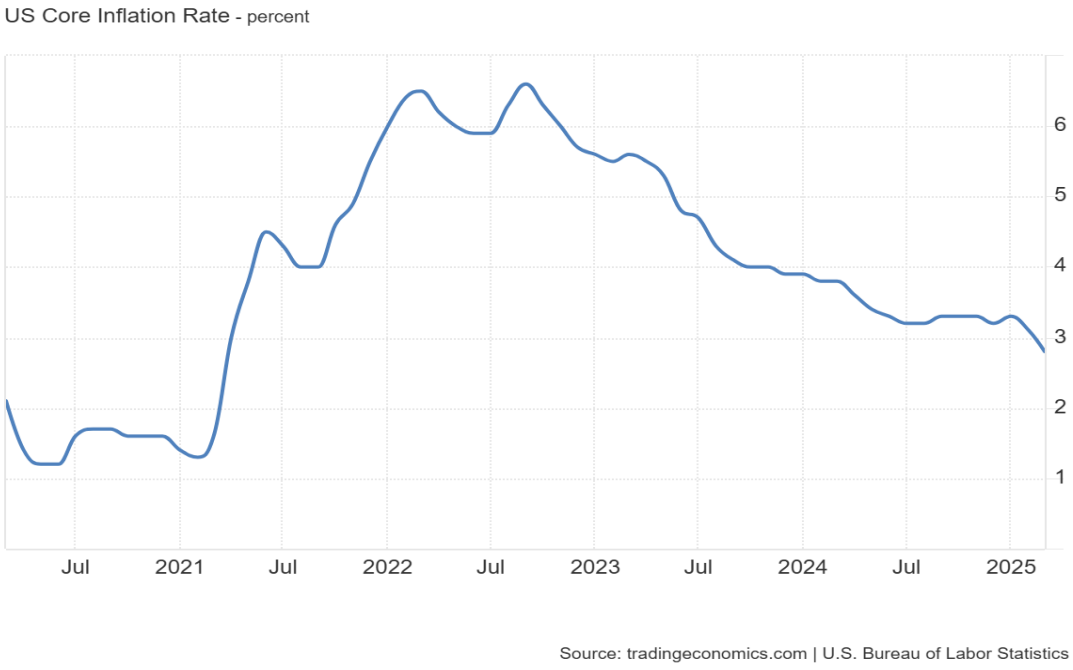

Higher yields on government bonds indicate that the cost of capital has increased for all companies, including utilities. Higher yields on long-term Treasury bonds present investors with a more attractive return on a "risk-free" alternative, and utility dividend yields must also increase in order for the companies to continue to attract equity capital. Figure 3 shows that 30-year Treasury bond yields are projected to remain at 4.30 percent or higher through 2030. While I have used both current and forecast yields on government bonds as the risk-free rate in the CAPM and Risk Premium models, my general approach is to place the most weight on the projected government bond yield over the next five years in these two analyses.

**Q. PLEASE DISCUSS THE STATUS OF INFLATION.**

A. As shown in Figure 4, the Core Inflation Rate, which excludes volatile food and energy prices, was 2.8 percent for the 12-month period as of March 2025. While the Consumer Price Index (CPI) has declined from the extreme levels of June 2022 when it reached an

annualized rate of 9.1 percent, the Core Inflation Rate remains above the Federal Reserve's long-term inflation target of 2.0 percent.

**Figure 4: Core Inflation Rate**[9]




Near-term inflation expectations have been increasing in more recent months, as shown in the University of Michigan's monthly consumer confidence survey, median long-term inflation expectations (which cover the next 5-10 years) have risen for three consecutive months and stood at 4.1 percent as of March 2025. The University of Michigan survey commented as follows: "As of March 2025, long-run expectations have climbed sharply for three consecutive months and are now comparable to the peak readings from the post-pandemic inflationary episode. They exhibit substantial uncertainty, particularly in light of frequent developments and changes with economic

[9] Source: https://tradingeconomics.com/united-states/core-inflation-rate

policy."[10] Concerns over persistent inflationary pressure caused the Federal Reserve to pause its reduction in short-term interest rates at the January 2025 FOMC meeting and to signal that only one or two cuts in the federal funds rate are likely in 2025. Blue Chip Financial Forecasts commented on the inflation outlook as follows:

> Increased tariffs are seen as a primary factor behind the worsening inflation outlook. The FOMC raised its 2025 inflation outlook markedly in the Summary of Economic Projections released after the mid-March FOMC meeting. In the ensuing press conference, Fed Chair Powell noted repeatedly that the near-term inflation outlook had been boosted by the increase in tariffs. Similarly, the BCFF consensus estimates a 47% probability of a meaningful acceleration in inflation over the next six months, up from 40% last month with increased tariffs a primary cause. Ninety-six percent of respondents think that increased tariffs will boost inflation significantly although only 34% think that the impact on inflation will be lasting. The other 62% think that increased tariffs will provide only a one-time boost to prices and inflation. Still, with inflation expectations already on the rise, there is a real risk that even a temporary boost to inflation could raise expectations further and thereby provide a more extended fillip in inflation.[11]

**Q. PLEASE DISCUSS RECENT CHANGES IN U.S. TRADE POLICY.**

A. On February 1, 2025, President Trump issued an executive order implementing a 25 percent additional tariff on imports from Canada and Mexico, and a 10 percent additional tariff on imports from China.[12] These tariffs were paused for 30 days and restored on March 4, 2025. Two days later, President Trump paused tariffs temporarily imposed on approximately half of imports from Canada and 38 percent of imports from

---

[10] Source: University of Michigan Survey of Consumers, March 2025 Update: Current vs. Pre-Pandemic Long-Run Inflation Expectations (Mar. 28, 2025).

[11] Blue Chip Financial Forecasts, Volume 44, No. 4 (Apr. 1, 2025) at 1.

[12] https://www.whitehouse.gov/fact-sheets/2025/02/fact-sheet-president-donald-j-trump-imposes-tariffs-on-imports-from-canada-mexico-and-china/

Mexico until April 2.[13] Further, on February 10, President Trump restored a 25 percent tariff on steel and increased the tariff on aluminum to 25 percent.[14] On March 24, 2025, the White House announced it would implement a 25 percent tariff on all goods from any country that imports Venezuelan oil, whether directly or indirectly.[15] On April 2, 2025, President Trump announced the administration would impose a 10 percent base tariff on all imports from nearly every country plus an additional "reciprocal" tariff customized for each of approximately 60 countries.[16] These reciprocal tariffs were subsequently paused for 90 days, but significant uncertainty remains around the future course of U.S. trade policy and how it will affect the economy. The current administration is engaged in trade negotiations with various countries including Japan and Viet Nam, and announced a trade deal with the United Kingdom in May 2025 and a 90-day reduction in tariffs on Chinese imports and exports (i.e., 30 percent on Chinese imports to the U.S. and 10 percent on U.S. exports to China) pending further efforts to reach a comprehensive trade agreement.

---

[13] https://www.whitehouse.gov/presidential-actions/2025/03/amendment-to-duties-to-address-the-flow-of-illicit-drugs-across-our-southern-border/; https://www.whitehouse.gov/presidential-actions/2025/03/amendment-to-duties-to-address-the-flow-of-illicit-drugs-across-our-northern-border-0c3c/

[14] https://www.whitehouse.gov/fact-sheets/2025/02/fact-sheet-president-donald-j-trump-restores-section-232-tariffs/

[15] https://www.whitehouse.gov/fact-sheets/2025/03/fact-sheet-president-donald-j-trump-imposes-tariffs-on-countries-importing-venezuelan-oil/#:~:text=President%20Trump%20is%20levying%20a,if%20officials%20deem%20it%20appropriate

[16] https://www.whitehouse.gov/presidential-actions/2025/04/regulating-imports-with-a-reciprocal-tariff-to-rectify-trade-practices-that-contribute-to-large-and-persistent-annual-united-states-goods-trade-deficits/

**Q. HOW MIGHT THESE CHANGES IN U.S. TRADE POLICY AFFECT INFLATION AND INTEREST RATES?**

A. Although the effect of these tariffs on the economy remains uncertain, economists generally agree that higher tariffs increase inflation by increasing the cost of consumer goods. The tariffs could lead to higher inflation and reduced overall demand, as well as higher interest rates and a stronger dollar.[17] The Budget Lab at Yale University estimates that these tariffs would raise consumer prices by 1.4 to 5.1 percent before substitution, which would be equivalent to $1,900 to $7,600 in disposable income for the average household.[18]

In a recent article published by S&P Global Market Intelligence, economists noted the "enormous uncertainty" associated with the effect of tariffs on inflation and the economy. The article projected that if President Trump's tariffs are imposed as proposed, they "would cause the core consumer price index[19] to run at a 6% annual pace on average over the next two years".[20]

Higher inflation could complicate the Federal Reserve's unwinding of restrictive monetary policies, [21] as well as increase long-term bond yields like the 30-year Treasury yield. The FOMC paused its cuts in the federal funds rate at its January 2025 meeting, citing elevated inflation and a stable labor market, and held rates steady at its March and

---

17 J.P. Morgan Asset Management, Market Insights "2025 Year-Ahead Investment Outlook," November 20, 2024.

18 Yale Budget Lab, "Fiscal, Macroeconomic, and Price Estimates of Tariffs Under Both Non-Retaliation and Retaliation Scenarios," (Oct. 16, 2024).

19 As measured by the Personal Consumption Expenditures (PCE) price index.

20 S&P Global Market Intelligence, *Tariffs projected to push US inflation near 2022 highs*, (Apr. 9, 2025).

21 *See, e.g.*, S&P Global Market Intelligence, *Tariffs projected to push US inflation near 2022 highs* (Apr. 9, 2025).

May 2025 meetings. In an April 4, 2025 speech, Federal Reserve Chair Jerome Powell stated that the outlook is "highly uncertain" and the tariff proposals are "significantly larger than expected" and are likely to result in higher inflation and slower growth.[22]

Longer-term bonds like the 30-year Treasury bond are more sensitive to inflation expectations than shorter-term bonds because their value is influenced more by inflation due to their longer maturity holding period and reinvestment rate implications. Thus, as the value (price) of bonds declines due to higher inflation expectations, the yield increases. Because utilities are capital intensive enterprises, higher inflation and interest rates tend to have a negative effect on utility stocks. If realized, higher inflation and interest rates would suggest that the cost of capital for utilities may increase in the future.

**Q. WHAT IS YOUR CONCLUSION REGARDING HOW HIGHER INTEREST RATES AND INFLATION ABOVE THE FEDERAL RESERVE'S TARGET LEVEL HAVE AFFECTED THE COST OF EQUITY FOR UTILITIES SUCH AS APS?**

A. My primary conclusion is that the cost of capital for both debt and equity has increased for utilities, including APS. This increase is reflected in the results of the models used to estimate the cost of equity. In particular, the DCF model results are higher as utility dividend yields have increased, while the CAPM and Risk Premium results have increased as government bond yields have risen. Although the Federal Reserve has cut the level of short-term interest rates, yields on long-term government and utility bond

[22] Chair Powell's speech at the Society for Advancing Business Editing and Writing Annual Conference, Arlington, Virginia, (Apr. 4, 2025), https://www.federalreserve.gov/newsevents/speech/powell20250404a.htm

yields increased sharply in 2022 and 2023 and have remained elevated as compared to the very low-interest rate environment experienced in the prior decade. Further, core inflation has remained stubbornly above the Federal Reserve's target level of 2.0 percent, and tariffs could cause inflation to increase again as companies pass through these duties to end use customers. It is important to recognize that there has been a fundamental change in economic and capital market conditions, and the cost of equity capital for all companies, including utilities, has increased.

## V. PROXY GROUP SELECTION

**Q. WHY IS IT NECESSARY TO SELECT A PROXY GROUP TO ESTIMATE THE FAIR RETURN ON EQUITY FOR APS?**

A. Because the ROE is a market-based concept and APS is not publicly-traded, it is necessary to select a group of companies that are both publicly-traded and comparable to APS to serve as a "proxy" for purposes of the ROE estimation process. Even if APS's regulated utility operations in Arizona made up the entirety of a publicly-traded entity, it is possible that transitory events could bias the Company's market value in one way or another over a given period of time. A significant benefit of using a proxy group is the ability to mitigate the effects of company-specific events that may not be representative of the industry or long-term trends. As a result of the screening criteria used to select my proxy group, the companies used in my ROE analyses have similar business and operating characteristics to APS's regulated utility operations and thus provide a reasonable basis for the derivation and assessment of ROE estimates.

**Q. PLEASE PROVIDE A BRIEF OVERVIEW OF APS'S OPERATIONS.**

A. APS provides electric generation, transmission, and distribution service to approximately 1.4 million customers located in 11 of the 15 counties in Arizona. APS has experienced rapid customer growth in recent years, with the number of residential customers increasing between 2.1 percent and 2.4 percent in each year between 2020 and 2024. That trend is expected to continue in 2025, with customer growth estimated at 1.5 to 2.5 percent.[23] APS's long-term issuer ratings are BBB+ (Outlook: Stable) from S&P, Baa1 (Outlook: Stable) from Moody's Ratings (Moody's), and BBB+ (Outlook: Stable) from Fitch Ratings (Fitch).[24]

**Q. PLEASE DESCRIBE THE SPECIFIC SCREENING CRITERIA YOU HAVE UTILIZED IN SELECTING YOUR PROXY GROUP.**

A. I began with the 36 domestic U.S. companies that Value Line classifies as "Electric Utilities" and then screened companies according to the following criteria:

1. Pays quarterly cash dividends that have not been reduced or omitted in the last two years;
2. Maintains an investment grade long-term issuer rating (BBB- or higher from S&P or Baa3 or higher from Moody's) from both S&P and Moody's;
3. Is covered by more than one equity analyst;
4. Has positive earnings growth rates from at least two of the following sources: Value Line Investment Survey ("Value Line"), S&P Capital IQ Pro, and Zacks Investment Research ("Zacks");
5. Owns generation assets that are included in rate base;

[23] Source: Pinnacle West, Investor Presentation, *Renewed, Reliable and Resilient* (Mar. 2025) at 8.
[24] Source: *Id.* at 25.

6. Regulated revenue and regulated net operating income make up more than 70 percent of the consolidated company's revenue and net operating income, respectively;

7. Regulated electric revenue and regulated electric net operating income make up at least 80 percent of the consolidated company's regulated operations; and

8. Is not involved in a merger or other transformative transaction for an approximate six-month period prior to my analysis.

**Q. DID YOU INCLUDE PINNACLE WEST IN YOUR PROXY GROUP?**

A. No. It is customary to exclude the subject company, or its parent holding company, from the proxy group due to the circular logic that would occur by including those results. If we were to include the parent company, the market data we rely on for analysis would reflect the decisions of the regulator as opposed to guiding its decisions, which is the goal of an independent cost of capital analysis. By excluding the parent company, that direct conflict can be avoided.

**Q. WHAT IS THE COMPOSITION OF YOUR PROXY GROUP?**

A. Based on the screening criteria described above, I arrived at a proxy group consisting of the companies shown in Figure 5.

**Figure 5: Proxy Group**

| Company | Ticker |
|---|---|
| Alliant Energy Corporation | LNT |
| Ameren Corporation | AEE |
| American Electric Power Company, Inc. | AEP |
| Duke Energy Corporation | DUK |
| Entergy Corporation | ETR |
| Evergy, Inc. | EVRG |
| FirstEnergy Corporation | FE |
| IDACORP, Inc. | IDA |
| NextEra Energy, Inc. | NEE |
| OGE Energy Corporation | OGE |
| TXNM Energy, Inc. | TXNM |
| Portland General Electric Company | POR |
| PPL Corporation | PPL |
| Southern Company | SO |
| Xcel Energy Inc. | XEL |

Please refer to Attachment JMC-2DR for my proxy group screening data and results.

**Q. HAVE YOU EXCLUDED ANY COMPANIES FROM THE PROXY GROUP THAT MEET YOUR STATED SCREENING CRITERIA?**

A. Yes, I have excluded Edison International (EIX) from the proxy group for APS even though EIX meets all the screening criteria. EIX announced in April 2025 that there is a high probability that the company's equipment was responsible for starting the Eaton Fire in Los Angeles in January 2025 and that the company may face "material liability" as a result. The share price of EIX has declined from about $80 per share in early January 2025 to around $55 per share in early May 2025. Although APS also has exposure to

wildfire risk, the extent of EIX's potential liability for this specific wildfire is much greater at this point in time. If I had included EIX in the proxy group for APS, the mean of all methods would have been higher. By excluding EIX from the proxy group, I am providing a conservative estimate of the cost of equity for APS.

**Q. DOES YOUR SCREENING CRITERIA RESULT IN A GROUP OF COMPANIES THAT INVESTORS WOULD VIEW AS COMPARABLE TO APS?**

A. Yes. I have selected the above group to best align with the financial and operational characteristics of APS. The screening criterion requiring an investment grade credit rating ensures that the proxy companies, like APS, are generally in sound financial condition. Additionally, I have screened on the percentage of revenues and net operating income from regulated operations to differentiate utilities that derive the large majority of their revenues and income from regulated operations from those with substantial merchant or market-related risks. I have also screened on the basis of the percent contribution of the electric segment to overall financial results in order to differentiate utilities that, like APS, derive the predominant share of their revenues and operating income from their electric segments. Further, the generation screen used to select the proxy group companies identifies utilities that, like APS, own regulated generation in rate base and bear the risk of generation ownership in their asset mix. These screens collectively reflect the risk factors that investors consider in making their investment decisions in utility companies.

## VI. DETERMINATION OF THE APPROPRIATE COST OF EQUITY

**Q. WHAT MODELS DID YOU USE IN YOUR ROE ANALYSES?**

A. I have considered the results of four ROE estimation models, including the Constant Growth DCF, CAPM, Risk Premium and Expected Earnings models. The formulas used to derive the results of each model and the assumptions underlying each approach are described below.

### A. Constant Growth DCF Model

**Q. PLEASE DESCRIBE THE DCF MODEL.**

A. The DCF approach, which is widely used in regulatory proceedings, is based on the theory that a stock's price represents the present value of all future expected cash flows. In its simplest form, the DCF model expresses the ROE as the sum of the expected dividend yield and long-term growth rate, as reflected in the following formula, where "k" equals the required return, "D" is the current dividend, "g" is the expected growth rate, and "P" is the subject company's stock price:

$$k = \frac{D(1+g)}{P} + g \quad [1]$$

Assuming a constant growth rate in dividends, the model may be rearranged to compute the ROE accordingly, as shown in the following formula:

$$r = \frac{D}{P} + \text{g} \quad [2]$$

Stated in this manner, the cost of common equity is equal to the dividend yield plus the dividend growth rate.

**Q. WHAT ARE THE ASSUMPTIONS UNDERLYING THE CONSTANT GROWTH FORM OF THE DCF MODEL?**

A. The Constant Growth DCF model is based on the following assumptions: (1) a constant average growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings multiple; and (4) a discount rate greater than the expected growth rate.

**Q. PLEASE SUMMARIZE YOUR APPLICATION OF THE CONSTANT GROWTH DCF MODEL.**

A. I calculated DCF results for each of the proxy group companies using the following inputs:

1. Average stock prices for the historical period, over 30-, 90- and 180-trading days through March 31, 2025;
2. Annualized dividends per share as of March 31, 2025; and
3. Company-specific earnings growth forecasts.

My application of the Constant Growth DCF model is provided in Attachment JMC-3DR.

**Q. WHY DID YOU USE AVERAGING PERIODS OF 30-, 90- AND 180-TRADING DAYS?**

A. It is important to use an average of recent trading days to calculate the subject company's stock price in the DCF model to ensure that the calculated ROE is not skewed by anomalous events that may affect stock prices on any given trading day. At the same time, it is important to reflect the conditions that have defined the financial

markets over the recent past. In my view, consideration of these three averaging periods reasonably balances those considerations.

**Q. DID YOU ADJUST THE DIVIDEND YIELD TO ACCOUNT FOR PERIODIC GROWTH IN DIVIDENDS?**

A. Yes. Utility companies tend to increase their quarterly dividends at different times throughout the year, so it is reasonable to assume that such increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth for the purposes of calculating this component of the DCF model. Accordingly, my DCF estimates reflect one-half of the expected growth in the dividend yield.

**Q. WHAT SOURCES OF GROWTH HAVE YOU USED IN YOUR DCF ANALYSIS?**

A. I have used the consensus analyst five-year growth estimates in earnings per share (EPS) from S&P Capital IQ Pro and Zacks, as well as EPS growth rates published by Value Line.

**Q. WHY DID YOU RELY ON EARNINGS PER SHARE GROWTH?**

A. The Constant Growth DCF model assumes that dividends grow at a single growth rate in perpetuity. Accordingly, in order to reduce the long-term growth rate to a single measure, one must assume a constant payout ratio, and that EPS, dividends per share and book value per share, will all grow at the same constant rate. It is therefore important to focus on measures of long-term earnings growth from credible sources as an appropriate measure of long-term growth in the DCF model.

**Q. ARE SOURCES OF ESTIMATED DIVIDEND GROWTH AVAILABLE TO INVESTORS?**

A. Yes, although that does not mean that investors incorporate such estimates into their investment evaluations. Academic studies suggest that investors base their investment decisions on analysts' expectations of growth in earnings.[25] In addition, the only forward-looking growth rates that are available on a consensus basis are analysts' EPS growth rates. The fact that earnings growth projections are the only widely reported estimates of growth provides further support for using earnings growth as the most meaningful measure of growth among the investment community.

**Q. HOW DID YOU CALCULATE THE MEAN HIGH, MEAN LOW, AND MEAN DCF RESULTS?**

A. I calculated the Mean High DCF result using the maximum growth rate (i.e., the maximum of the Value Line, Zacks and S&P Capital IQ EPS growth rates) in combination with the expected dividend yield for each of the proxy group companies. I used a similar approach to calculate the Mean Low DCF results, using the minimum growth rate for each company. The Mean DCF results reflect the average growth rate for each company in combination with the expected dividend yield.

---

[25] *See*, *e.g.*, Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts Growth Forecasts,* Financial Management, 21 (Summer 1992), and Vander Weide and Carleton, *Investor growth expectations: Analysts vs. history*, The Journal of Portfolio Management (Spring 1988, 14 (3)) at 81. Please note that while the original study was published in 1988, it was updated in 2004 under the direction of Dr. Vander Weide. The results of that updated study are consistent with Vander Weide and Carleton's original conclusions.

**Q. WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF ANALYSIS?**

A. The results of my Constant Growth DCF analysis are provided in Attachment JMC-3DR and summarized in Figure 6.

**Figure 6: Constant Growth DCF Results**

| | Mean Low | Mean | Mean High |
|---|---|---|---|
| 30-day average | 9.14% | 10.05% | 10.80% |
| 90-day average | 9.25% | 10.16% | 10.90% |
| 180-day average | 9.32% | 10.23% | 10.98% |

### B. CAPM Analysis

**Q. PLEASE DESCRIBE THE CAPM APPROACH.**

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).[26] As shown in the following equation, 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:

[26] Systematic risks are fundamental market risks that reflect aggregate economic measures and therefore cannot be mitigated through diversification. Unsystematic risks reflect company-specific risks that can be mitigated and ultimately eliminated through investments in a portfolio of companies and/or market sectors.

$K_e$ = the required ROE for a given security;

$r_f$ = the risk-free rate of return;

β = the Beta of an individual security; and

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

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

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

where:

$r_e$ = the rate of return for the individual security or portfolio.

The variance of the market return, noted in the above equation, is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the market reflects the extent to which the return on that security will respond to a given change in the market return. Thus, beta represents the risk of the security relative to the market.

The market risk premium can be based on either forward-looking returns for the broad market less the 30-year Treasury bond yield (i.e., the risk-free rate) or historical returns for the broad market less the income only return on government bonds.

**Q. WHAT RISK-FREE RATE DID YOU USE IN YOUR CAPM ANALYSIS?**

A. Since both the DCF and CAPM models assume long-term investment horizons, I used the Blue Chip forecast of the yield on 30-year Treasury bonds for 2026-2030 of 4.30 percent as my estimate of the risk-free rate.[27] Using the 5-year forecast of Treasury bond yields as the risk-free rate in the CAPM formula appropriately reflects the market's expectation for forward-looking interest rates. This long-term forecast is 31 basis points lower than the current 30-day average yield on 30-year Treasury bonds of 4.61 percent and is therefore conservative.

**Q. WHAT MEASURES OF BETA DID YOU USE IN YOUR CAPM ANALYSIS?**

A. I considered three measures of beta for the proxy group companies: (1) the reported beta from Value Line (which is calculated using five years of weekly return data against the NYSE Composite Index); and (2) the calculated betas from Bloomberg (using both five years and ten years of weekly return data against the S&P 500 Index). The beta coefficients in my CAPM analysis are shown in Attachment JMC-4.1DR.

**Q. WHAT MARKET RISK PREMIUM (MRP) DID YOU USE IN YOUR CAPM ANALYSIS?**

A. The CAPM is inherently a forward-looking model since it is designed to estimate investors' required equity return expectations. The MRP should, therefore, reflect investors' expected equity market returns relative to expected returns on Treasury securities. Therefore, I conducted a Constant Growth DCF analysis on all of the S&P 500 companies and calculated the expected total market return, weighted by market

[27] Blue Chip Financial Forecasts, Volume 43, Issue No. 12 (Nov. 27, 2024) at 14.

capitalization, using earnings growth rates from Value Line. This total market return is based on current dividend yields and projected earnings growth for each of these companies in the index, as shown in Attachment JMC-4.2DR. The forward-looking MRP is calculated by subtracting the risk-free rate (based on the 5-year forecast of the 30-year Treasury bond) from the total market return. This method is consistent with the approach used by FERC in developing a forward-looking MRP.[28] This analysis results in a 10.62 percent MRP, as shown in Attachment JMC-4.4DR, in the Long-Term Projected Risk-Free Rate scenarios.

**Q. DID YOU ALSO PERFORM A CAPM ANALYSIS USING A HISTORICAL MRP?**

A. Yes. Although the estimation of the cost of equity is a forward-looking analysis, I have also performed a CAPM analysis using the current historical MRP of 7.31 percent based on data published by Kroll (formerly Duff & Phelps) for the period from 1926-2024, as shown in Attachment JMC-4.3DR, and the current average 30-year Treasury bond yield of 4.61 percent.

**Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSES?**

A. The CAPM results are shown in Attachment JMC-4.4DR and Attachment JMC-4.5DR, and summarized in Figure 7.

[28] FERC Opinion No. 531(June 19, 2014) at para. 108.

**Figure 7: CAPM Results**

| | Forward MRP | Historical MRP |
|---|---|---|
| Value Line Betas | 14.31% | 11.51% |
| Bloomberg Betas – 5-year | 11.29% | 9.42% |
| Bloomberg Betas – 10-year | 12.61% | 10.33% |
| **Mean Result** | **11.58%** | |

## C. Risk Premium Analysis

**Q. PLEASE DESCRIBE THE RISK PREMIUM MODEL.**

A. In general terms, the Risk Premium approach recognizes that equity is riskier than debt because equity investors bear the residual risk associated with ownership. Equity investors, therefore, require a greater return (i.e., a premium) than a bondholder would. The Risk Premium approach estimates the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds, as reflected in the following formula, in which RP = Risk Premium (difference between allowed ROE and the respective bond yield); and Y = Applicable bond yield:

$$ROE = RP + Y \quad [5]$$

Since the equity risk premium is not directly observable, it typically is estimated using a variety of approaches, some of which incorporate ex-ante, or forward-looking estimates of the cost of equity, and others that consider historical, or ex-post, estimates. The analysis therefore relies on authorized returns from a large sample of United States integrated electric utilities.

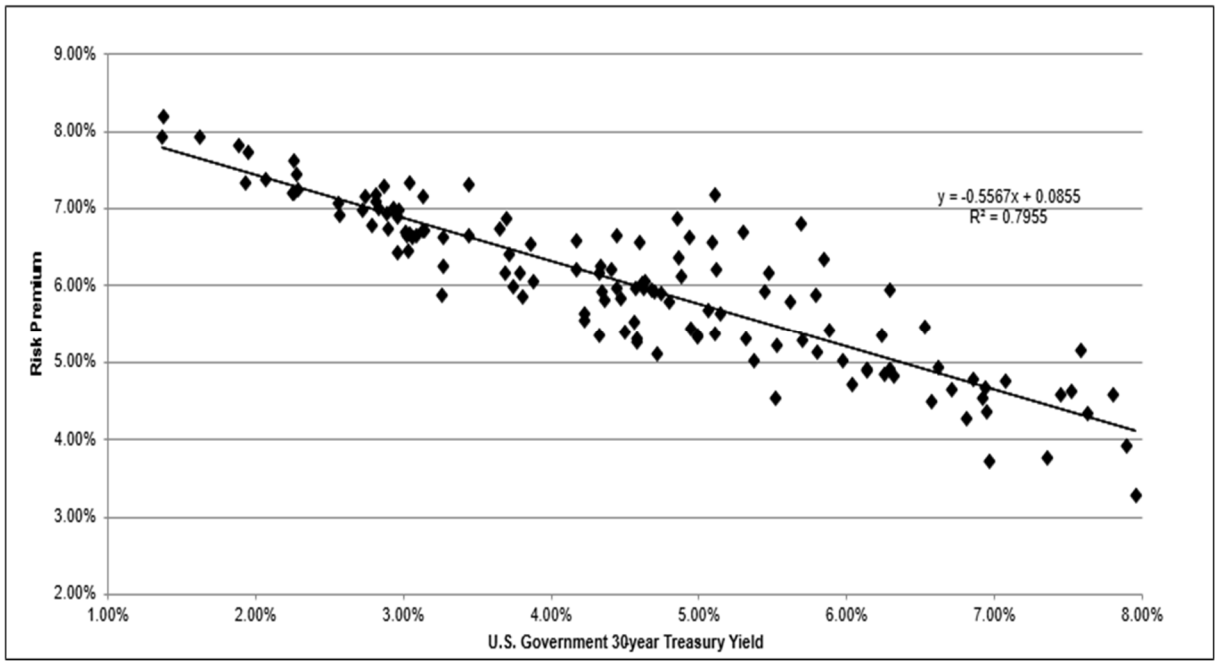
To estimate the relationship between interest rates and the cost of equity using the risk premium approach, a regression is conducted using the following equation, where a = intercept term and b = slope term:

$$RP = a + (b \times Y) \quad [6]$$

**Q. PLEASE DESCRIBE YOUR APPLICATION OF THE RISK PREMIUM ANALYSIS.**

A. My Risk Premium analysis examines the relationship between quarterly average authorized ROEs for vertically-integrated electric utilities and the respective 30-year Treasury bond yield from the relevant quarter. Data regarding allowed ROEs was provided by Regulatory Research Associates. The data includes about 780 integrated electric utility rate cases from 1992 through March 31, 2025. The results of that regression are detailed in Figure 8.

**Figure 8: Risk Premium Regression Results vs. 30-Year Treasury Yield**



As illustrated by the chart, the risk premium varies with the level of the bond yield, and generally increases as bond yields decrease, and vice versa. My analysis considers three estimates of the 30-year Treasury yield, including the current 30-day average, a "Near-Term" Blue Chip consensus forecast for Q2 2025 toQ3 2026, and a "Long-Term" Blue Chip consensus forecast for 2026 to2030. I find this "Long-Term" result to be most applicable since it is consistent with the period during which APS's rates are expected to remain in effect under the proposed Formula Rate Adjustment Mechanism (FRAM), and also because investors typically have a multi-year view of their required returns on long-lived assets. As shown in Attachment JMC-5DR, page 2, from 1992 through March 31, 2025, the average implied risk premium over these Treasury yields is 6.02 percent. Based on the regression coefficients in Attachment JMC-5DR, page 2, which allow for the estimation of the risk premium at varying bond yields, the results of my analysis are shown in Figure 9. These results range from just below to just above the historic average risk premium, mirroring three decades of regulatory decisions on the risk premium in the allowed ROE.

**Figure 9: Risk Premium Results Using 30-Year Treasury Yield**

| | Using 30-Day Average Yield on 30-Year Treasury Bond[29] | Using Near-Term Forecast for Yield on 30-Year Treasury Bond[30] | Using Long-Term Forecast for Yield on 30-Year Treasury Bond[31] |
|---|---|---|---|
| Yield | 4.61% | 4.52% | 4.30% |
| Risk Premium | 5.98% | 6.03% | 6.15% |
| Resulting ROE | 10.59% | 10.55% | 10.45% |

**Q. WHY ARE AUTHORIZED ROES IN OTHER JURISDICTIONS RELEVANT?**

A. Authorized ROEs in other jurisdictions are a significant part of the market information that investors consider when evaluating their investment alternatives. The level of authorized ROE also provides a signal to investors about the level of regulatory support that a company can expect with regard to its ability to compete for capital and to ensure its financial integrity. An improperly depressed ROE for a given period may be an impediment to the Company's ability to attract capital and invest in infrastructure necessary to provide safe, reliable service to its customers. As discussed below in Section VII.1 of my Direct Testimony, APS expects to invest approximately $7.6 billion in infrastructure in the 2025-2027 period, which, as shown in Figure 12, places the Company's ratio of capital spending to net utility plant toward the upper end of the proxy group. This underscores the importance of maintaining access to capital markets on favorable terms for the benefit of both the Company and its customers, especially during periods of significant capital investment.

[29] Bloomberg Professional, as of March 31, 2025.
[30] Blue Chip consensus forecast for 3Q 2025 – 3Q 2026, as of March 31, 2025.
[31] Blue Chip consensus forecast for 2026 – 2030, as of November 27, 2024.

**D. Expected Earnings Analysis**

**Q. HAVE YOU CONDUCTED ANY OTHER ANALYSIS TO ESTIMATE THE COST OF EQUITY FOR APS?**

A. Yes. I have also conducted an Expected Earnings analysis to estimate the cost of equity for APS based on the projected ROEs for the proxy group companies.

**Q. WHAT IS AN EXPECTED EARNINGS ANALYSIS?**

A. The Expected Earnings methodology is a comparable earnings analysis that calculates the earnings that an investor expects to receive on the book value of a stock. The Expected Earnings analysis is a forward-looking estimate of investors' expected returns. The use of an Expected Earnings approach based on the proxy companies provides a range of the expected returns on a group of risk-comparable companies to the subject company. This range is useful in determining the opportunity cost of investing in the subject company, which is relevant in determining a company's ROE.

**Q. HOW DID YOU DEVELOP THE EXPECTED EARNINGS APPROACH?**

A. I relied on the projected ROE for the proxy companies as reported by Value Line for the period from 2028 to2030. I then adjusted those projected ROEs to account for the fact that the ROEs reported by Value Line are calculated on the basis of common shares outstanding at the end of the period, as opposed to average shares outstanding over the entire period. As shown in Attachment JMC-6DR (and summarized in Figure 10), the Expected Earnings analysis produces return estimates of 11.47 percent (mean) and 10.71 percent (median). I relied on the median result of this analysis in developing my ROE estimate for APS.

**Figure 10: Expected Earnings Results**

| | |
|---|---|
| Mean | 11.47% |
| Median | 10.71% |

## VII. BUSINESS RISKS

**Q. ARE THERE FACTORS SPECIFIC TO APS'S OPERATING ENVIRONMENT THAT YOU CONSIDERED IN YOUR ROE RECOMMENDATION?**

A. Yes, there are several additional factors that have a direct bearing on APS's ability to earn a fair return and on the Company's riskiness relative to the proxy group, including APS's relatively high level of capital expenditures, the regulatory environment in which the Company operates, generation risk, and wildfire risk. On balance, these factors serve to increase APS's risk profile relative to the proxy group.

**Q. HAVE ANY OF THE CREDIT RATING AGENCIES COMMENTED ON THE BUSINESS AND REGULATORY RISK OF APS?**

A. Yes. While acknowledging the recent improvement in the regulatory environment in Arizona, S&P Global states that "Arizona has historically been a challenging regulatory jurisdiction, and we will continue to monitor APS's ability to effectively manage its regulatory risk."[32] With regard to the Company's business risk profile, S&P Global observes that:

> Pressuring our assessment of APS' business risk profile is its limited regulatory diversity, Arizona's historically challenging regulatory construct, exposure to wildfire risk, environmental risks associated with the company's coal-fired generation, and operating risks associated with

[32] S&P Global Ratings, Arizona Public Service Co., (April 1, 2025) at 3.

> nuclear generation. As of Dec. 31, 2024, APS owns or leases 6,540 megawatts of generating capacity, about 38.2% of which is from nuclear and coal-fired fuel sources. **We therefore assess APS' business risk profile at the very low end of its category relative to peers. We assess a negative comparable rating analysis modifier that we incorporate in this assessment.**[33]

**A. Capital Expenditure Program**

**Q. PLEASE SUMMARIZE THE COMPANY'S CAPITAL EXPENDITURE PLAN.**

A. The Company estimates that from 2025-2027 it will invest approximately $7.6 billion in capital, or about $2.53 billion per year.[34] These investments are primarily related to electric generation, upgrades and improvements to the electric transmission system to move generation resources to load centers, and upgrades to the electric distribution system to accommodate continued customer growth. In total, these capital expenditures are equal to approximately 48.1 percent of the Company's total net utility plant in service as of December 31, 2023, of $15.8 billion.[35]

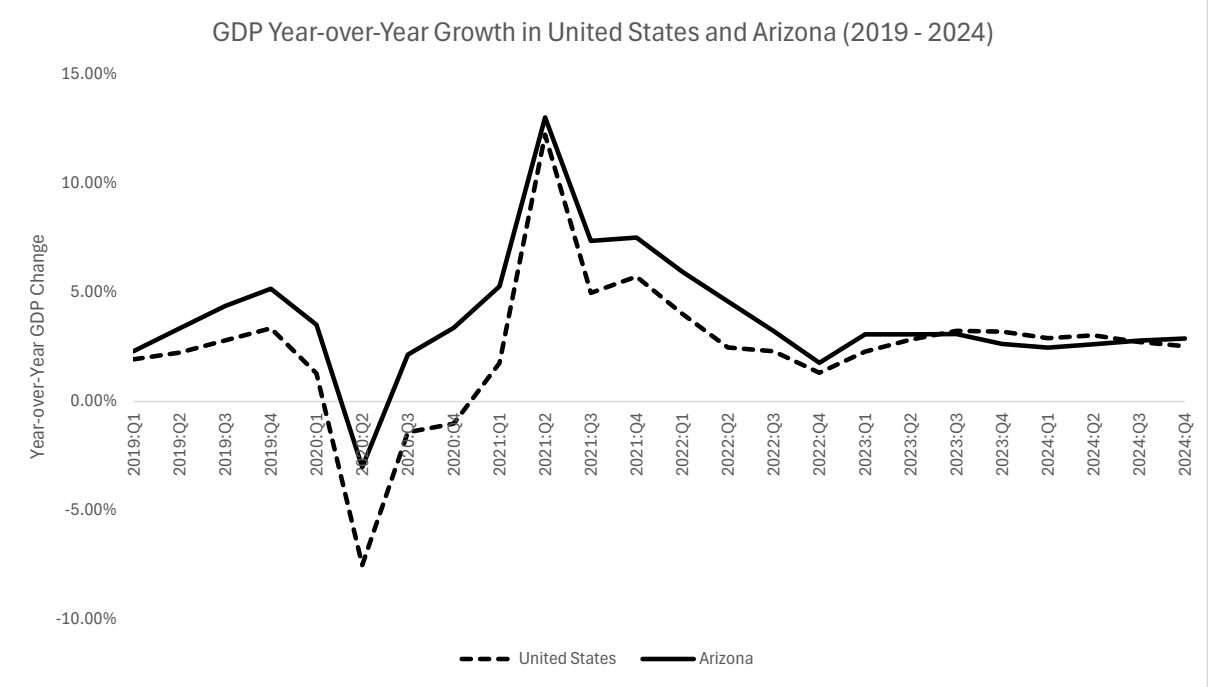
**Q. WHAT FACTORS ARE DRIVING THE NEED FOR APS TO MAKE SUCH SIGNIFICANT CAPITAL INVESTMENTS?**

A, APS's capital spending plan is impacted by population growth and economic growth in Arizona, both of which have generally trended above the nationwide average, which leads to increased demand for electricity. As shown in Figure 11 below, Arizona's growth in state domestic product has exceeded real GDP growth in the U.S. in most quarters since before the COVID-19 pandemic.

---

[33] S&P Global Ratings, Arizona Public Service Co., (Apr. 1, 2025) at 3. [Emphasis added.]
[34] Source: Pinnacle Investor Presentation, *Renewed, Reliable and Resilient* (March 2025) at 21.
[35] 2024 SEC Form 10-K, Pinnacle West at 108.

**Figure 11: GDP Growth – Arizona vs. U.S.[36]**




**Q. DOES THE INVESTMENT COMMUNITY 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. S&P Global has noted:

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

[36] Source: U.S. Department of Commerce, Bureau of Economic Analysis, *State quarterly GDP summary*.

> 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.[37]

**Q. HAVE ANY CREDIT RATING AGENCIES COMMENTED ON THE ELEVATED NATURE OF APS'S CAPITAL SPENDING PROGRAM?**

A. Yes. S&P Global has identified APS's capital spending program among the key risks for the Company, stating that the "elevated capital spending program requires ongoing funding and timely cost recovery to support its credit profile."[38] The rating agency goes on to explain that:

> S&P Global Ratings expects capital spending will remain robust, requiring the company to manage these expenditures in a balanced manner to support credit quality. APS' capital plan averages roughly $2.5 billion annually from 2025 to 2027. In 2025, the company expects its capital expenditure (capex) will be about $2.4 billion, of which about 37.7% will be allocated for generation capex, about 27.7% for distribution, about 18.8% for transmission, and the remainder for other projects and company needs. APS is investing in projects to harden its system; enhance safety and reliability; and meet the future expected electricity demands of new and existing customers, particularly from residential and commercial customers.[39]

**Q. HOW DO THE COMPANY'S EXPECTED CAPITAL EXPENDITURES COMPARE TO THE PROXY GROUP?**

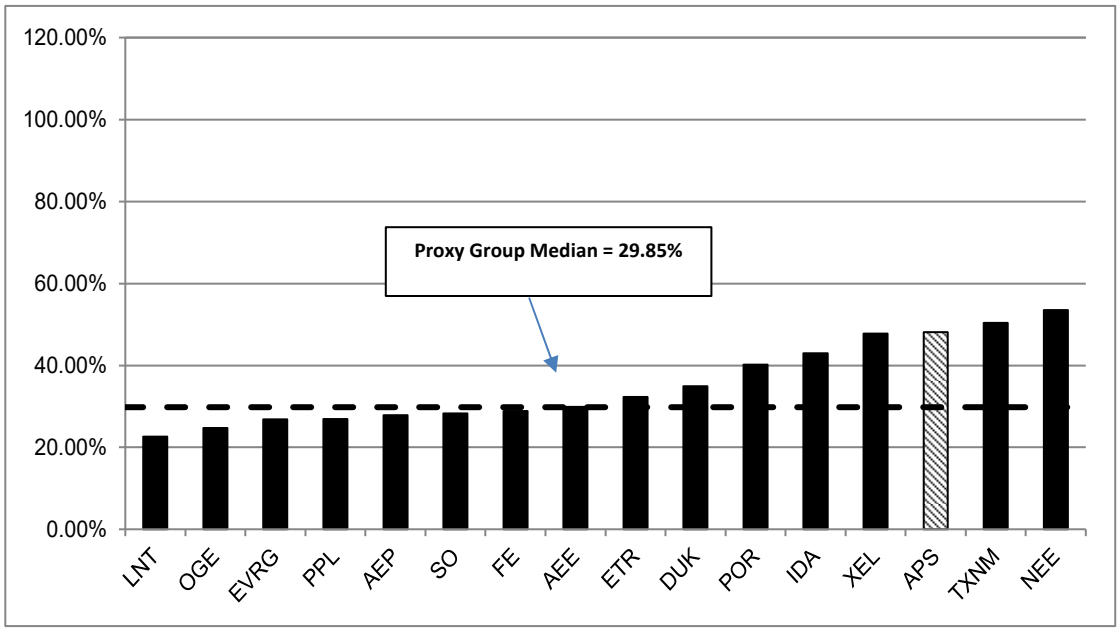
A. As shown in Attachment JMC-7.1DR, I calculated the ratio of expected capital expenditures to net utility plant for APS and each of the companies in the proxy group

---

[37] S&P Global Ratings, Ratings Direct, "Assessing U.S. Investor-Owned Utility Regulatory Environments," (Aug. 10, 2016) at 7.
[38] S&P Global Ratings, Arizona Public Service Co., (Apr. 1, 2025) at 1.
[39] S&P Global Ratings, Arizona Public Service Co., (Apr. 1, 2025) at 2.

by dividing each company's projected capital expenditures for the period from 2025 to2027 by its total net utility plant as of December 31, 2023.[40] As shown in Attachment JMC-7.2DR (see also Figure 12), APS's ratio of capital expenditures as a percentage of net utility plant is higher than all but two of the proxy group companies. Further, APS's ratio of 48.1 percent is approximately 1.61 times the proxy group median of 29.85 percent.

**Figure 12: Comparison of Capital Expenditures – Proxy Group Companies**




**Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECT OF APS'S CAPITAL INVESTMENT PLAN ON ITS COST OF EQUITY?**

A. Because APS is projecting a substantial capital expenditure program over the next three years, I conclude that it is reasonable to expect that the Company will require continued

[40] I have used net utility plant in service at year end 2023 in this calculation because year end 2024 data was not available for all proxy group companies.

access to capital markets to finance these investments. The investment community recognizes the additional risks associated with substantial capital expenditures. Capital spending is projected at record levels for the utility industry over the next several years according to Regulatory Research Associates,[41] which means that APS will be competing with other companies to obtain debt and equity financing. The relative magnitude of the Company's capital expenditure plan suggests that APS has an above average risk profile as compared to the proxy group, recognizing that a portion of that risk is offset by the approval of the SRB. In summary, APS's capital investment program emphasizes the importance of an authorized return sufficient to attract the necessary debt and equity capital to meet its service obligations.

**B. Regulatory Environment**

**Q. HAVE YOU EVALUATED THE REGULATORY ENVIRONMENT FOR APS COMPARED TO THE PROXY GROUP COMPANIES?**

A. Yes. I have conducted an analysis of the regulatory mechanisms that are in place for APS compared with those for the operating utility companies held by the proxy group. Specifically, I examined the following factors that affect the regulatory risk of APS and the proxy group companies: (1) test year convention; (2) rate base convention; (3) fuel and purchased power cost recovery; (4) revenue decoupling; (5) capital cost recovery; and (6) construction work in progress (CWIP) in rate base. The results of my analysis are presented in Attachment-JMC-8DR.

[41] Source: RRA Financial Focus, *Energy utility capex predicted to top $1 trillion from 2025-2029* (Mar. 26, 2025).

As shown in that Attachment, 45 percent of the operating companies in the proxy group provide service in jurisdictions that allow the use of a fully or partially forecasted test year, while APS is required to base its rates on a historical test year adjusted for known and measurable changes. Fifty-eight percent of the operating companies in the proxy group use year-end rate base like APS, while 42 percent are required to use average rate base, which results in less timely recovery of capital expenditures that are placed in service during the second half of the test year. Like APS, all of the operating companies with the distribution and procurement function have fuel and purchased power adjustment clauses that allow them to recover variations between actual and forecast fuel costs. APS has a Lost Fixed Cost Recovery (LFCR) mechanism that allows the Company to recover revenue that is lost due to energy efficiency and conservation programs. While the LFCR reduces APS's volumetric risk to some degree, it is important to consider that approximately 47 percent of the operating companies held by the proxy group have either full or partial revenue decoupling mechanisms that protect against volumetric risk. On a relative basis, APS has less protection against volumetric risk than approximately half of the operating utilities held by the proxy group companies. In addition, approximately 48 percent of the operating companies in the proxy group have a cost recovery mechanism for generation capacity and about 42 percent have cost recovery for generic infrastructure replacement. APS has the ability to recover transmission capital investment between rate cases and for some of its generation with the System Reliability Benefit Surcharge, approved in 2024. Together these account for approximately 40 percent of the Company's capital investment.

Finally, approximately 65 percent of the operating companies held by the proxy group are allowed to include CWIP in rate base, while APS is not.

**Q. BASED ON THIS RISK ASSESSMENT, WHAT IS YOUR CONCLUSION REGARDING THE LEVEL OF REGULATORY RISK FOR APS RELATIVE TO THAT OF THE PROXY GROUP COMPANIES?**

A. As discussed above and as shown in Attachment JMC-8DR, APS has greater regulatory risk than the proxy group companies in terms of test year convention and volumetric risk, and slightly more risk in terms of capital cost recovery. My conclusion is that APS currently has somewhat greater regulatory risk than the proxy group companies. The use of a historical test year increases regulatory lag and inhibits APS's ability to earn its authorized ROE, and the absence of a revenue decoupling mechanism exposes the Company to greater risk due to fluctuations in sales. I have not, however, made any adjustments to the recommended ROE to account for these risks. Rather, these risks demonstrate that my recommended ROE may be conservative.

**C. Generation Risk**

**Q. PLEASE PROVIDE AN OVERVIEW OF THE COMPANY'S GENERATION PORTFOLIO.**

A. APS's current energy fuel mix includes nuclear (24.5%), gas and oil (22.8%, principally gas), coal (18.2%), renewables (2.9%) and purchased power (31.6%).[42] While APS is planning to shift its generation portfolio over the next several years, including the incorporation of larger amounts of new renewable, energy storage, and natural gas-

[42] Source: Pinnacle West, 2024 Statistical Report, Arizona Public Service Company, at p. 8.

powered resources,[43] over the long-term the APS generation portfolio remains dependent on nuclear generation, including the second-largest nuclear generating facility in the country — Palo Verde Generating Station.

**Q. PLEASE DESCRIBE THE RISKS ASSOCIATED WITH APS'S GENERATION PORTFOLIO.**

A. In general, nuclear generation assets are subject to heightened risks including the recovery of investors' capital in the event of a change in market structure or a plant failure, and recovery of replacement power and repair costs in the event of an extended or unplanned outage, given their scale. In addition, federal safety regulations present a substantial risk of requiring investors to commit new capital to comply with new regulations or operational restrictions or possibly closure. APS and its investors are faced with the risk that new federal regulations will require it to expend additional capital or face closure, and investors consider these risks in establishing their return requirements. As shown in Attachment JMC-9DR, the Company's exposure to the risks associated with nuclear generation is above the proxy group average. Measured on a net generation basis approximately 36.2 percent of APS's net generation (on a MWh basis) was derived from nuclear generation assets, compared to the proxy group average of approximately 15.9 percent. This demonstrates that APS has greater than average risk from nuclear generation relative to the proxy group companies, and therefore greater generation risk. APS's nuclear risk is extenuated by the fact that, while it only owns 29

[43] Source: Arizona Public Service website, https://www.aps.com/en/About/Our-Company/Clean-Energy, accessed (Mar. 24, 2025).

percent% of the Palo Verde Generating Station, as the plant operator the Company faces the added risks associated with direct accountability for operations of the entire plant.

### D. Wildfire Risk

**Q. DOES APS HAVE ANY ADDITIONAL BUSINESS RISKS?**

A. Yes, in addition to the risks discussed above, APS also has potential exposure to wildfire risk in its service territory. Although APS has taken important steps to mitigate this risk, such as system hardening and vegetation management, the Company provides service in an area that faces potential wildfire risk.

**Q. HAVE CREDIT RATING AGENCIES AND INVESTORS IDENTIFIED WILDFIRE RISK AS ONE OF THE KEY RISKS FOR UTILITIES SUCH AS APS?**

A. Yes, they have. For example, S&P Global has indicated that all electric utilities in the Western United States have risk associated with wildfires. S&P Global commented on the Company's wildfire risk as follows:

> APS' service territory is exposed to wildfire risk. The company continues to invest in wildfire mitigation activities including vegetation management; system hardening; technology, such as drones for asset inspection; weather station installation; and stakeholder engagement. In addition, APS implemented advanced fire modeling software and has established a fire mitigation department. Furthermore, APS has a public safety power shutoff program. To date, the company has not experienced any significant liability due to wildfires in its operating jurisdictions; however, we believe there is elevated exposure to wildfires in some parts of its service territory.[44]

[44] S&P Global Ratings, Arizona Public Service Company (Apr. 1, 2025), at 2.

Similarly, Moody's has also commented on wildfire risk for utilities in western states, while tempering its view of wildfire risk for APS to some degree:

> The credit profile of APS incorporates its exposure to wildfires within its service territory, a risk that we view as moderate due primarily to the company's robust mitigation strategies. Arizona is one of several states that experiences well over 1,000 wildfires annually — ranging from minor to severe — because of its unique topography and arid climate conditions. APS has an established history of managing wildfire events in its service territory, and has invested in system improvements over time to lower the potential for devastating wildfires. The utility's comprehensive wildfire mitigation plan outlines measures for grid hardening, enhanced vegetation management, situational awareness and emergency response and operation. The escalating risk exposure and shifting weather patterns are shaping the company's mitigation strategy, which undergoes regular updates based on data analysis and seasonal observations.[45]

Warren Buffett, the long-time head of Berkshire Hathaway Inc., commented on wildfire risk for electric utilities from an equity investor's perspective at his recent annual shareholders' meeting in May 2025, as follows: "The public utility business is not as good a business as it was a couple of years ago," Buffett said. "If anybody doesn't believe that, they can look at Hawaiian Electric and look at Edison in the current wildfires situation in California."[46]

While APS has minimal history of wildfires to date, major credit rating agencies identify it as a key risk, and the Company has experienced a substantial increase in the cost of liability insurance in recent years. APS is requesting to recover its incurred wildfire

---

[45] Moody's Ratings, Credit Opinion, Arizona Public Service Company (March 25, 2025), at 5.

[46] Yahoo Finance Business Insider, *Warren Buffett is warning investors against piling into a traditionally safe area of the stock market* (May 5, 2025).

mitigation costs, which include higher insurance costs, and costs for system hardening and vegetation management. In addition, approved legislation defines the liability for wildfires in Arizona and establishes prudence standards with regard to how utilities manage this risk. APS is required to file a wildfire mitigation plan every even numbered year with the State Forester. If the Company's plan is approved, its liability for negligence claims would be based upon compliance with that plan, which will still require the adjudication of wildfire-related claims.[47]

**Q. WHAT IS YOUR CONCLUSION WITH RESPECT TO WILDFIRE RISK FOR APS?**

A. My conclusion is that investors perceive wildfire risk as a key consideration for APS, even though there is minimal history of wildfires in the Company's service territory. APS has taken important steps to manage and mitigate this risk, but in my view, it is not possible to entirely eliminate wildfire risk. Passage of legislation in Arizona is positive from an investor perspective, because it defines the standard of care for utilities in relation to wildfire planning. Notwithstanding the provisions of HB 2201, the costs and potential liabilities around wildfires are significant and exposure to this risk is escalating. From the perspective of financial risk, until liability for a fire is adjudicated and the protections under the law can be validated through the legal process, which can be a number of years, a Company can suffer significant operational and financial impacts until resolved.

[47] https://www.azleg.gov/legtext/57leg/1R/bills/HB2201S.pdf

**E. Formula Rate Adjustment Mechanism**

**Q. PLEASE DESCRIBE THE FORMULA RATE ADJUSTMENT MECHANISM APS IS PROPOSING IN THIS RATE CASE.**

A. As discussed in the Direct Testimony of APS witness Jessica E. Hobbick, APS is proposing to implement a FRAM that will cover a five year period. Key elements of the proposed FRAM include:

1) APS may file five Annual Updates to adjust rates to ensure that the Company does not earn more or less than its authorized return;
2) After the fifth update, APS must file a full rate case;
3) APS may request 12 months of projected plant in the Annual Updates; and
4) The FRAM would include an ROE deadband of +/- 20 basis points around the authorized ROE. If the ROE falls within the deadband, there will be no change to the FRAM. If the ROE is outside the deadband, then the revenue requirement will change as needed to meet the authorized ROE.

**Q. PLEASE DISCUSS HOW THE PROPOSED FRAM AFFECTS THE RISK PROFILE OF APS.**

A. The proposed FRAM, if approved by the Commission, would provide the Company with greater ability to match its expenses with revenue recovery and reduce the Company's regulatory lag. The proposed FRAM would therefore improve APS's ability to earn its authorized ROE. As shown in Attachment JMC-10DR, many of the operating companies held by the proxy group have implemented either a formula rate plan or a multi-year rate plan. In Concentric's experience, this trend is likely to continue as both

regulators and stakeholders see benefits from stayout periods with appropriate guardrails (e.g., earnings sharing bands and financial monitoring). Approval of the proposed FRAM for APS would align the Company with this trend and the proxy group companies which have implemented similar rate plans.

**Q. WHAT IS YOUR CONCLUSION REGARDING HOW THE PROPOSED FRAM AFFECTS APS'S RISK PROFILE?**

A. My conclusion is that the proposed FRAM has the potential to be a constructive regulatory mechanism that balances the interests of the Company and customers. More timely recognition of costs in rates sends customers valuable information regarding their energy costs and allows the Company to better align its cash flow with expenditures. As the program is new and its approval and implementation have yet to unfold, my preliminary view is that the FRAM is credit positive from an investor's standpoint and would bring APS's risk profile in closer alignment with the peer group companies that have a variety of rate mechanisms to address regulatory lag. Approval of the FRAM would not cause equity investors to reduce their return requirements for APS because the regulatory compact is intended to give utilities a reasonable opportunity to earn the authorized ROE, whether under formula rates or traditional base rate cases.

**Q. WHAT IS YOUR OVERALL CONCLUSION REGARDING APS'S BUSINESS RISK RELATIVE TO THE PROXY GROUP?**

A. My conclusion is that APS has greater business risk than the proxy group due to its elevated capital spending program, the requirement to use a historical test year in Arizona, its higher reliance on nuclear generation assets, and its exposure to wildfire related risk. Like the proxy group companies, APS has regulatory mechanisms that

mitigate certain business risks. On balance, my risk analysis indicates that APS's business risk is currently somewhat greater than the proxy group, although the FRAM has the potential to mitigate some of this risk differential by reducing the Company's regulatory lag and enhancing its ability to earn its authorized ROE.

## VIII. CAPITAL STRUCTURE

**Q. WHAT COMMON EQUITY RATIO IS THE COMPANY PROPOSING?**

A. APS is proposing a capital structure that includes a 52.35 percent common equity ratio on a regulatory (rate-making) basis, which is based on the Company's actual capital structure at the end of its Test Year (12-month period ending December 31, 2024). The proposed equity ratio will enable APS to maintain its financial strength and credit rating during this period of elevated capital spending, when the Company will require ongoing access to debt and equity markets to finance its capital program. Mr. Bauer discusses the requested capital structure in more detail in his Direct Testimony.

**Q. PLEASE EXPLAIN HOW YOU EVALUATED THE REASONABLENESS OF APS'S PROPOSED CAPITAL STRUCTURE RELATIVE TO THE PROXY GROUP COMPANIES.**

A. The proxy group has been selected to reflect companies that are comparable to APS in terms of business and financial risks. Therefore, it is appropriate to compare the capital structures of the proxy group companies to that proposed by APS in order to assess whether the Company's capital structure is reasonable and consistent with industry standards for companies with commensurate risk. I calculated the weighted average capital structures for each of the proxy group operating companies on a quarterly basis

for the four quarters through Q4 2024. As shown in Attachment JMC-11DR, APS's proposed capital structure is consistent with the actual financial/accounting capital structures of the operating utilities held by the proxy group companies, which have mean and median common equity ratios of 53.13 percent and 53.33 percent, respectively, within a range from 44.56 percent to 60.31 percent.

**Q. PLEASE EXPLAIN WHY YOU PERFORMED YOUR CAPITAL STRUCTURE COMPARISON AT THE OPERATING COMPANY LEVEL.**

A. Because the authorized equity ratio should reflect the business and operating risks of the utility for which the authorized return is being set, it is appropriate to perform this comparison at the operating utility company level.

**Q. WHAT IS YOUR CONCLUSION CONCERNING THE APPROPRIATE CAPITAL STRUCTURE FOR APS?**

A. My conclusion is that APS's proposed capital structure, which includes a common equity ratio of 52.35 percent, is slightly lower than the mean and median equity ratios of the operating utilities held by the proxy group companies and is therefore reasonable. It is important for APS to continue to have access to capital on reasonable terms and conditions for the benefit of both customers and the utility. As discussed in Mr. Bauer's Direct Testimony, the Company will have external financing requirements to fund its capital expenditure program, and maintaining APS's financial strength is important so that the Company is able to access capital on reasonable terms under a variety of economic and capital market conditions.

## IX. FAIR VALUE RATE OF RETURN

**Q. WHAT IS THE FAIR VALUE STANDARD IN ARIZONA?**

A. As the Commission noted in its decision regarding Chaparral City Water Company,[48] the Arizona Constitution requires the use of a fair value rate base in establishing rates. Article XV, Section 14 of the Arizona Constitution states:

> The corporation commission shall, to aid it in the proper discharge of its duties, ascertain the fair value of the property within the state of every public service corporation doing business therein; and every public service corporation doing business within the state shall furnish to the commission all evidence in its possession, and all assistance in its power, requested by the commission in aid of the determination of the value of the property within the state of such public service corporation.[49]

As interpreted by the Arizona Court of Appeals, this paragraph requires the Commission to find the fair value of a public service corporation's property and to use that value to set just and reasonable rates.[50]

**Q. DOES THE FAIR VALUE STANDARD REQUIRE CONSIDERATION OF THE FAIR RETURN ON THE FAIR VALUE OF THE COMPANY'S ASSETS?**

A. Yes. As noted above, the Arizona Constitution requires that the Commission establish just and reasonable rates using the fair value of the Company's property. In establishing

---

[48] *In re App. of Chaparral City Water Co. for a Determination of the Current Fair Value of Its Utility Plant and Property, et al.*, Docket No. W-02113A-04-0616, Decision No. 70441 (Jul. 28, 2008) (Decision No. 70441) at 20-21.

[49] Ariz. Const. art. XV, § 14.

[50] *In re App. of UNS Electric, Inc. for the Establishment of Just and Reasonable Rates and Charges, et al.*, Docket No. E-04204A-15-0142, Decision No. 75697 (Aug. 18, 2016) (Decision No. 75697); *In re App. of UNS Electric, Inc. for Approval of a Rate Increase,* Docket No. E-04204A-09-0206, Decision No. 71914 (Sep. 30, 2010) at 48-49. *See also* Decision No. 70441 at 20-21.

the revenue requirement, the Commission would also need to establish the appropriate ROE to apply to the equity component of the FVRB.

**Q. HOW HAS THE COMMISSION ESTIMATED THE FVROR ON THE FVRB?**

A. In several recent cases, the Commission has determined the FVROR by applying the market ROE and the cost of debt to the Company's Original Cost Rate Base (OCRB) based on the percent of equity and debt in the Company's proposed capital structure. The Commission then applies a different rate, traditionally one half of the risk-free rate, to what has been commonly referred to as the "fair value increment."[51] The FVRB Increment is the difference between the OCRB and the Company's proposed FVRB. The FVROR is then the sum of the returns on each of the three components: (1) equity capital; (2) debt capital; and (3) the fair value increment, weighted by the percentage of each in the FVRB.

**Q. WHAT DOES THE FVRB REPRESENT?**

A. As described in Decision No. 75697, the fair value increment represents the appreciation in the value of the assets to their current value due to inflation. The sum of the OCRB and the fair value increment is the total fair value of the utility's property.[52]

---

[51] *In re App. of Southwest Gas Corp. for Approval of a Rate App., et al.,* Docket No. G-01551A-07-0504, Decision No. 70665 (Dec. 24, 2008) at 32 and Decision No. 75697 at 14.

[52] *Decision No. 70665 (Dec. 24, 2008) at 32 and Decision No. 75697 at 14.*

**Q. WHAT RATE OF RETURN SHOULD BE APPLIED TO THE FVRB INCREMENT?**

A. Based on the risk differential between equity and debt investments, equity holders will require a greater return than the risk-free rate. As such, the range of returns on the FVRB Increment should be between the risk-free rate and the cost of equity established by the results of the proxy group analysis.

**Q. PLEASE COMMENT ON THE METHODOLOGY TRADITIONALLY USED BY THE COMMISSION, I.E., HALF THE RISK-FREE INTEREST RATE.**

A. I have concerns with the use of one-half of the risk-free rate as the FVRB Increment. Since equity investors are the residual claimants after bondholders and preferred stockholders, I cannot reconcile why an investor would accept a rate of return that is less than the cost of debt for an equity position in any investment. At the very least, the market expectation is that investments that are not risk-free should earn a rate of return that exceeds the risk-free rate. Furthermore, the application of 50 percent of the risk-free rate as a measure of the cost of equity on the FVRB Increment is subjective and has no evident basis in financial theory. The risk-free rate sets the low-end of the range of returns that I believe would be appropriate to apply to the FVRB Increment.

**Q. HOW HAVE YOU ESTIMATED THE RETURN ON THE FVRB INCREMENT IN THIS CASE?**

A. I have estimated the return on the FVRB Increment using three approaches, all based generally on the methodology that has been relied on by the Commission in prior cases.

**Q. PLEASE EXPLAIN THE METHODOLOGIES YOU USED TO ESTIMATE THE RISK-FREE RATE OF RETURN.**

A. As shown in Attachment JMC-12DR, in all three cases, the risk-free rate is estimated based on a projection of the nominal risk-free rate and an interest rate assumption to establish the real risk-free rate. In the first two scenarios, I relied on a projected nominal risk-free rate of return as the average of the 2026 to2030 projected yield on 30-year U.S. Treasury bonds of 4.30 percent and the 2031 to2035 projected yield on 30-year U.S. Treasury bonds of 4.20 percent as reported in the Blue Chip Financial Forecasts.[53] I then adjusted the average nominal risk-free rate of 4.25 percent by a measure of inflation.

In scenario 1, the nominal risk-free rate was adjusted based on a projected estimate of inflation that was based on the growth in the CPI and the GDP Chain-type Price Index over the period from 2026 to2035 (see Attachment JMC-12DR). The rate of inflation of 2.21 percent is based on three measures: (1) the average 2026 to2030 and 2031 to2035 projected growth rate in the CPI of 2.20 percent, as reported by Blue Chip Financial Forecasts;[54] (2) the compound annual growth rate of the CPI for all urban consumers for 2026-2035 of 2.17 percent as projected by the Energy Information Administration (EIA) in the Annual Energy Outlook 2023; and (3) the compound annual growth rate of the GDP Chain-Type Price Index for 2026 to2035 of 2.27 percent, also reported by the EIA in the Annual Energy Outlook 2023.[55] Using these indexes, the estimate of inflation

---

[53] Blue Chip Financial Forecasts, Vol. 43, No. 12, (Nov. 27, 2024) at 14.

[54] *Ibid.*

[55] U.S. Energy Information Administration, *Annual Energy Outlook 2023*, *Table 20 Macroeconomic Indicators* (Note: There was no 2024 publication of the Annual Energy Outlook.)

was 2.21 percent. Removing inflation from the nominal risk-free rate resulted in a real risk-free rate of 1.99 percent.

In scenario 2, the estimate of inflation was based on the 2025 average yield on the 30-year U.S. Treasury Inflation Protected Security (TIPS), updated through March 31, 2025. This resulted in an estimate of inflation of 2.31 percent, which is similar to the estimate that has been relied on in recent cases before the Commission.[56] The resulting real risk-free rate after adjusting for inflation is 1.94 percent.

**Q. DID YOU CONSIDER OTHER ESTIMATES OF THE RISK-FREE RATE?**

A. Yes, in scenario 3, I have relied on a normalized risk-free rate, as recommended by Kroll in its March 2025 update. Kroll recommends "a U.S. normalized risk-free rate of 3.5% or the spot 20-year U.S. Treasury yield prevailing as of the valuation date."[57] Through March 31, 2025, the 20-year Treasury yield has exceeded 3.50 percent, and has been an average of 4.76 percent. This normalized interest rate of 4.76 percent is then converted to a real rate using the yield on the TIPS of 2.31 percent. The resulting real risk-free rate is 2.45 percent.

**Q. WHAT IS YOUR CONCLUSION ON THE APPROPRIATE REAL RISK-FREE RATE IN THIS CASE?**

A. The range established by the three methodologies that I developed is from 1.94 percent to 2.45 percent and the average is 2.13 percent. As described at the outset, the market

---

[56] *In re App. of EPCOR Water Ariz. Inc. for a Determination of the Current Fair Value of Its Utility Plant and Property,* Docket No. WS-01303A-17-0257, Joint Notice of Filing Issues Matrix (Jul. 13, 2018), p. at 1.

[57] Kroll, *Kroll Cost of Capital Recommendations and Potential Upcoming Changes – March 2025 Update* (Mar. 19, 2025) at 2.

expectation is that investments that are not risk-free should earn a rate of return that exceeds the risk-free rate. Nonetheless, recognizing Commission practice to apply one-half of the real risk-free rate as the return on the fair value increment, I have estimated the real risk-free rate to be 2.13 percent. One-half of that estimate is 1.06 percent.

## X. SUMMARY AND CONCLUSIONS

**Q. WHAT IS THE RANGE OF RESULTS PRODUCED BY THE VARIOUS COST OF EQUITY ANALYSES?**

A. Figure 13 summarizes the results of my DCF, CAPM, Risk Premium and Expected Earnings analyses.

**Figure 13: Summary of ROE Model Results**

| **DCF – 90-day Average** | **Results** |
|---|---|
| Constant Growth – Mean | 10.16% |
| **CAPM – Forward MRP, Forecast Bond Yield** | |
| Value Line Beta | 14.31% |
| Bloomberg Beta – 5-year | 11.29% |
| Bloomberg Beta – 10-year | 12.61% |
| **CAPM – Historical MRP, Current Bond Yield** | |
| Value Line Beta | 11.51% |
| Bloomberg Beta – 5-year | 9.42% |
| Bloomberg Beta – 10-year | 10.33% |
| **CAPM Average** | 11.58% |
| **Risk Premium – 30 Yr. U.S. Treasury** | |
| 30-Yr. U.S. Treasury – LT Forecast | 10.45% |
| **Expected Earnings - Median** | 10.71% |
| **Mean of All Methods** | **10.73%** |

**Q. PLEASE SUMMARIZE YOUR ROE RECOMMENDATIONS BASED ON THIS RANGE OF RESULTS.**

A. The ROE analyses presented in my Direct Testimony indicate a range of results from 10.20 percent to 11.60 percent from a combination of models and alternative input assumptions. Based on the results of all four methods (i.e., DCF, CAPM, Risk Premium and Expected Earnings), and in light of the business risks of APS relative to the proxy group, combined with my observations pertaining to capital market conditions, my analyses support an authorized ROE of 10.70 percent for APS, just below the mean of all methods. On balance, I believe that an authorized ROE of 10.70 percent and a ratemaking capital structure that includes a common equity ratio of 52.35 percent represents a reasonable estimate of the fair rate of return for APS. My analysis also indicates that a rate of return on the FVRB Increment of 1.00 percent is reasonable, if not conservative, for APS. This results in a FVROR of 4.84 percent.

**Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

A. Yes, it does.

CONCENTRIC ENERGY ADVISORS

**JAMES M. COYNE**
SENIOR VICE PRESIDENT

Mr. Coyne provides financial, regulatory, strategic, and litigation support services to clients in the natural gas, power, and utilities industries. Drawing upon his industry and regulatory expertise, he regularly advises utilities, public agencies and investors on business strategies, investment evaluations, and matters pertaining to rate and regulatory policy. Prior to Concentric, Mr. Coyne worked in senior consulting positions focused on North American utilities industries, in corporate planning for an integrated energy company, and in regulatory and policy positions in Maine and Massachusetts. He has authored numerous articles on the energy industry and provided testimony and expert reports before federal, state and provincial jurisdictions in the U.S. and Canada. Mr. Coyne holds a B.S. in Business from Georgetown University and an M.S. in Resource Economics from the University of New Hampshire.

## AREAS OF EXPERTISE

### Energy Regulation

- Rate policy
- Cost of capital
- Incentive regulation
- Fuels and power markets

### Management and Business Strategy

- Fuels and power market assessments
- Investment feasibility
- Corporate and business unit planning
- Benchmarking and productivity analysis

### Financial and Economic Advisory

- Valuation analysis
- Due diligence
- Buy and sell-side advisory

### Litigation Support and Expert Testimony

- Rate and regulatory policy
- Fuels and power markets
- Contract litigation
- Valuation and damages

## PROFESSIONAL HISTORY

**Concentric Energy Advisors, Inc. (2006 – Present)**
Senior Vice President
Vice President

**FTI Consulting (Lexecon) (2002 – 2006)**
Senior Managing Director – Energy Practice

**Arthur Andersen LLP (2000 – 2002)**
Managing Director, Andersen Corporate Finance – Energy and Utilities

**Navigant Consulting, Inc. (1996 – 2000)**
Managing Director, Financial Services Practice
Senior Vice President, Strategy Practice

**TotalFinaElf (1990 – 1996)**
Manager, Corporate Planning and Development
Manager, Investor Relations
Manager of Strategic Planning and Vice President, Natural Gas Division

**Arthur D. Little, Inc. (1989 – 1990)**
Senior Consultant – International Energy Practice

**DRI/McGraw-Hill (1984 – 1989)**
Director, North American Natural Gas Consulting
Senior Economist, U.S. Electricity Service

**Massachusetts Energy Facilities Siting Council (1982 – 1984)**
Senior Economist – Gas and Electric Utilities

**Maine Office of Energy Resources (1981 – 1982)**
State Energy Economist

## EDUCATION

**University of New Hampshire**
M.S., Resource Economics, *with honors*, 1981

**Georgetown University**
B.S., Business Administration and Economics, *cum laude*, 1975

## DESIGNATIONS AND PROFESSIONAL AFFILIATIONS

- Community Rowing Inc., Board of Directors, 2015 - 2019
- Georgetown University, Alumni Admissions Interviewer, 1988 – current

- NASD General Securities Representative and Managing Principal (Series 7, 63 and 24 Certifications), 2001
- American Petroleum Institute, CEO's Liaison to Management and Policy Committees, 1994-1996
- National Petroleum Council, Regulatory and Policy Task Forces, 1992
- President, International Association for Energy Economics, Dallas Chapter, 1995
- Gas Research Institute, Economics Advisory Committee, 1990-1993
- NARUC, Advanced Regulatory Studies Program, Michigan State University, 1984

**ARTICLES AND PUBLICATIONS**

- "Advancing FERC's Methodology for Determining Allowed ROEs for Electric Transmission Companies," submitted to FERC on behalf of EEI, James Coyne, Joshua Nowak and Julie Lieberman, May, 2020.
- "Regulator Rationale for Ratepayer-Funded Electricity and Natural Gas Innovation", James M. Coyne, Robert C. Yardley, Jr. and Jessalyn G. Pryciak, Energy Regulation Quarterly, Volume 6, Issue 3, 2018.
- "Stimulating Innovation on Behalf of Canada's Electricity and Natural Gas Consumers" (with Robert Yardley), prepared for the Canadian Gas Association and Canadian Electricity Association, May 2015.
- "Autopilot Error: Why Similar U.S. and Canadian Risk Profiles Yield Varied Rate-making Results" (with John Trogonoski), Public Utilities Fortnightly, May 2010
- "A Comparative Analysis of Return on Equity of Natural Gas Utilities" (with Dan Dane and Julie Lieberman), prepared for the Ontario Energy Board, June 2007
- "Do Utilities Mergers Deliver?" (with Prescott Hartshorne), Public Utilities Fortnightly, June 2006
- "Winners and Losers: Utility Strategy and Shareholder Return" (with Prescott Hartshorne), Public Utilities Fortnightly, October 2004
- "Winners and Losers in Restructuring: Assessing Electric and Gas Company Financial Performance" (with Prescott Hartshorne), white paper distributed to clients and press, August 2003
- "The New Generation Business," commissioned by the Electric Power Research Institute (EPRI) and distributed to EPRI members to contribute to a series on the changes in the Power Industry, December 2001
- Potential for Natural Gas in the United States, Volume V, Regulatory and Policy Issues (co-author), National Petroleum Council, December 1992
- "Natural Gas Outlook," articles on U.S. natural gas markets, published quarterly in the Data Resources Energy Review and Natural Gas Review, 1984-1989

**SPEAKING ENGAGEMENTS**

- "The Market Risk Premium: An In-Depth Review", Society of Utility and Regulatory Financial Analysts 53rd Financial Forum, Richmond, VA, April 28,2022
- "Energy Sector in Transition", Ontario Energy Association, Toronto, ON, September 24, 2018.
- "Understanding Regulated Utilities in Today's Capital Markets", NARUC Annual Meeting, La Quinta, CA, November 14, 2016.
- "Rate of Return: Where the Regulatory Rubber Meets the Road," CAMPUT Annual Conference, Montreal, Quebec, May 17, 2016.
- "Innovations in Utility Business Models and Regulation", The Canadian Association of Members of Public Utility Tribunals (CAMPUT) 2015 Energy Regulation Course, Queens University, Kingston, Ontario, June 2015
- "M&A and Valuations," Panelist at Infocast Utility Scale Solar Summit, September 2010
- "The Use of Expert Evidence," The Canadian Association of Members of Public Utility Tribunals (CAMPUT) 2010 Energy Regulation Course, Queens University, Kingston, Ontario, June 2010
- "A Comparative Analysis of Return on Equity for Utilities in Canada and the U.S.", The Canadian Association of Members of Public Utility Tribunals (CAMPUT) Annual Conference, Banff, Alberta, April 22, 2008
- "Nuclear Power on the Verge of a New Era," moderator for a client event co-hosted by Sutherland Asbill & Brennan and Lexecon, Washington D.C., October 2005
- "The Investment Implications of the Repeal of PUCHA," Skadden Arps Client Conference, New York, NY, October 2005
- "Anatomy of the Deal," First Annual Energy Transactions Conference, Newport, RI, May 2005
- "The Outlook for Wind Power," Skadden Arps Annual Energy and Project Finance Seminar, Naples, FL, March 2005
- "Direction of U.S. M&A Activity for Utilities," Energy and Mineral Law Foundation Conference, Sanibel Island, FL, February 2002
- "Outlook for U.S. Merger & Acquisition Activity," Utility Mergers & Acquisitions Conference, San Antonio, TX, October 2001
- "Investor Perspectives on Emerging Energy Companies," Panel Moderator at Energy Venture Conference, Boston, MA, June 2001
- "Electric Generation Asset Transactions: A Practical Guide," workshop conducted at the 1999 Thai Electricity and Gas Investment Briefing, Bangkok, Thailand, July 1999
- "New Strategic Options for the Power Sector," Electric Utility Business Environment Conference, Denver, CO, May 1999
- "Electric and Gas Industries: Moving Forward Together," New England Gas Association Annual Meeting, November 1998
- "Opportunities and Challenges in the Electric Marketplace," Electric Power Research Institute, July 1998

| SPONSOR | DATE | CASE/APPLICANT | DOCKET NO. | SUBJECT |
|---|---|---|---|---|
| **Alberta Beverage Container Management Board** | | | | |
| Alberta Beverage Container Management Board | 2016 2019 | Expert for the Board | N/A | Return Margin on Bottle Depots |
| **Alberta Utilities Commission** | | | | |
| ATCO Utilities Group | 2008 2009 | ATCO Gas; ATCO Pipelines Ltd.; ATCO Electric Ltd. | Application No. 1578571 / Proceeding ID. 85 | 2009 Generic Cost of Capital Proceeding (Gas & Electric) |
| Enmax Power Corporation | 2017 | Enmax | 22570 | Cost of Common Equity |
| Enmax Power Corporation | 2020 | Enmax | 24110 | 2021 Generic Cost of Capital |
| Enmax Power Corporation | 2023 | Enmax | 27084 | 2024 and Beyond Cost of Capital Parameters |
| **American Arbitration Association** | | | | |
| TransCanada Corporation | 2004 | TransCanada Corporation | AAA Case No. 50T 1810018804 | Valuation of Natural Gas Pipeline |
| **British Columbia Utilities Commission** | | | | |
| FortisBC | 2012 | FortisBC Utilities | G-20-12 | Cost of Capital Adjustment Mechanisms |
| FortisBC | 2015 2016 | FortisBC Utilities | G-129-16 | Cost of Capital (Gas and Electric Distribution) |
| FortisBC | 2022 | FortisBC Utilities | G-217-22 | Cost of Capital (Gas and Electric Distribution) |
| **California Public Utilities Commission** | | | | |
| San Diego Gas & Electric Company | 2019 | San Diego Gas & Electric Company | A-19-04-014 | Cost of Capital (Electric & Gas Distribution) |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET NO. | SUBJECT |
|---|---|---|---|---|
| San Diego Gas & Electric Company | 2021 | San Diego Gas & Electric Company | A-21-08-014 | Cost of Capital (Electric & Gas Distribution) |
| Southern California Gas Company | 2022 | Southern California Gas Company | A-22-04-011 | Cost of Capital (Gas Distribution) |
| San Diego Gas & Electric Company | 2022 | San Diego Gas & Electric Company | A-22-04-012 | Cost of Capital (Electric & Gas Distribution) |
| **Canada Energy Regulator** | | | | |
| Enbridge Pipelines Inc. | 2021 | Enbridge Pipelines Inc. | RH-001-2020 | Cost of Capital (Oil Pipeline) |
| **Connecticut Department of Public Utility Control** | | | | |
| Aquarion Water Company of CT/ Macquarie Securities | 2007 | Aquarion Water Company of CT | DPUC Docket No. 07-05-19 | Return on Equity (Water) |
| **Federal Energy Regulatory Commission** | | | | |
| Atlantic Power Corporation | 2007 | Atlantic Path 15, LLC | ER08-374-000 | Return on Equity (Electric) |
| Atlantic Power Corporation | 2010 | Atlantic Path 15, LLC | ER11-2909-000 | Return on Equity (Electric) |
| Atlantic Power Corporation | 2011 | Atlantic Path 15, LLC | ER11-2909 and EL11-29 | Rate of Return (Electric Transmission) |
| Startrans IO, LLC | 2012 | Startrans IO, LLC | ER-13-272-000 | Cost of Capital (Electric Transmission) |
| Startrans IO, LLC | 2015 | Startrans IO, LLC | ER-16-194-000 and EL16-25-000 | Cost of Capital (Electric Transmission) |
| Northern States Power Company | 2019 | Northern States Power Company | ER20-26-000 | Cost of Capital (Electric Transmission) |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET NO. | SUBJECT |
|---|---|---|---|---|
| PPL Electric Utilities Corp. | 2020 | PP&l Industrial Customer Alliance v. PPL Electric | EL20-48-000 | Answering Testimony in Response to a Section 206 ROE Complaint |
| South First Energy Operating Companies | 2020 | South First Energy Operating Companies | ER21-253-000 | Cost of Capital (Electric Transmission) |
| DCR Transmission, L.L.C. | 2023 | DCR Transmission, L.L.C. | ER23-___-000 | Cost of Capital (Electric Transmission) |
| **Florida Public Service Commission** | | | | |
| Florida Power & Light Company | 2021 | Florida Power & Light Company | Docket No. 20210015-EI | Cost of Capital (Electric) |
| **Georgia Public Service Commission** | | | | |
| Georgia Power Company | 2022 | Georgia Power Company | 44280 | Cost of Capital (Electric) |
| **Hawaii Public Utility Commission** | | | | |
| The Gas Company | 2017 | The Gas Company | Docket No. 2017-0105 | Cost of Capital (Gas Distribution) |
| **Maine Public Utilities Commission** | | | | |
| Bangor Hydro Electric Company | 1998 | Bangor Hydro Electric Company | MPUC Docket No. 98-820 | Transaction-Related Financial Advisory Services, Valuation |
| Central Maine Power Company | 2007 | Central Maine Power Company | MPUC Docket No. 2007-215 | Sales Forecast |
| Enmax Corporation | 2019 | Enmax Corporation | 2019-00097 | Regulatory Approval of Emera Maine Acquisition |
| Versant Power | 2021 | Versant Power | MPUC Docket No. 2020-00316 | Cost of Capital (Electric) |
| Versant Power | 2022 | Versant Power | 2022-00255 | Cost of Capital (Electric) |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET NO. | SUBJECT |
|---|---|---|---|---|
| Versant Power | 2024 | Versant Power | 2023-00336 | Cost of Capital (Electric) |
| **Maryland State Board of Contract Appeals** | | | | |
| Green Planet Power Solutions | 2018 | Green Planet Power Solutions and Maryland Bio Energy LLC v. Maryland Department of General Services | MSBCA 3061 | Contract Litigation, Power Purchase Agreement, Damages Analysis |
| **Massachusetts Superior Court** | | | | |
| Burncoat Pond Watershed District | 2010 | Central Water District v. Burncoat Pond Watershed District | WDCV 2001-0105 | Valuation/Eminent Domain |
| **Minnesota Public Utilities Commission** | | | | |
| Northern States Power Company | 2015<br>2016 | Northern States Power Company | E-002-GR-15-826 | Cost of Capital (Electric) |
| Northern States Power Company | 2017 | Northern States Power Company | E002/M-17-797<br>G002/M-17-787<br>E002/M-17-818 | Cost of Capital (Electric and Gas Rate Riders for Transmission, Renewable Generation and Gas Distribution) |
| **New Brunswick Energy and Utilities Board** | | | | |
| Liberty Utilities (Gas New Brunswick) LP | 2021 | Liberty Utilities (Gas New Brunswick) LP | 491 | Cost of Capital (Gas) |
| **Newfoundland and Labrador Board of Commissioners of Public Utilities** | | | | |
| Newfoundland Power | 2016 | Newfoundland Power | 2016 GRA | Cost of Capital (Electric) |
| Newfoundland Power | 2018 | Newfoundland Power | 2018 GRA | Cost of Capital (Electric) |
| Newfoundland Power | 2021 | Newfoundland Power | 2021 GRA | Cost of Capital (Electric) |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET NO. | SUBJECT |
|---|---|---|---|---|
| Newfoundland Power | 2024 | Newfoundland Power | 2025-2026 General Rate Application | Cost of Capital (Electric) |
| **New Jersey Board of Public Utilities** | | | | |
| Conectiv | 2000-2001 | Atlantic City Electric Company | NJBPU Docket No. EM00020106 | Transaction-Related Financial Advisory Services |
| **North Carolina Utilities Commission** | | | | |
| Duke Energy Carolinas, LLC | 2023 | Duke Energy Carolinas, LLC | E-7, Sub 1276 | Return on Equity (Electric) |
| Piedmont Natural Gas | 2024 | Piedmont Natural Gas | G-9, Sub 837 | Return on Equity (Gas Distribution) |
| **Nova Scotia Utility and Review Board** | | | | |
| Nova Scotia Power Inc. | 2012 | Nova Scotia Power Inc. | 2013 GRA | Return on Equity/Business Risk (Electric) |
| Nova Scotia Power Inc. | 2022 | Nova Scotia Power Inc. | 2022 GRA | Return on Equity/Business Risk (Electric) |
| Eastward Energy Inc. | 2023 | Eastward Energy Inc. | M10960 | Return on Equity/Business Risk (Gas) |
| **Public Utility Commission of Ohio** | | | | |
| Duke Ohio, Inc. | 2022 | Duke Ohio, Inc. | 22-507-GA-AIR | Return on Equity (Gas) |
| **Public Utility Commission of Oregon** | | | | |
| Northwest Natural Gas | 2023 | Northwest Natural Gas | UG-490 | Return on Equity (Gas) |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET NO. | SUBJECT |
|---|---|---|---|---|
| **Ontario Energy Board** | | | | |
| Enbridge Gas Distribution and Hydro One Networks and the Coalition of Large Distributors | 2009 | Enbridge Gas Distribution and Hydro One Networks and the Coalition of Large Distributors | EB-2009-0084 | Ontario Energy Board's 2009 Consultative Process on Cost of Capital Review (Gas & Electric) |
| Enbridge Gas Distribution | 2012 | Enbridge Gas Distribution | EB-2011-0354 | Industry Benchmarking Study and Cost of Capital (Gas Distribution) |
| Enbridge Gas Distribution | 2014 | Enbridge Gas Distribution | EB-2012-0459 | Incentive Regulation Plan and Industry Productivity Study |
| Ontario Power Generation | 2016 | Ontario Power Generation | EB-2016-0152 | Cost of Capital (Electric Generation) |
| Ontario Power Generation | 2020 | Ontario Power Generation | EB-2020-0290 | Capital Structure (Electric Generation) |
| Enbridge Gas Distribution | 2022 | Enbridge Gas Distribution | EB-2022-0200 | Capital Structure and Business Risk |
| Ontario Energy Association | 2024 | Enbridge Gas, the Coalition of Large Distributors, Ontario Power Generation, and Upper Canada Transmission | EB-2024-0063 | Cost of Capital (Electric, Gas, Transmission, Power Generation) |
| **Prince Edward Island Regulatory and Appeals Commission** | | | | |
| Maritime Electric Company | 2015 | Maritime Electric Company | UE20942 | Return on Capital (Electric) |
| Maritime Electric Company | 2022 | Maritime Electric Company | UE20946 | Return on Capital (Electric) |
| Maritime Electric Company | 2024 | Maritime Electric Company | UE21231 | Weather Normalization Report |
| **Public Utilities Commission of Ohio** | | | | |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET NO. | SUBJECT |
|---|---|---|---|---|
| Duke Energy Ohio, Inc. | 2022 | Duke Energy Ohio, Inc. | 2022-00372 | Cost of Capital (Gas Distribution) |
| Duke Energy Ohio, Inc. | 2023 | Duke Energy Ohio, Inc. | 22-507-GA-AIR | Cost of Capital (Gas) |
| **Régie de l'énergie du Québec** | | | | |
| Gaz Métro | 2012 | Gaz Métro | R-3809-2012 | Return on Equity/Business Risk/ Capital Structure (Gas Distribution) |
| Hydro-Québec Distribution and Hydro- Québec TransÉnergie | 2013 | Hydro-Québec Distribution and Hydro- Québec TransÉnergie | R-3842-2013 | Return on Equity/Business Risk (Electric) |
| Hydro-Québec Distribution | 2014 | Hydro-Québec Distribution | R-3905-2014 | Remuneration of Deferral Accounts |
| Hydro-Québec Distribution and Hydro- Québec TransÉnergie | 2015-2017 | Hydro-Québec Distribution and Hydro- Québec TransÉnergie | R-3897-2014 | Performance-Based Ratemaking |
| **South Carolina Public Service Commission** | | | | |
| Piedmont Natural Gas Company | 2022 | Piedmont Natural Gas Company | 2022-89-G | Return on Equity (Gas Distribution) |
| Duke Energy Progress | 2022 | Duke Energy Progress | Docket No. 2022-254-E | Return on Equity (Electric) |
| Duke Energy Carolinas | 2024 | Duke Energy Carolinas | 2023-388-E | Return on Equity (Electric) |
| **South Dakota Public Service Commission** | | | | |
| Northern States Power Company-MN | 2012 | Northern States Power Company-MN | EL 11-019 | Return on Equity |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET NO. | SUBJECT |
|---|---|---|---|---|
| **Texas Public Utility Commission** | | | | |
| Texas New Mexico Power Company | 2004 | Texas New Mexico Power Company | PUC Docket No. 29206 | Auction Process and Stranded Cost Recovery |
| **U.S. Department of Commerce** | | | | |
| Government of Québec | 2017 | Duty Investigation of Uncoated Groundwood Paper from Canada | PUC Docket No. 29206 | Contracting for Renewable Resources, Market Analysis, Damages Analysis |
| **Vermont Public Service Board** | | | | |
| Vermont Gas Systems, Inc. | 2006 | Vermont Gas Systems, Inc. | VPSB Docket No. 7109 | Models of Incentive Regulation |
| Vermont Gas Systems, Inc. | 2012 | Vermont Gas Systems, Inc. | Docket No. 7803A | Cost of Capital (Gas Distribution) |
| Green Mountain Power Corporation | 2013 | Green Mountain Power Corporation | Docket No. 8191 | Return on Equity (Electric) |
| Vermont Gas Systems, Inc. | 2016 | Vermont Gas Systems, Inc. | Docket No. 8698/8710 | Return on Equity (Gas Distribution) |
| Green Mountain Power Corporation | 2017 | Green Mountain Power Corporation | Docket No. Tariff-8677 | Return on Equity (Electric) |
| Green Mountain Power Corporation | 2018 | Green Mountain Power Corporation | 18-0974 | Return on Equity (Electric) |
| Vermont Gas Systems, Inc. | 2023 | Vermont Gas Systems, Inc. | 23-0561 | Return on Equity (Gas Distribution) Rebuttal |
| **State Corporation of Virginia** | | | | |
| Dominion Energy Virginia | 2021 | Virginia Electric and Power Company | PUR-2021-00058 | Cost of Capital (Electric) |
| **Wisconsin Public Service Commission** | | | | |
| Wisconsin Power and Light Company | 2007 | Wisconsin Power and Light Company | PSCW Docket No. 6680-CE-170 | Return on Equity (Electric) |
| Wisconsin Power and Light Company | 2007 | Wisconsin Power and Light Company | PSCW Docket No. 6680-CE-171 | Return on Equity (Electric) |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET NO. | SUBJECT |
|---|---|---|---|---|
| Northern States Power Company | 2011 | Northern States Power Company | PSCW Docket No. 4220-UR-117 | Return on Equity (Electric) |
| Northern States Power Company | 2013 | Northern States Power Company | PSCW Docket No. 4220-UR-119 | Return on Equity (Gas & Electric) |
| Northern States Power Company | 2015 | Northern States Power Company | PSCW Docket No. 4220-UR-121 | Return on Equity (Gas & Electric) |
| Northern States Power Company | 2017 2019 | Northern States Power Company | PSCW Docket No. 4220-UR-123, 4220-UR-124 | Return on Equity (Gas & Electric) |
| Northern States Power Company | 2021 | Northern States Power Company | 4220-UR-125 | Cost of Capital (Electric, Affidavit) |
| Northern States Power Company | 2023 | Northern States Power Company | 4220-UR-126 | Cost of Capital (Electric & Gas) |
| **Yukon Utilities Board** | | | | |
| ATCO Electric Yukon | 2016 | ATCO Electric Yukon | 2016-2017 GRA | Return on Equity (Electric) |

PROXY GROUP SCREENING DATA AND RESULTS - FINAL PROXY GROUP

| Company | Ticker | [1] Pays 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, S&P Capital IQ, and Zacks) | [5] Company Owns Generation Assets in Rate Base | [6] % Regulated Revenue > 70% | [7] % Regulated Operating Income > 70% | [8] % Regulated Electric Revenue > 80% | [9] % Regulated Electric Operating Income > 80% | [10] Announced Merger within 180 days from 3/31/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | Yes | BBB+ | Yes | Yes | Yes | 98% | 97% | 85% | 91% | No |
| Ameren Corporation | AEE | Yes | BBB+ | Yes | Yes | Yes | 100% | 98% | 87% | 85% | No |
| American Electric Power Company, Inc. | AEP | Yes | BBB+ | Yes | Yes | Yes | 97% | 98% | 100% | 100% | No |
| Duke Energy Corporation | DUK | Yes | BBB+ | Yes | Yes | Yes | 100% | 95% | 91% | 90% | No |
| Entergy Corporation | ETR | Yes | BBB+ | Yes | Yes | Yes | 97% | 99% | 98% | 99% | No |
| Evergy, Inc. | EVRG | Yes | BBB+ | Yes | Yes | Yes | 100% | 100% | 100% | 100% | No |
| FirstEnergy Corp | FE | Yes | BBB | Yes | Yes | Yes | 100% | 100% | 100% | 100% | No |
| IDACORP, Inc. | IDA | Yes | BBB | Yes | Yes | Yes | 100% | 100% | 100% | 100% | No |
| NextEra Energy, Inc. | NEE | Yes | A- | Yes | Yes | Yes | 77% | 88% | 100% | 100% | No |
| OGE Energy Corp. | OGE | Yes | BBB+ | Yes | Yes | Yes | 100% | 100% | 100% | 100% | No |
| TXNM Energy, Inc. | TXNM | Yes | BBB | Yes | Yes | Yes | 100% | 100% | 100% | 100% | No |
| Portland General Electric Company | POR | Yes | BBB+ | Yes | Yes | Yes | 100% | 100% | 100% | 100% | No |
| PPL Corporation | PPL | Yes | A- | Yes | Yes | Yes | 100% | 100% | 94% | 94% | No |
| Southern Company | SO | Yes | A- | Yes | Yes | Yes | 91% | 94% | 79% | 82% | No |
| Xcel Energy Inc. | XEL | Yes | BBB+ | Yes | Yes | Yes | 99% | 100% | 82% | 86% | No |

Notes:
[1] Source: Bloomberg Professional
[2] Source: S&P Capital IQ Pro
[3] Source: Yahoo! Finance and Zacks
[4] Source: Yahoo! Finance, Value Line Investment Survey, and Zacks
[5] Source: S&P Capital IQ Pro
[6] - [9] Source: Form 10-Ks; 2021-2023 three-year average
[7] - [9] Source: Form 10-Ks; 2021-2023 three-year average
[10] SNL Financial News Releases

30-DAY CONSTANT GROWTH DCF

| Company | | [1] Annualized Dividend | [2] Stock Price | [3] Dividend Yield | [4] Expected Dividend Yield | [5] Value Line Earnings Growth | [6] S&P Capital IQ Earnings Growth | [7] Zacks Earnings Growth | [8] Average Growth Rate | [9] Mean Low ROE | [10] Overall Mean ROE | [11] Mean High ROE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | $2.03 | $63.18 | 3.21% | 3.32% | 6.00% | 6.75% | 6.70% | 6.48% | 9.31% | 9.80% | 10.07% |
| Ameren Corporation | AEE | $2.84 | $99.12 | 2.87% | 2.96% | 6.50% | 7.00% | 6.70% | 6.73% | 9.46% | 9.70% | 9.97% |
| American Electric Power Company, Inc. | AEP | $3.72 | $105.20 | 3.54% | 3.65% | 6.50% | 6.79% | 6.30% | 6.53% | 9.95% | 10.18% | 10.45% |
| Duke Energy Corporation | DUK | $4.18 | $117.26 | 3.56% | 3.68% | 6.00% | 6.30% | 6.30% | 6.20% | 9.67% | 9.88% | 9.98% |
| Entergy Corporation | ETR | $2.40 | $84.52 | 2.84% | 2.94% | 3.00% | 8.88% | 9.50% | 7.13% | 5.88% | 10.07% | 12.47% |
| Evergy, Inc. | EVRG | $2.67 | $67.44 | 3.96% | 4.08% | 7.50% | 5.71% | 5.70% | 6.30% | 9.77% | 10.39% | 11.61% |
| FirstEnergy Corp | FE | $1.70 | $39.86 | 4.27% | 4.40% | 5.50% | 6.93% | 6.90% | 6.44% | 9.88% | 10.85% | 11.34% |
| IDACORP, Inc. | IDA | $3.44 | $114.74 | 3.00% | 3.11% | 6.00% | 8.61% | 8.50% | 7.70% | 9.09% | 10.82% | 11.74% |
| NextEra Energy, Inc. | NEE | $2.27 | $71.07 | 3.19% | 3.31% | 8.50% | 7.54% | 7.80% | 7.95% | 10.85% | 11.26% | 11.82% |
| OGE Energy Corp. | OGE | $1.69 | $44.89 | 3.75% | 3.87% | 6.50% | 6.00% | 6.10% | 6.20% | 9.87% | 10.07% | 10.38% |
| TXNM Energy, Inc. | TXNM | $1.63 | $52.10 | 3.13% | 3.20% | 4.00% | 7.25% | 3.00% | 4.75% | 6.18% | 7.95% | 10.49% |
| Portland General Electric Company | POR | $2.00 | $44.13 | 4.53% | 4.64% | 5.50% | 6.00% | 3.40% | 4.97% | 8.01% | 9.61% | 10.67% |
| PPL Corporation | PPL | $1.09 | $34.71 | 3.14% | 3.25% | 7.50% | 7.18% | 6.80% | 7.16% | 10.05% | 10.41% | 10.76% |
| Southern Company | SO | $2.88 | $89.46 | 3.22% | 3.32% | 6.50% | 6.00% | 6.50% | 6.33% | 9.32% | 9.65% | 9.82% |
| Xcel Energy Inc. | XEL | $2.28 | $69.59 | 3.28% | 3.39% | 6.50% | 7.00% | 6.90% | 6.80% | 9.88% | 10.19% | 10.39% |
| MEAN | | | | 3.43% | 3.54% | 6.13% | 6.93% | 6.47% | 6.51% | 9.14% | 10.05% | 10.80% |

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-day average as of March 31, 2025
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: S&P Capital IQ
[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 | | [1] Annualized Dividend | [2] Stock Price | [3] Dividend Yield | [4] Expected Dividend Yield | [5] Value Line Earnings Growth | [6] S&P Capital IQ Earnings Growth | [7] Zacks Earnings Growth | [8] Average Growth Rate | [9] Mean Low ROE | [10] Overall Mean ROE | [11] Mean High ROE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | $2.03 | $61.10 | 3.32% | 3.43% | 6.00% | 6.75% | 6.70% | 6.48% | 9.42% | 9.91% | 10.18% |
| Ameren Corporation | AEE | $2.84 | $94.60 | 3.00% | 3.10% | 6.50% | 7.00% | 6.70% | 6.73% | 9.60% | 9.84% | 10.11% |
| American Electric Power Company, Inc. | AEP | $3.72 | $99.20 | 3.75% | 3.87% | 6.50% | 6.79% | 6.30% | 6.53% | 10.17% | 10.40% | 10.67% |
| Duke Energy Corporation | DUK | $4.18 | $113.12 | 3.70% | 3.81% | 6.00% | 6.30% | 6.30% | 6.20% | 9.81% | 10.01% | 10.11% |
| Entergy Corporation | ETR | $2.40 | $80.08 | 3.00% | 3.10% | 3.00% | 8.88% | 9.50% | 7.13% | 6.04% | 10.23% | 12.64% |
| Evergy, Inc. | EVRG | $2.67 | $64.54 | 4.14% | 4.27% | 7.50% | 5.71% | 5.70% | 6.30% | 9.95% | 10.57% | 11.79% |
| FirstEnergy Corp | FE | $1.70 | $40.14 | 4.24% | 4.37% | 5.50% | 6.93% | 6.90% | 6.44% | 9.85% | 10.81% | 11.31% |
| IDACORP, Inc. | IDA | $3.44 | $112.77 | 3.05% | 3.17% | 6.00% | 8.61% | 8.50% | 7.70% | 9.14% | 10.87% | 11.79% |
| NextEra Energy, Inc. | NEE | $2.27 | $71.90 | 3.15% | 3.28% | 8.50% | 7.54% | 7.80% | 7.95% | 10.81% | 11.22% | 11.79% |
| OGE Energy Corp. | OGE | $1.69 | $43.14 | 3.91% | 4.03% | 6.50% | 6.00% | 6.10% | 6.20% | 10.02% | 10.23% | 10.53% |
| TXNM Energy, Inc. | TXNM | $1.63 | $49.67 | 3.28% | 3.36% | 4.00% | 7.25% | 3.00% | 4.75% | 6.33% | 8.11% | 10.65% |
| Portland General Electric Company | POR | $2.00 | $43.80 | 4.57% | 4.68% | 5.50% | 6.00% | 3.40% | 4.97% | 8.04% | 9.65% | 10.70% |
| PPL Corporation | PPL | $1.09 | $33.72 | 3.23% | 3.35% | 7.50% | 7.18% | 6.80% | 7.16% | 10.14% | 10.51% | 10.85% |
| Southern Company | SO | $2.88 | $86.09 | 3.35% | 3.45% | 6.50% | 6.00% | 6.50% | 6.33% | 9.45% | 9.78% | 9.95% |
| Xcel Energy Inc. | XEL | $2.28 | $68.51 | 3.33% | 3.44% | 6.50% | 7.00% | 6.90% | 6.80% | 9.94% | 10.24% | 10.44% |
| MEAN | | | | 3.53% | 3.65% | 6.13% | 6.93% | 6.47% | 6.51% | 9.25% | 10.16% | 10.90% |

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 90-day average as of March 31, 2025
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: S&P Capital IQ
[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 | | [1] Annualized Dividend | [2] Stock Price | [3] Dividend Yield | [4] Expected Dividend Yield | [5] Value Line Earnings Growth | [6] S&P Capital IQ Earnings Growth | [7] Zacks Earnings Growth | [8] Average Growth Rate | [9] Mean Low ROE | [10] Overall Mean ROE | [11] Mean High ROE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | $2.03 | $59.77 | 3.40% | 3.51% | 6.00% | 6.75% | 6.70% | 6.48% | 9.50% | 9.99% | 10.26% |
| Ameren Corporation | AEE | $2.84 | $89.26 | 3.18% | 3.29% | 6.50% | 7.00% | 6.70% | 6.73% | 9.79% | 10.02% | 10.29% |
| American Electric Power Company, Inc. | AEP | $3.72 | $98.96 | 3.76% | 3.88% | 6.50% | 6.79% | 6.30% | 6.53% | 10.18% | 10.41% | 10.68% |
| Duke Energy Corporation | DUK | $4.18 | $113.36 | 3.69% | 3.80% | 6.00% | 6.30% | 6.30% | 6.20% | 9.80% | 10.00% | 10.10% |
| Entergy Corporation | ETR | $2.40 | $71.72 | 3.35% | 3.47% | 3.00% | 8.88% | 9.50% | 7.13% | 6.40% | 10.59% | 13.01% |
| Evergy, Inc. | EVRG | $2.67 | $62.13 | 4.30% | 4.43% | 7.50% | 5.71% | 5.70% | 6.30% | 10.12% | 10.73% | 11.96% |
| FirstEnergy Corp | FE | $1.70 | $41.39 | 4.11% | 4.24% | 5.50% | 6.93% | 6.90% | 6.44% | 9.72% | 10.68% | 11.18% |
| IDACORP, Inc. | IDA | $3.44 | $107.83 | 3.19% | 3.31% | 6.00% | 8.61% | 8.50% | 7.70% | 9.29% | 11.02% | 11.94% |
| NextEra Energy, Inc. | NEE | $2.27 | $75.70 | 2.99% | 3.11% | 8.50% | 7.54% | 7.80% | 7.95% | 10.64% | 11.06% | 11.62% |
| OGE Energy Corp. | OGE | $1.69 | $41.52 | 4.06% | 4.18% | 6.50% | 6.00% | 6.10% | 6.20% | 10.18% | 10.38% | 10.69% |
| TXNM Energy, Inc. | TXNM | $1.63 | $45.96 | 3.55% | 3.63% | 4.00% | 7.25% | 3.00% | 4.75% | 6.60% | 8.38% | 10.92% |
| Portland General Electric Company | POR | $2.00 | $45.57 | 4.39% | 4.50% | 5.50% | 6.00% | 3.40% | 4.97% | 7.86% | 9.46% | 10.52% |
| PPL Corporation | PPL | $1.09 | $32.67 | 3.34% | 3.46% | 7.50% | 7.18% | 6.80% | 7.16% | 10.25% | 10.62% | 10.96% |
| Southern Company | SO | $2.88 | $86.95 | 3.31% | 3.42% | 6.50% | 6.00% | 6.50% | 6.33% | 9.41% | 9.75% | 9.92% |
| Xcel Energy Inc. | XEL | $2.28 | $65.28 | 3.49% | 3.61% | 6.50% | 7.00% | 6.90% | 6.80% | 10.11% | 10.41% | 10.61% |
| MEAN | | | | 3.61% | 3.72% | 6.13% | 6.93% | 6.47% | 6.51% | 9.32% | 10.23% | 10.98% |

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 180-day average as of March 31, 2025
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: S&P Capital IQ
[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])

BETA
AS OF MARCH 31, 2025

| | | [1] | [2] | [3] |
|---|---|---|---|---|
| | | Bloomberg - 5 yr | Bloomberg - 10 yr | Value Line |
| Alliant Energy Corporation | LNT | 0.667 | 0.769 | 0.950 |
| Ameren Corporation | AEE | 0.663 | 0.734 | 0.900 |
| American Electric Power Company, Inc. | AEP | 0.598 | 0.732 | 0.850 |
| Duke Energy Corporation | DUK | 0.562 | 0.705 | 0.900 |
| Entergy Corporation | ETR | 0.702 | 0.839 | 1.000 |
| Evergy, Inc. | EVRG | 0.634 | 0.769 | 0.950 |
| FirstEnergy Corp | FE | 0.669 | 0.774 | 0.900 |
| IDACORP, Inc. | IDA | 0.646 | 0.765 | 0.850 |
| NextEra Energy, Inc. | NEE | 0.795 | 0.795 | 1.050 |
| OGE Energy Corp. | OGE | 0.769 | 0.897 | 1.050 |
| TXNM Energy, Inc. | TXNM | 0.513 | 0.807 | 0.900 |
| Portland General Electric Company | POR | 0.670 | 0.766 | 0.950 |
| PPL Corporation | PPL | 0.738 | 0.917 | 1.100 |
| Southern Company | SO | 0.640 | 0.761 | 0.950 |
| Xcel Energy Inc. | XEL | 0.613 | 0.716 | 0.850 |
| Average | | 0.659 | 0.783 | 0.943 |

Notes:
[1] - [2] Source: Bloomberg Professional, adjusted beta with five-year and ten-year weekly changes against SPX Index
[3] Source: Value Line

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VL & BLOOMBERG GROWTH RATES

| | |
|---|---|
| [1] Cap. Weighted Estimate of the S&P 500 Dividend Yield | 1.40% |
| [2] Cap. Weighted Estimate of the S&P 500 Growth Rate | 13.42% |
| [3] Cap. Weighted S&P 500 Estimated Required Market Return | 14.92% |

STANDARD AND POOR'S 500 INDEX

| | | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|
| Name | Ticker | Weight In Index | Estimated Dividend Yield | Cap-Weighted Dividend Yield | Value Line Long-Term Growth Estimate | Cap. Weighted Long-Term Growth |
| LyondellBasell Industries NV | LYB | 0.05% | 7.61% | 0.00% | -1.50% | 0.00% |
| American Express Co | AXP | 0.40% | 1.22% | 0.00% | 9.00% | 0.04% |
| Verizon Communications Inc | VZ | 0.41% | 5.97% | 0.02% | 0.50% | 0.00% |
| Texas Pacific Land Corp | TPL | 0.06% | 0.48% | 0.00% | 10.50% | 0.01% |
| Broadcom Inc | AVGO | 1.68% | 1.41% | 0.02% | 22.00% | 0.37% |
| Boeing Co/The | BA | n/a | n/a | n/a | n/a | n/a |
| Solventum Corp | SOLV | n/a | n/a | n/a | n/a | n/a |
| Caterpillar Inc | CAT | 0.34% | 1.71% | 0.01% | 10.50% | 0.04% |
| JPMorgan Chase & Co | JPM | 1.46% | 2.28% | 0.03% | 8.00% | 0.12% |
| Chevron Corp | CVX | 0.62% | 4.09% | 0.03% | 4.00% | 0.02% |
| Coca-Cola Co/The | KO | 0.66% | 2.85% | 0.02% | 7.00% | 0.05% |
| AbbVie Inc | ABBV | 0.79% | 3.13% | 0.02% | 7.00% | 0.06% |
| Walt Disney Co/The | DIS | 0.38% | 1.01% | 0.00% | 31.00% | 0.12% |
| Corpay Inc | CPAY | 0.05% | n/a | n/a | 15.50% | 0.01% |
| Extra Space Storage Inc | EXR | 0.07% | 4.36% | 0.00% | -0.50% | 0.00% |
| Exxon Mobil Corp | XOM | 1.10% | 3.33% | 0.04% | -2.50% | -0.03% |
| Phillips 66 | PSX | 0.11% | 3.73% | 0.00% | 1.00% | 0.00% |
| General Electric Co | GE | 0.46% | 0.72% | 0.00% | 21.00% | 0.10% |
| HP Inc | HPQ | 0.06% | 4.18% | 0.00% | 5.50% | 0.00% |
| Home Depot Inc/The | HD | 0.78% | 2.51% | 0.02% | 6.50% | 0.05% |
| Monolithic Power Systems Inc | MPWR | 0.06% | 1.08% | 0.00% | 12.00% | 0.01% |
| International Business Machines Corp | IBM | 0.49% | 2.69% | 0.01% | 3.00% | 0.01% |
| Johnson & Johnson | JNJ | 0.85% | 2.99% | 0.03% | 4.50% | 0.04% |
| Lululemon Athletica Inc | LULU | 0.07% | n/a | n/a | 13.00% | 0.01% |
| McDonald's Corp | MCD | 0.48% | 2.27% | 0.01% | 8.50% | 0.04% |
| Merck & Co Inc | MRK | 0.48% | 3.61% | 0.02% | 13.50% | 0.07% |
| 3M Co | MMM | 0.17% | 1.99% | 0.00% | 25.50% | 0.04% |
| American Water Works Co Inc | AWK | 0.06% | 2.07% | 0.00% | 4.50% | 0.00% |
| Bank of America Corp | BAC | 0.68% | 2.49% | 0.02% | 7.00% | 0.05% |
| Pfizer Inc | PFE | 0.31% | 6.79% | 0.02% | 7.50% | 0.02% |
| Procter & Gamble Co/The | PG | 0.85% | 2.36% | 0.02% | 5.00% | 0.04% |
| AT&T Inc | T | 0.43% | 3.93% | 0.02% | 6.50% | 0.03% |
| Travelers Cos Inc/The | TRV | 0.13% | 1.59% | 0.00% | 10.50% | 0.01% |
| RTX Corp | RTX | 0.38% | 1.90% | 0.01% | 12.00% | 0.05% |
| Analog Devices Inc | ADI | 0.21% | 1.96% | 0.00% | 9.00% | 0.02% |
| Walmart Inc | WMT | 1.50% | 1.07% | 0.02% | 9.50% | 0.14% |
| Cisco Systems Inc | CSCO | 0.52% | 2.66% | 0.01% | 5.50% | 0.03% |
| Intel Corp | INTC | 0.21% | n/a | n/a | -2.00% | 0.00% |
| General Motors Co | GM | 0.10% | 1.02% | 0.00% | 7.50% | 0.01% |
| Microsoft Corp | MSFT | 5.95% | 0.88% | 0.05% | 14.50% | 0.86% |
| Dollar General Corp | DG | 0.04% | 2.68% | 0.00% | -0.50% | 0.00% |
| Cigna Group/The | CI | 0.19% | 1.84% | 0.00% | 11.00% | 0.02% |
| Kinder Morgan Inc | KMI | 0.14% | 4.03% | 0.01% | 9.00% | 0.01% |
| Citigroup Inc | C | 0.28% | 3.16% | 0.01% | 3.00% | 0.01% |
| American International Group Inc | AIG | 0.11% | 1.84% | 0.00% | 12.50% | 0.01% |
| Altria Group Inc | MO | 0.22% | 6.80% | 0.01% | 6.00% | 0.01% |
| HCA Healthcare Inc | HCA | 0.18% | 0.83% | 0.00% | 10.00% | 0.02% |
| International Paper Co | IP | 0.06% | 3.47% | 0.00% | 8.00% | 0.00% |
| Hewlett Packard Enterprise Co | HPE | 0.04% | 3.37% | 0.00% | 5.50% | 0.00% |
| Abbott Laboratories | ABT | 0.49% | 1.78% | 0.01% | 4.50% | 0.02% |
| Aflac Inc | AFL | 0.13% | 2.09% | 0.00% | 8.50% | 0.01% |
| Air Products and Chemicals Inc | APD | 0.14% | 2.43% | 0.00% | 10.50% | 0.01% |
| Super Micro Computer Inc | SMCI | 0.04% | n/a | n/a | 39.00% | 0.02% |
| Royal Caribbean Cruises Ltd | RCL | n/a | 1.46% | n/a | n/a | n/a |
| Hess Corp | HES | 0.10% | 1.25% | 0.00% | 7.50% | 0.01% |
| Lennox International Inc | LII | 0.04% | 0.82% | 0.00% | 12.50% | 0.01% |
| Archer-Daniels-Midland Co | ADM | 0.05% | 4.25% | 0.00% | 3.00% | 0.00% |
| Automatic Data Processing Inc | ADP | 0.26% | 2.02% | 0.01% | 8.50% | 0.02% |
| Verisk Analytics Inc | VRSK | 0.09% | 0.60% | 0.00% | 11.00% | 0.01% |
| AutoZone Inc | AZO | 0.14% | n/a | n/a | 11.50% | 0.02% |
| Linde PLC | LIN | 0.47% | 1.29% | 0.01% | 7.00% | 0.03% |
| Avery Dennison Corp | AVY | 0.03% | 1.98% | 0.00% | 2.00% | 0.00% |
| Enphase Energy Inc | ENPH | 0.02% | n/a | n/a | 6.50% | 0.00% |
| MSCI Inc | MSCI | 0.09% | 1.27% | 0.00% | 9.50% | 0.01% |
| Ball Corp | BALL | 0.03% | 1.54% | 0.00% | 10.50% | 0.00% |
| Axon Enterprise Inc | AXON | 0.09% | n/a | n/a | 26.00% | 0.02% |
| Dayforce Inc | DAY | n/a | n/a | n/a | n/a | n/a |
| Carrier Global Corp | CARR | 0.12% | 1.42% | 0.00% | 13.00% | 0.02% |
| Bank of New York Mellon Corp/The | BK | 0.13% | 2.24% | 0.00% | 10.50% | 0.01% |
| Otis Worldwide Corp | OTIS | 0.09% | 1.51% | 0.00% | 10.00% | 0.01% |
| Baxter International Inc | BAX | 0.04% | 1.99% | 0.00% | 3.50% | 0.00% |
| Becton Dickinson & Co | BDX | 0.14% | 1.82% | 0.00% | 7.00% | 0.01% |
| Berkshire Hathaway Inc | BRK/B | 1.52% | n/a | n/a | 9.00% | 0.14% |
| Best Buy Co Inc | BBY | 0.03% | 5.16% | 0.00% | 1.00% | 0.00% |
| Boston Scientific Corp | BSX | 0.32% | n/a | n/a | 12.50% | 0.04% |

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VL & BLOOMBERG GROWTH RATES

| | |
|---|---|
| [1] Cap. Weighted Estimate of the S&P 500 Dividend Yield | 1.40% |
| [2] Cap. Weighted Estimate of the S&P 500 Growth Rate | 13.42% |
| [3] Cap. Weighted S&P 500 Estimated Required Market Return | 14.92% |

STANDARD AND POOR'S 500 INDEX

| | | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|
| Name | Ticker | Weight In Index | Estimated Dividend Yield | Cap-Weighted Dividend Yield | Value Line Long-Term Growth Estimate | Cap. Weighted Long-Term Growth |
| Bristol-Myers Squibb Co | BMY | 0.26% | 4.07% | 0.01% | 2.50% | 0.01% |
| Brown-Forman Corp | BF/B | 0.02% | 2.67% | 0.00% | 14.00% | 0.00% |
| Coterra Energy Inc | CTRA | 0.05% | 3.04% | 0.00% | 7.00% | 0.00% |
| Hilton Worldwide Holdings Inc | HLT | n/a | 0.26% | n/a | n/a | n/a |
| Carnival Corp | CCL | n/a | n/a | n/a | n/a | n/a |
| Builders FirstSource Inc | BLDR | 0.03% | n/a | n/a | 4.50% | 0.00% |
| UDR Inc | UDR | 0.03% | 3.81% | 0.00% | 7.50% | 0.00% |
| Clorox Co/The | CLX | 0.04% | 3.31% | 0.00% | 10.00% | 0.00% |
| Paycom Software Inc | PAYC | 0.03% | 0.69% | 0.00% | 12.50% | 0.00% |
| CMS Energy Corp | CMS | 0.05% | 2.89% | 0.00% | 6.00% | 0.00% |
| Colgate-Palmolive Co | CL | 0.16% | 2.22% | 0.00% | 10.00% | 0.02% |
| EPAM Systems Inc | EPAM | 0.02% | n/a | n/a | 20.50% | 0.00% |
| Conagra Brands Inc | CAG | 0.03% | 5.25% | 0.00% | 2.00% | 0.00% |
| Airbnb Inc | ABNB | 0.11% | n/a | n/a | 23.00% | 0.03% |
| Consolidated Edison Inc | ED | 0.08% | 3.07% | 0.00% | 6.00% | 0.00% |
| Corning Inc | GLW | 0.08% | 2.45% | 0.00% | 23.00% | 0.02% |
| GoDaddy Inc | GDDY | 0.05% | n/a | n/a | 12.50% | 0.01% |
| Cummins Inc | CMI | 0.09% | 2.32% | 0.00% | 8.50% | 0.01% |
| Caesars Entertainment Inc | CZR | n/a | n/a | n/a | n/a | n/a |
| Danaher Corp | DHR | 0.31% | 0.62% | 0.00% | 2.00% | 0.01% |
| Target Corp | TGT | 0.10% | 4.29% | 0.00% | 8.00% | 0.01% |
| Williams-Sonoma Inc | WSM | 0.04% | 1.67% | 0.00% | 5.00% | 0.00% |
| Deere & Co | DE | 0.27% | 1.38% | 0.00% | 3.00% | 0.01% |
| Dominion Energy Inc | D | 0.10% | 4.76% | 0.00% | 3.50% | 0.00% |
| Dover Corp | DOV | 0.05% | 1.17% | 0.00% | 5.00% | 0.00% |
| Alliant Energy Corp | LNT | 0.04% | 3.15% | 0.00% | 6.00% | 0.00% |
| Steel Dynamics Inc | STLD | 0.04% | 1.60% | 0.00% | 0.50% | 0.00% |
| Duke Energy Corp | DUK | 0.20% | 3.43% | 0.01% | 6.00% | 0.01% |
| Regency Centers Corp | REG | 0.03% | 3.82% | 0.00% | 10.00% | 0.00% |
| Eaton Corp PLC | ETN | 0.23% | 1.53% | 0.00% | 11.00% | 0.02% |
| Ecolab Inc | ECL | 0.15% | 1.03% | 0.00% | 10.50% | 0.02% |
| Revvity Inc | RVTY | 0.03% | 0.26% | 0.00% | -1.50% | 0.00% |
| Dell Technologies Inc | DELL | 0.07% | 2.30% | 0.00% | 2.50% | 0.00% |
| Emerson Electric Co | EMR | 0.13% | 1.92% | 0.00% | 11.00% | 0.01% |
| EOG Resources Inc | EOG | 0.15% | 3.04% | 0.00% | 7.00% | 0.01% |
| Aon PLC | AON | 0.18% | 0.68% | 0.00% | 12.50% | 0.02% |
| Entergy Corp | ETR | 0.08% | 2.81% | 0.00% | 3.00% | 0.00% |
| Equifax Inc | EFX | 0.06% | 0.64% | 0.00% | 7.00% | 0.00% |
| EQT Corp | EQT | n/a | 1.18% | n/a | n/a | n/a |
| IQVIA Holdings Inc | IQV | 0.07% | n/a | n/a | 9.00% | 0.01% |
| Gartner Inc | IT | 0.07% | n/a | n/a | 8.00% | 0.01% |
| FedEx Corp | FDX | 0.12% | 2.26% | 0.00% | 9.00% | 0.01% |
| Brown & Brown Inc | BRO | 0.08% | 0.48% | 0.00% | 12.50% | 0.01% |
| Ford Motor Co | F | 0.08% | 1.50% | 0.00% | 17.00% | 0.01% |
| NextEra Energy Inc | NEE | 0.31% | 3.20% | 0.01% | 8.50% | 0.03% |
| Franklin Resources Inc | BEN | 0.02% | 6.65% | 0.00% | 4.00% | 0.00% |
| Garmin Ltd | GRMN | 0.09% | 1.66% | 0.00% | 7.00% | 0.01% |
| Freeport-McMoRan Inc | FCX | 0.12% | 1.58% | 0.00% | 17.50% | 0.02% |
| Expand Energy Corp | EXE | n/a | 2.07% | n/a | n/a | n/a |
| Dexcom Inc | DXCM | n/a | n/a | n/a | n/a | n/a |
| General Dynamics Corp | GD | 0.16% | 2.20% | 0.00% | 9.50% | 0.01% |
| General Mills Inc | GIS | 0.07% | 4.01% | 0.00% | 4.50% | 0.00% |
| Genuine Parts Co | GPC | 0.04% | 3.46% | 0.00% | 3.50% | 0.00% |
| Atmos Energy Corp | ATO | 0.05% | 2.25% | 0.00% | 6.00% | 0.00% |
| WW Grainger Inc | GWW | 0.10% | 0.83% | 0.00% | 5.00% | 0.01% |
| Halliburton Co | HAL | 0.05% | 2.68% | 0.00% | 16.00% | 0.01% |
| L3Harris Technologies Inc | LHX | 0.08% | 2.29% | 0.00% | 9.00% | 0.01% |
| Healthpeak Properties Inc | DOC | 0.03% | 6.03% | 0.00% | 6.00% | 0.00% |
| Insulet Corp | PODD | n/a | n/a | n/a | n/a | n/a |
| Fortive Corp | FTV | 0.05% | 0.44% | 0.00% | 10.50% | 0.01% |
| Hershey Co/The | HSY | 0.05% | 3.20% | 0.00% | 7.00% | 0.00% |
| Synchrony Financial | SYF | 0.04% | 1.89% | 0.00% | 47.00% | 0.02% |
| Hormel Foods Corp | HRL | 0.04% | 3.75% | 0.00% | 6.00% | 0.00% |
| Arthur J Gallagher & Co | AJG | 0.19% | 0.75% | 0.00% | 16.50% | 0.03% |
| Mondelez International Inc | MDLZ | 0.19% | 2.77% | 0.01% | 7.50% | 0.01% |
| CenterPoint Energy Inc | CNP | 0.05% | 2.43% | 0.00% | 6.50% | 0.00% |
| Humana Inc | HUM | 0.07% | 1.34% | 0.00% | 2.00% | 0.00% |
| Willis Towers Watson PLC | WTW | 0.07% | 1.09% | 0.00% | 9.50% | 0.01% |
| Illinois Tool Works Inc | ITW | 0.16% | 2.42% | 0.00% | 9.00% | 0.01% |
| CDW Corp/DE | CDW | 0.05% | 1.56% | 0.00% | 7.00% | 0.00% |
| Trane Technologies PLC | TT | 0.16% | 1.12% | 0.00% | 14.00% | 0.02% |
| Interpublic Group of Cos Inc/The | IPG | 0.02% | 4.86% | 0.00% | 8.50% | 0.00% |
| International Flavors & Fragrances Inc | IFF | 0.04% | 2.06% | 0.00% | 0.50% | 0.00% |
| Generac Holdings Inc | GNRC | 0.02% | n/a | n/a | 18.00% | 0.00% |
| NXP Semiconductors NV | NXPI | 0.10% | 2.13% | 0.00% | 6.50% | 0.01% |

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VL & BLOOMBERG GROWTH RATES

| | |
|---|---|
| [1] Cap. Weighted Estimate of the S&P 500 Dividend Yield | 1.40% |
| [2] Cap. Weighted Estimate of the S&P 500 Growth Rate | 13.42% |
| [3] Cap. Weighted S&P 500 Estimated Required Market Return | 14.92% |

STANDARD AND POOR'S 500 INDEX

| | | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|
| Name | Ticker | Weight In Index | Estimated Dividend Yield | Cap-Weighted Dividend Yield | Value Line Long-Term Growth Estimate | Cap. Weighted Long-Term Growth |
| Kellanova | K | 0.06% | 2.76% | 0.00% | 2.50% | 0.00% |
| Broadridge Financial Solutions Inc | BR | 0.06% | 1.45% | 0.00% | 9.50% | 0.01% |
| Kimberly-Clark Corp | KMB | 0.10% | 3.54% | 0.00% | 6.50% | 0.01% |
| Kimco Realty Corp | KIM | 0.03% | 4.71% | 0.00% | 27.50% | 0.01% |
| Oracle Corp | ORCL | 0.84% | 1.43% | 0.01% | 10.00% | 0.08% |
| Kroger Co/The | KR | 0.10% | 1.89% | 0.00% | 5.00% | 0.01% |
| Lennar Corp | LEN | 0.06% | 1.74% | 0.00% | 4.00% | 0.00% |
| Eli Lilly & Co | LLY | 1.67% | 0.73% | 0.01% | 26.50% | 0.44% |
| Charter Communications Inc | CHTR | 0.11% | n/a | n/a | 9.00% | 0.01% |
| Loews Corp | L | 0.04% | 0.27% | 0.00% | 15.50% | 0.01% |
| Lowe's Cos Inc | LOW | 0.28% | 1.97% | 0.01% | 6.50% | 0.02% |
| Hubbell Inc | HUBB | 0.04% | 1.60% | 0.00% | 6.00% | 0.00% |
| IDEX Corp | IEX | 0.03% | 1.53% | 0.00% | 5.50% | 0.00% |
| Marsh & McLennan Cos Inc | MMC | 0.26% | 1.34% | 0.00% | 12.50% | 0.03% |
| Masco Corp | MAS | 0.03% | 1.78% | 0.00% | 10.00% | 0.00% |
| S&P Global Inc | SPGI | 0.34% | 0.76% | 0.00% | 8.50% | 0.03% |
| Medtronic PLC | MDT | 0.25% | 3.12% | 0.01% | 6.00% | 0.01% |
| Viatris Inc | VTRS | 0.02% | 5.51% | 0.00% | -2.00% | 0.00% |
| CVS Health Corp | CVS | 0.18% | 3.93% | 0.01% | 0.50% | 0.00% |
| DuPont de Nemours Inc | DD | 0.07% | 2.20% | 0.00% | 10.50% | 0.01% |
| Micron Technology Inc | MU | 0.21% | 0.53% | 0.00% | 39.00% | 0.08% |
| Motorola Solutions Inc | MSI | 0.16% | 1.00% | 0.00% | 10.00% | 0.02% |
| Cboe Global Markets Inc | CBOE | 0.05% | 1.11% | 0.00% | 12.50% | 0.01% |
| Newmont Corp | NEM | 0.12% | 2.07% | 0.00% | 12.50% | 0.01% |
| NIKE Inc | NKE | 0.16% | 2.52% | 0.00% | 10.50% | 0.02% |
| NiSource Inc | NI | 0.04% | 2.79% | 0.00% | 8.00% | 0.00% |
| Norfolk Southern Corp | NSC | 0.12% | 2.28% | 0.00% | 12.00% | 0.01% |
| Principal Financial Group Inc | PFG | 0.04% | 3.56% | 0.00% | 4.00% | 0.00% |
| Eversource Energy | ES | 0.05% | 4.85% | 0.00% | 5.50% | 0.00% |
| Northrop Grumman Corp | NOC | 0.16% | 1.61% | 0.00% | 7.50% | 0.01% |
| Wells Fargo & Co | WFC | 0.50% | 2.23% | 0.01% | 9.50% | 0.05% |
| Nucor Corp | NUE | n/a | 1.83% | n/a | n/a | n/a |
| Occidental Petroleum Corp | OXY | 0.10% | 1.94% | 0.00% | 6.00% | 0.01% |
| Omnicom Group Inc | OMC | 0.03% | 3.38% | 0.00% | 7.00% | 0.00% |
| ONEOK Inc | OKE | 0.13% | 4.15% | 0.01% | 14.50% | 0.02% |
| Raymond James Financial Inc | RJF | 0.06% | 1.44% | 0.00% | 10.00% | 0.01% |
| PG&E Corp | PCG | 0.08% | 0.58% | 0.00% | 9.00% | 0.01% |
| Parker-Hannifin Corp | PH | 0.17% | 1.07% | 0.00% | 10.00% | 0.02% |
| Rollins Inc | ROL | 0.06% | 1.22% | 0.00% | 9.50% | 0.01% |
| PPL Corp | PPL | 0.06% | 3.02% | 0.00% | 7.50% | 0.00% |
| Aptiv PLC | APTV | n/a | n/a | n/a | n/a | n/a |
| ConocoPhillips | COP | 0.28% | 2.97% | 0.01% | 4.00% | 0.01% |
| PulteGroup Inc | PHM | 0.04% | 0.86% | 0.00% | 8.50% | 0.00% |
| Pinnacle West Capital Corp | PNW | 0.02% | 3.76% | 0.00% | 4.00% | 0.00% |
| PNC Financial Services Group Inc/The | PNC | 0.15% | 3.64% | 0.01% | 7.00% | 0.01% |
| PPG Industries Inc | PPG | 0.05% | 2.49% | 0.00% | 5.00% | 0.00% |
| DoorDash Inc | DASH | n/a | n/a | n/a | n/a | n/a |
| Progressive Corp/The | PGR | 0.35% | 0.14% | 0.00% | 23.50% | 0.08% |
| Veralto Corp | VLTO | 0.05% | 0.45% | 0.00% | 6.00% | 0.00% |
| Public Service Enterprise Group Inc | PEG | 0.09% | 3.06% | 0.00% | 6.00% | 0.01% |
| Cooper Cos Inc/The | COO | 0.04% | n/a | n/a | 8.50% | 0.00% |
| Edison International | EIX | 0.05% | 5.62% | 0.00% | 6.50% | 0.00% |
| Schlumberger NV | SLB | 0.12% | 2.73% | 0.00% | 18.00% | 0.02% |
| Charles Schwab Corp/The | SCHW | 0.30% | 1.38% | 0.00% | 10.00% | 0.03% |
| Sherwin-Williams Co/The | SHW | 0.19% | 0.90% | 0.00% | 12.00% | 0.02% |
| West Pharmaceutical Services Inc | WST | 0.03% | 0.38% | 0.00% | 7.50% | 0.00% |
| J M Smucker Co/The | SJM | 0.03% | 3.65% | 0.00% | 6.50% | 0.00% |
| Snap-on Inc | SNA | 0.04% | 2.54% | 0.00% | 4.50% | 0.00% |
| AMETEK Inc | AME | 0.08% | 0.72% | 0.00% | 10.00% | 0.01% |
| Uber Technologies Inc | UBER | n/a | n/a | n/a | n/a | n/a |
| Southern Co/The | SO | 0.21% | 3.13% | 0.01% | 6.50% | 0.01% |
| Truist Financial Corp | TFC | 0.11% | 5.05% | 0.01% | 2.00% | 0.00% |
| Southwest Airlines Co | LUV | n/a | 2.14% | n/a | n/a | n/a |
| W R Berkley Corp | WRB | 0.06% | 0.45% | 0.00% | 14.50% | 0.01% |
| Stanley Black & Decker Inc | SWK | 0.03% | 4.27% | 0.00% | 9.50% | 0.00% |
| Public Storage | PSA | 0.11% | 4.01% | 0.00% | 7.00% | 0.01% |
| Arista Networks Inc | ANET | 0.21% | n/a | n/a | 16.00% | 0.03% |
| Sysco Corp | SYY | 0.08% | 2.72% | 0.00% | 9.50% | 0.01% |
| Corteva Inc | CTVA | 0.09% | 1.08% | 0.00% | 9.50% | 0.01% |
| Texas Instruments Inc | TXN | 0.35% | 3.03% | 0.01% | 6.50% | 0.02% |
| Textron Inc | TXT | 0.03% | 0.11% | 0.00% | 12.00% | 0.00% |
| Thermo Fisher Scientific Inc | TMO | 0.40% | 0.35% | 0.00% | 6.00% | 0.02% |
| TJX Cos Inc/The | TJX | 0.29% | 1.40% | 0.00% | 12.50% | 0.04% |
| Globe Life Inc | GL | 0.02% | 0.82% | 0.00% | 9.00% | 0.00% |
| Johnson Controls International plc | JCI | 0.11% | 1.85% | 0.00% | 11.50% | 0.01% |

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VL & BLOOMBERG GROWTH RATES

| | |
|---|---|
| [1] Cap. Weighted Estimate of the S&P 500 Dividend Yield | 1.40% |
| [2] Cap. Weighted Estimate of the S&P 500 Growth Rate | 13.42% |
| [3] Cap. Weighted S&P 500 Estimated Required Market Return | 14.92% |

STANDARD AND POOR'S 500 INDEX

| | | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|
| Name | Ticker | Weight In Index | Estimated Dividend Yield | Cap-Weighted Dividend Yield | Value Line Long-Term Growth Estimate | Cap. Weighted Long-Term Growth |
| Ulta Beauty Inc | ULTA | 0.04% | n/a | n/a | 6.00% | 0.00% |
| Union Pacific Corp | UNP | 0.30% | 2.27% | 0.01% | 8.00% | 0.02% |
| Keysight Technologies Inc | KEYS | 0.06% | n/a | n/a | 5.50% | 0.00% |
| UnitedHealth Group Inc | UNH | 1.02% | 1.60% | 0.02% | 11.00% | 0.11% |
| Blackstone Inc | BX | 0.22% | 4.12% | 0.01% | 16.00% | 0.03% |
| Ventas Inc | VTR | 0.06% | 2.79% | 0.00% | 23.00% | 0.01% |
| Labcorp Holdings Inc | LH | 0.04% | 1.24% | 0.00% | 1.50% | 0.00% |
| Vulcan Materials Co | VMC | 0.07% | 0.84% | 0.00% | 7.50% | 0.00% |
| Weyerhaeuser Co | WY | 0.05% | 2.87% | 0.00% | -2.00% | 0.00% |
| Williams Cos Inc/The | WMB | 0.16% | 3.35% | 0.01% | 9.50% | 0.01% |
| Constellation Energy Corp | CEG | 0.14% | 0.77% | 0.00% | 17.50% | 0.02% |
| WEC Energy Group Inc | WEC | 0.07% | 3.28% | 0.00% | 6.00% | 0.00% |
| Adobe Inc | ADBE | 0.35% | n/a | n/a | 13.50% | 0.05% |
| Vistra Corp | VST | n/a | 0.76% | n/a | n/a | n/a |
| AES Corp/The | AES | 0.02% | 5.67% | 0.00% | 14.00% | 0.00% |
| Expeditors International of Washington Inc | EXPD | 0.04% | 1.21% | 0.00% | -1.50% | 0.00% |
| Amgen Inc | AMGN | 0.36% | 3.06% | 0.01% | 5.50% | 0.02% |
| Apple Inc | AAPL | 7.11% | 0.45% | 0.03% | 11.00% | 0.78% |
| Autodesk Inc | ADSK | 0.12% | n/a | n/a | 14.00% | 0.02% |
| Cintas Corp | CTAS | 0.18% | 0.76% | 0.00% | 14.00% | 0.02% |
| Comcast Corp | CMCSA | 0.30% | 3.58% | 0.01% | 7.50% | 0.02% |
| Molson Coors Beverage Co | TAP | 0.02% | 3.09% | 0.00% | 11.50% | 0.00% |
| KLA Corp | KLAC | 0.19% | 1.00% | 0.00% | 12.50% | 0.02% |
| Marriott International Inc/MD | MAR | 0.14% | 1.06% | 0.00% | 11.00% | 0.02% |
| Fiserv Inc | FI | 0.26% | n/a | n/a | 9.50% | 0.03% |
| McCormick & Co Inc/MD | MKC | 0.04% | 2.19% | 0.00% | 4.50% | 0.00% |
| PACCAR Inc | PCAR | 0.11% | 1.36% | 0.00% | 14.50% | 0.02% |
| Costco Wholesale Corp | COST | 0.89% | 0.49% | 0.00% | 11.50% | 0.10% |
| Stryker Corp | SYK | 0.30% | 0.90% | 0.00% | 9.50% | 0.03% |
| Tyson Foods Inc | TSN | 0.04% | 3.13% | 0.00% | 6.00% | 0.00% |
| Lamb Weston Holdings Inc | LW | 0.02% | 2.78% | 0.00% | 10.50% | 0.00% |
| Applied Materials Inc | AMAT | 0.25% | 1.27% | 0.00% | 8.00% | 0.02% |
| Cardinal Health Inc | CAH | 0.07% | 1.47% | 0.00% | 6.50% | 0.00% |
| Cincinnati Financial Corp | CINF | 0.05% | 2.36% | 0.00% | 14.00% | 0.01% |
| Paramount Global | PARA | 0.02% | 1.67% | 0.00% | 3.00% | 0.00% |
| DR Horton Inc | DHI | 0.09% | 1.26% | 0.00% | 3.50% | 0.00% |
| Electronic Arts Inc | EA | 0.08% | 0.53% | 0.00% | 14.00% | 0.01% |
| Erie Indemnity Co | ERIE | 0.04% | 1.30% | 0.00% | 18.00% | 0.01% |
| Fair Isaac Corp | FICO | 0.10% | n/a | n/a | 20.50% | 0.02% |
| Fastenal Co | FAST | 0.09% | 2.22% | 0.00% | 8.00% | 0.01% |
| M&T Bank Corp | MTB | 0.06% | 3.02% | 0.00% | 5.50% | 0.00% |
| Xcel Energy Inc | XEL | 0.09% | 3.22% | 0.00% | 6.50% | 0.01% |
| Fifth Third Bancorp | FITB | 0.06% | 3.78% | 0.00% | 5.00% | 0.00% |
| Gilead Sciences Inc | GILD | 0.30% | 2.82% | 0.01% | 2.50% | 0.01% |
| Hasbro Inc | HAS | 0.02% | 4.55% | 0.00% | 8.50% | 0.00% |
| Huntington Bancshares Inc/OH | HBAN | 0.05% | 4.13% | 0.00% | 7.00% | 0.00% |
| Welltower Inc | WELL | 0.21% | 1.75% | 0.00% | 22.00% | 0.05% |
| Biogen Inc | BIIB | 0.04% | n/a | n/a | 1.00% | 0.00% |
| Northern Trust Corp | NTRS | 0.04% | 3.04% | 0.00% | 5.00% | 0.00% |
| Packaging Corp of America | PKG | 0.04% | 2.52% | 0.00% | 9.00% | 0.00% |
| Paychex Inc | PAYX | 0.12% | 2.54% | 0.00% | 8.00% | 0.01% |
| QUALCOMM Inc | QCOM | 0.36% | 2.21% | 0.01% | 5.50% | 0.02% |
| Ross Stores Inc | ROST | 0.09% | 1.27% | 0.00% | 9.50% | 0.01% |
| IDEXX Laboratories Inc | IDXX | 0.07% | n/a | n/a | 10.50% | 0.01% |
| Starbucks Corp | SBUX | 0.24% | 2.49% | 0.01% | 7.00% | 0.02% |
| KeyCorp | KEY | 0.04% | 5.13% | 0.00% | -1.50% | 0.00% |
| Fox Corp | FOXA | 0.03% | 0.95% | 0.00% | 8.50% | 0.00% |
| Fox Corp | FOX | n/a | 1.02% | n/a | n/a | n/a |
| State Street Corp | STT | 0.06% | 3.40% | 0.00% | 7.50% | 0.00% |
| Norwegian Cruise Line Holdings Ltd | NCLH | n/a | n/a | n/a | n/a | n/a |
| US Bancorp | USB | 0.14% | 4.74% | 0.01% | 4.00% | 0.01% |
| A O Smith Corp | AOS | 0.02% | 2.08% | 0.00% | 9.00% | 0.00% |
| Gen Digital Inc | GEN | 0.03% | 1.88% | 0.00% | 10.50% | 0.00% |
| T Rowe Price Group Inc | TROW | 0.04% | 5.53% | 0.00% | 5.50% | 0.00% |
| Waste Management Inc | WM | 0.20% | 1.43% | 0.00% | 8.50% | 0.02% |
| Constellation Brands Inc | STZ | 0.07% | 2.20% | 0.00% | 7.50% | 0.01% |
| Invesco Ltd | IVZ | 0.01% | 5.41% | 0.00% | 10.50% | 0.00% |
| Intuit Inc | INTU | 0.37% | 0.68% | 0.00% | 13.50% | 0.05% |
| Morgan Stanley | MS | 0.40% | 3.17% | 0.01% | 13.50% | 0.05% |
| Microchip Technology Inc | MCHP | 0.06% | 3.76% | 0.00% | -0.50% | 0.00% |
| Crowdstrike Holdings Inc | CRWD | n/a | n/a | n/a | n/a | n/a |
| Chubb Ltd | CB | 0.26% | 1.21% | 0.00% | 11.00% | 0.03% |
| Hologic Inc | HOLX | 0.03% | n/a | n/a | 2.00% | 0.00% |
| Citizens Financial Group Inc | CFG | 0.04% | 4.10% | 0.00% | 5.50% | 0.00% |
| Jabil Inc | JBL | 0.03% | 0.24% | 0.00% | 11.50% | 0.00% |

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VL & BLOOMBERG GROWTH RATES

| | |
|---|---|
| [1] Cap. Weighted Estimate of the S&P 500 Dividend Yield | 1.40% |
| [2] Cap. Weighted Estimate of the S&P 500 Growth Rate | 13.42% |
| [3] Cap. Weighted S&P 500 Estimated Required Market Return | 14.92% |

STANDARD AND POOR'S 500 INDEX

| | | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|
| Name | Ticker | Weight In Index | Estimated Dividend Yield | Cap-Weighted Dividend Yield | Value Line Long-Term Growth Estimate | Cap. Weighted Long-Term Growth |
| O'Reilly Automotive Inc | ORLY | 0.17% | n/a | n/a | 10.50% | 0.02% |
| Allstate Corp/The | ALL | 0.12% | 1.93% | 0.00% | 29.00% | 0.03% |
| Equity Residential | EQR | 0.06% | 3.87% | 0.00% | -3.50% | 0.00% |
| Keurig Dr Pepper Inc | KDP | 0.10% | 2.69% | 0.00% | 9.50% | 0.01% |
| Host Hotels & Resorts Inc | HST | 0.02% | 5.63% | 0.00% | 11.50% | 0.00% |
| Incyte Corp | INCY | 0.02% | n/a | n/a | 33.50% | 0.01% |
| Simon Property Group Inc | SPG | 0.12% | 5.06% | 0.01% | 3.50% | 0.00% |
| Eastman Chemical Co | EMN | 0.02% | 3.77% | 0.00% | 3.50% | 0.00% |
| AvalonBay Communities Inc | AVB | 0.07% | 3.26% | 0.00% | 6.00% | 0.00% |
| Prudential Financial Inc | PRU | 0.08% | 4.84% | 0.00% | 4.00% | 0.00% |
| United Parcel Service Inc | UPS | 0.17% | 5.96% | 0.01% | 2.50% | 0.00% |
| Walgreens Boots Alliance Inc | WBA | 0.02% | n/a | n/a | -11.00% | 0.00% |
| STERIS PLC | STE | 0.05% | 1.01% | 0.00% | 8.00% | 0.00% |
| McKesson Corp | MCK | 0.18% | 0.42% | 0.00% | 10.00% | 0.02% |
| Lockheed Martin Corp | LMT | 0.22% | 2.95% | 0.01% | 12.00% | 0.03% |
| Cencora Inc | COR | 0.11% | 0.79% | 0.00% | 6.50% | 0.01% |
| Capital One Financial Corp | COF | 0.15% | 1.34% | 0.00% | 2.50% | 0.00% |
| The Campbell's Company | CPB | 0.03% | 3.91% | 0.00% | 7.00% | 0.00% |
| Waters Corp | WAT | 0.05% | n/a | n/a | 6.50% | 0.00% |
| Nordson Corp | NDSN | 0.02% | 1.55% | 0.00% | 8.50% | 0.00% |
| Dollar Tree Inc | DLTR | 0.03% | n/a | n/a | 20.00% | 0.01% |
| Darden Restaurants Inc | DRI | 0.05% | 2.70% | 0.00% | 10.50% | 0.01% |
| Evergy Inc | EVRG | 0.03% | 3.87% | 0.00% | 7.50% | 0.00% |
| Match Group Inc | MTCH | 0.02% | 2.44% | 0.00% | 11.00% | 0.00% |
| NVR Inc | NVR | 0.05% | n/a | n/a | 1.50% | 0.00% |
| NetApp Inc | NTAP | 0.04% | 2.37% | 0.00% | 9.00% | 0.00% |
| Old Dominion Freight Line Inc | ODFL | 0.07% | 0.68% | 0.00% | 7.00% | 0.01% |
| DaVita Inc | DVA | 0.03% | n/a | n/a | 10.50% | 0.00% |
| Hartford Insurance Group Inc/The | HIG | 0.08% | 1.68% | 0.00% | 7.00% | 0.01% |
| Iron Mountain Inc | IRM | 0.05% | 3.65% | 0.00% | 3.50% | 0.00% |
| Estee Lauder Cos Inc/The | EL | 0.03% | 2.12% | 0.00% | 3.50% | 0.00% |
| Cadence Design Systems Inc | CDNS | 0.15% | n/a | n/a | 12.00% | 0.02% |
| Tyler Technologies Inc | TYL | 0.05% | n/a | n/a | 8.00% | 0.00% |
| Universal Health Services Inc | UHS | 0.02% | 0.43% | 0.00% | 13.00% | 0.00% |
| Skyworks Solutions Inc | SWKS | n/a | 4.33% | n/a | n/a | n/a |
| Quest Diagnostics Inc | DGX | 0.04% | 1.89% | 0.00% | 3.50% | 0.00% |
| Rockwell Automation Inc | ROK | 0.06% | 2.03% | 0.00% | 8.00% | 0.00% |
| Kraft Heinz Co/The | KHC | 0.08% | 5.26% | 0.00% | 4.50% | 0.00% |
| American Tower Corp | AMT | 0.22% | 3.13% | 0.01% | 11.00% | 0.02% |
| Regeneron Pharmaceuticals Inc | REGN | 0.15% | 0.56% | 0.00% | 2.00% | 0.00% |
| Amazon.com Inc | AMZN | 4.30% | n/a | n/a | 24.50% | 1.05% |
| Jack Henry & Associates Inc | JKHY | 0.03% | 1.27% | 0.00% | 6.50% | 0.00% |
| Ralph Lauren Corp | RL | 0.02% | 1.49% | 0.00% | 12.00% | 0.00% |
| BXP Inc | BXP | 0.02% | 5.83% | 0.00% | 1.50% | 0.00% |
| Amphenol Corp | APH | 0.17% | 1.01% | 0.00% | 14.00% | 0.02% |
| Howmet Aerospace Inc | HWM | 0.11% | 0.31% | 0.00% | 12.00% | 0.01% |
| Valero Energy Corp | VLO | 0.09% | 3.42% | 0.00% | -5.00% | 0.00% |
| Synopsys Inc | SNPS | 0.14% | n/a | n/a | 12.00% | 0.02% |
| CH Robinson Worldwide Inc | CHRW | 0.03% | 2.42% | 0.00% | 5.00% | 0.00% |
| Accenture PLC | ACN | 0.42% | 1.90% | 0.01% | 12.50% | 0.05% |
| TransDigm Group Inc | TDG | 0.17% | n/a | n/a | 19.00% | 0.03% |
| Yum! Brands Inc | YUM | 0.09% | 1.80% | 0.00% | 10.00% | 0.01% |
| Prologis Inc | PLD | 0.22% | 3.61% | 0.01% | 2.50% | 0.01% |
| FirstEnergy Corp | FE | 0.05% | 4.40% | 0.00% | 5.50% | 0.00% |
| VeriSign Inc | VRSN | 0.05% | n/a | n/a | 10.50% | 0.01% |
| Quanta Services Inc | PWR | 0.08% | 0.16% | 0.00% | 17.50% | 0.01% |
| Henry Schein Inc | HSIC | 0.02% | n/a | n/a | 8.00% | 0.00% |
| Ameren Corp | AEE | 0.06% | 2.83% | 0.00% | 6.50% | 0.00% |
| ANSYS Inc | ANSS | 0.06% | n/a | n/a | 9.50% | 0.01% |
| FactSet Research Systems Inc | FDS | 0.04% | 0.92% | 0.00% | 9.00% | 0.00% |
| NVIDIA Corp | NVDA | 5.64% | 0.04% | 0.00% | 41.00% | 2.31% |
| Cognizant Technology Solutions Corp | CTSH | 0.08% | 1.62% | 0.00% | 9.00% | 0.01% |
| Intuitive Surgical Inc | ISRG | 0.38% | n/a | n/a | 14.00% | 0.05% |
| Take-Two Interactive Software Inc | TTWO | n/a | n/a | n/a | n/a | n/a |
| Republic Services Inc | RSG | 0.16% | 0.96% | 0.00% | 11.00% | 0.02% |
| eBay Inc | EBAY | 0.07% | 1.71% | 0.00% | 11.50% | 0.01% |
| Goldman Sachs Group Inc/The | GS | 0.36% | 2.20% | 0.01% | 11.50% | 0.04% |
| SBA Communications Corp | SBAC | 0.05% | 2.02% | 0.00% | 19.00% | 0.01% |
| Sempra | SRE | 0.10% | 3.62% | 0.00% | 6.00% | 0.01% |
| Moody's Corp | MCO | 0.18% | 0.81% | 0.00% | 8.50% | 0.02% |
| ON Semiconductor Corp | ON | 0.04% | n/a | n/a | 4.50% | 0.00% |
| Booking Holdings Inc | BKNG | 0.32% | 0.83% | 0.00% | 22.00% | 0.07% |
| F5 Inc | FFIV | 0.03% | n/a | n/a | 10.00% | 0.00% |
| Akamai Technologies Inc | AKAM | 0.03% | n/a | n/a | 8.00% | 0.00% |
| Charles River Laboratories International Inc | CRL | 0.02% | n/a | n/a | 4.50% | 0.00% |

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VL & BLOOMBERG GROWTH RATES

| | |
|---|---|
| [1] Cap. Weighted Estimate of the S&P 500 Dividend Yield | 1.40% |
| [2] Cap. Weighted Estimate of the S&P 500 Growth Rate | 13.42% |
| [3] Cap. Weighted S&P 500 Estimated Required Market Return | 14.92% |

STANDARD AND POOR'S 500 INDEX

| | | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|
| Name | Ticker | Weight In Index | Estimated Dividend Yield | Cap-Weighted Dividend Yield | Value Line Long-Term Growth Estimate | Cap. Weighted Long-Term Growth |
| MarketAxess Holdings Inc | MKTX | 0.02% | 1.41% | 0.00% | 10.00% | 0.00% |
| Devon Energy Corp | DVN | 0.05% | 2.57% | 0.00% | 1.50% | 0.00% |
| Bio-Techne Corp | TECH | 0.02% | 0.55% | 0.00% | 11.00% | 0.00% |
| Alphabet Inc | GOOGL | n/a | 0.52% | n/a | n/a | n/a |
| Allegion plc | ALLE | 0.02% | 1.56% | 0.00% | 7.50% | 0.00% |
| Netflix Inc | NFLX | 0.85% | n/a | n/a | 16.50% | 0.14% |
| Agilent Technologies Inc | A | 0.07% | 0.85% | 0.00% | 6.50% | 0.00% |
| Warner Bros Discovery Inc | WBD | n/a | n/a | n/a | n/a | n/a |
| Trimble Inc | TRMB | 0.03% | n/a | n/a | 5.50% | 0.00% |
| Elevance Health Inc | ELV | 0.21% | 1.57% | 0.00% | 9.50% | 0.02% |
| CME Group Inc | CME | 0.20% | 1.88% | 0.00% | 5.50% | 0.01% |
| Juniper Networks Inc | JNPR | 0.03% | 2.43% | 0.00% | 7.00% | 0.00% |
| DTE Energy Co | DTE | 0.06% | 3.15% | 0.00% | 8.50% | 0.01% |
| Nasdaq Inc | NDAQ | 0.09% | 1.27% | 0.00% | 4.50% | 0.00% |
| Philip Morris International Inc | PM | 0.53% | 3.40% | 0.02% | 5.00% | 0.03% |
| Ingersoll Rand Inc | IR | 0.07% | 0.10% | 0.00% | 10.50% | 0.01% |
| Salesforce Inc | CRM | 0.55% | 0.62% | 0.00% | 24.50% | 0.13% |
| Roper Technologies Inc | ROP | 0.13% | 0.56% | 0.00% | 9.00% | 0.01% |
| Huntington Ingalls Industries Inc | HII | 0.02% | 2.65% | 0.00% | 10.00% | 0.00% |
| MetLife Inc | MET | 0.12% | 2.72% | 0.00% | 7.50% | 0.01% |
| Tapestry Inc | TPR | 0.03% | 1.99% | 0.00% | 9.00% | 0.00% |
| CSX Corp | CSX | 0.12% | 1.77% | 0.00% | 10.00% | 0.01% |
| Edwards Lifesciences Corp | EW | 0.09% | n/a | n/a | 6.50% | 0.01% |
| Ameriprise Financial Inc | AMP | 0.10% | 1.22% | 0.00% | 10.00% | 0.01% |
| Zebra Technologies Corp | ZBRA | 0.03% | n/a | n/a | 5.50% | 0.00% |
| Zimmer Biomet Holdings Inc | ZBH | 0.05% | 0.85% | 0.00% | 6.50% | 0.00% |
| Camden Property Trust | CPT | 0.03% | 3.43% | 0.00% | -6.50% | 0.00% |
| CBRE Group Inc | CBRE | 0.08% | n/a | n/a | 6.00% | 0.01% |
| Mastercard Inc | MA | 1.06% | 0.55% | 0.01% | 14.50% | 0.15% |
| CarMax Inc | KMX | 0.03% | n/a | n/a | 3.00% | 0.00% |
| Intercontinental Exchange Inc | ICE | 0.21% | 1.11% | 0.00% | 6.50% | 0.01% |
| Fidelity National Information Services Inc | FIS | 0.08% | 2.14% | 0.00% | 4.50% | 0.00% |
| Smurfit WestRock PLC | SW | n/a | 3.82% | n/a | n/a | n/a |
| Chipotle Mexican Grill Inc | CMG | 0.15% | n/a | n/a | 20.50% | 0.03% |
| Wynn Resorts Ltd | WYNN | 0.02% | 1.20% | 0.00% | 27.00% | 0.01% |
| Live Nation Entertainment Inc | LYV | n/a | n/a | n/a | n/a | n/a |
| Assurant Inc | AIZ | 0.02% | 1.53% | 0.00% | 9.50% | 0.00% |
| NRG Energy Inc | NRG | 0.04% | 1.84% | 0.00% | 18.50% | 0.01% |
| Monster Beverage Corp | MNST | 0.12% | n/a | n/a | 11.50% | 0.01% |
| Regions Financial Corp | RF | 0.04% | 4.60% | 0.00% | 5.00% | 0.00% |
| Baker Hughes Co | BKR | 0.09% | 2.09% | 0.00% | 30.00% | 0.03% |
| Mosaic Co/The | MOS | 0.02% | 3.26% | 0.00% | -9.00% | 0.00% |
| Expedia Group Inc | EXPE | 0.04% | 0.95% | 0.00% | 39.00% | 0.02% |
| CF Industries Holdings Inc | CF | n/a | 2.56% | n/a | n/a | n/a |
| APA Corp | APA | 0.02% | 4.76% | 0.00% | 6.00% | 0.00% |
| Leidos Holdings Inc | LDOS | 0.04% | 1.19% | 0.00% | 8.00% | 0.00% |
| Alphabet Inc | GOOG | 1.83% | 0.51% | 0.01% | 13.50% | 0.25% |
| TKO Group Holdings Inc | TKO | n/a | 0.99% | n/a | n/a | n/a |
| First Solar Inc | FSLR | 0.03% | n/a | n/a | 34.50% | 0.01% |
| Discover Financial Services | DFS | 0.09% | 1.64% | 0.00% | 4.00% | 0.00% |
| Visa Inc | V | 1.29% | 0.67% | 0.01% | 13.50% | 0.17% |
| Mid-America Apartment Communities Inc | MAA | 0.04% | 3.62% | 0.00% | -13.50% | -0.01% |
| Xylem Inc/NY | XYL | 0.06% | 1.34% | 0.00% | 11.00% | 0.01% |
| Marathon Petroleum Corp | MPC | 0.10% | 2.50% | 0.00% | -6.00% | -0.01% |
| Tractor Supply Co | TSCO | 0.06% | 1.67% | 0.00% | 10.00% | 0.01% |
| Advanced Micro Devices Inc | AMD | 0.35% | n/a | n/a | 17.00% | 0.06% |
| ResMed Inc | RMD | 0.07% | 0.95% | 0.00% | 11.00% | 0.01% |
| Mettler-Toledo International Inc | MTD | 0.05% | n/a | n/a | 9.50% | 0.00% |
| VICI Properties Inc | VICI | 0.07% | 5.30% | 0.00% | 9.50% | 0.01% |
| Copart Inc | CPRT | 0.12% | n/a | n/a | 9.00% | 0.01% |
| Jacobs Solutions Inc | J | 0.03% | 1.06% | 0.00% | 11.00% | 0.00% |
| Albemarle Corp | ALB | 0.02% | 2.25% | 0.00% | -3.50% | 0.00% |
| Fortinet Inc | FTNT | 0.16% | n/a | n/a | 18.00% | 0.03% |
| Moderna Inc | MRNA | 0.02% | n/a | n/a | -16.00% | 0.00% |
| Essex Property Trust Inc | ESS | 0.04% | 3.35% | 0.00% | 3.00% | 0.00% |
| CoStar Group Inc | CSGP | 0.07% | n/a | n/a | 11.50% | 0.01% |
| Realty Income Corp | O | 0.11% | 5.55% | 0.01% | 5.00% | 0.01% |
| Westinghouse Air Brake Technologies Corp | WAB | 0.07% | 0.55% | 0.00% | 16.00% | 0.01% |
| Palantir Technologies Inc | PLTR | n/a | n/a | n/a | n/a | n/a |
| Pool Corp | POOL | 0.03% | 1.51% | 0.00% | 2.50% | 0.00% |
| Western Digital Corp | WDC | 0.03% | n/a | n/a | 13.50% | 0.00% |
| PepsiCo Inc | PEP | 0.44% | 3.61% | 0.02% | 7.50% | 0.03% |
| TE Connectivity PLC | TEL | 0.09% | 2.01% | 0.00% | 10.50% | 0.01% |
| Diamondback Energy Inc | FANG | 0.10% | 2.50% | 0.00% | 2.50% | 0.00% |
| Palo Alto Networks Inc | PANW | n/a | n/a | n/a | n/a | n/a |

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VL & BLOOMBERG GROWTH RATES

| | |
|---|---|
| [1] Cap. Weighted Estimate of the S&P 500 Dividend Yield | 1.40% |
| [2] Cap. Weighted Estimate of the S&P 500 Growth Rate | 13.42% |
| [3] Cap. Weighted S&P 500 Estimated Required Market Return | 14.92% |

STANDARD AND POOR'S 500 INDEX

| | | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|
| Name | Ticker | Weight In Index | Estimated Dividend Yield | Cap-Weighted Dividend Yield | Value Line Long-Term Growth Estimate | Cap. Weighted Long-Term Growth |
| ServiceNow Inc | NOW | 0.35% | n/a | n/a | 32.50% | 0.11% |
| Church & Dwight Co Inc | CHD | 0.06% | 1.07% | 0.00% | 6.00% | 0.00% |
| Federal Realty Investment Trust | FRT | 0.02% | 4.50% | 0.00% | 2.50% | 0.00% |
| MGM Resorts International | MGM | 0.02% | n/a | n/a | 25.00% | 0.00% |
| American Electric Power Co Inc | AEP | 0.12% | 3.40% | 0.00% | 6.50% | 0.01% |
| Invitation Homes Inc | INVH | 0.05% | 3.33% | 0.00% | 7.00% | 0.00% |
| PTC Inc | PTC | 0.04% | n/a | n/a | 29.00% | 0.01% |
| JB Hunt Transport Services Inc | JBHT | 0.03% | 1.19% | 0.00% | 6.00% | 0.00% |
| Lam Research Corp | LRCX | 0.20% | 1.27% | 0.00% | 11.00% | 0.02% |
| Mohawk Industries Inc | MHK | 0.02% | n/a | n/a | 2.00% | 0.00% |
| GE HealthCare Technologies Inc | GEHC | n/a | 0.17% | n/a | n/a | n/a |
| Pentair PLC | PNR | 0.03% | 1.14% | 0.00% | 12.00% | 0.00% |
| Vertex Pharmaceuticals Inc | VRTX | 0.27% | n/a | n/a | 10.00% | 0.03% |
| Amcor PLC | AMCR | 0.03% | 5.26% | 0.00% | 11.50% | 0.00% |
| Meta Platforms Inc | META | 2.69% | 0.36% | 0.01% | 19.00% | 0.51% |
| T-Mobile US Inc | TMUS | 0.65% | 1.32% | 0.01% | 18.00% | 0.12% |
| United Rentals Inc | URI | 0.09% | 1.14% | 0.00% | 9.50% | 0.01% |
| Alexandria Real Estate Equities Inc | ARE | 0.03% | 5.71% | 0.00% | 8.50% | 0.00% |
| Honeywell International Inc | HON | 0.29% | 2.13% | 0.01% | 9.50% | 0.03% |
| Delta Air Lines Inc | DAL | 0.06% | 1.38% | 0.00% | 28.00% | 0.02% |
| United Airlines Holdings Inc | UAL | n/a | n/a | n/a | n/a | n/a |
| Seagate Technology Holdings PLC | STX | 0.04% | 3.39% | 0.00% | 22.50% | 0.01% |
| News Corp | NWS | n/a | 0.66% | n/a | n/a | n/a |
| Centene Corp | CNC | 0.06% | n/a | n/a | 9.50% | 0.01% |
| Apollo Global Management Inc | APO | 0.17% | 1.35% | 0.00% | 23.50% | 0.04% |
| Martin Marietta Materials Inc | MLM | 0.06% | 0.66% | 0.00% | 10.50% | 0.01% |
| Teradyne Inc | TER | 0.03% | 0.58% | 0.00% | 15.00% | 0.00% |
| PayPal Holdings Inc | PYPL | 0.14% | n/a | n/a | 11.50% | 0.02% |
| Tesla Inc | TSLA | 1.78% | n/a | n/a | 16.50% | 0.29% |
| Blackrock Inc | BLK | 0.31% | 2.20% | 0.01% | 9.50% | 0.03% |
| KKR & Co Inc | KKR | 0.22% | 0.61% | 0.00% | 5.00% | 0.01% |
| Arch Capital Group Ltd | ACGL | 0.08% | n/a | n/a | 15.00% | 0.01% |
| Dow Inc | DOW | 0.05% | 8.02% | 0.00% | 6.50% | 0.00% |
| Everest Group Ltd | EG | 0.03% | 2.20% | 0.00% | 14.50% | 0.00% |
| Teledyne Technologies Inc | TDY | 0.05% | n/a | n/a | 8.00% | 0.00% |
| Domino's Pizza Inc | DPZ | 0.03% | 1.51% | 0.00% | 12.50% | 0.00% |
| GE Vernova Inc | GEV | n/a | 0.33% | n/a | n/a | n/a |
| News Corp | NWSA | 0.02% | 0.73% | 0.00% | 14.50% | 0.00% |
| Exelon Corp | EXC | n/a | 3.47% | n/a | n/a | n/a |
| Global Payments Inc | GPN | 0.05% | 1.02% | 0.00% | 13.50% | 0.01% |
| Crown Castle Inc | CCI | n/a | 6.01% | n/a | n/a | n/a |
| Align Technology Inc | ALGN | 0.02% | n/a | n/a | 17.00% | 0.00% |
| Kenvue Inc | KVUE | n/a | 3.42% | n/a | n/a | n/a |
| Targa Resources Corp | TRGP | 0.09% | 1.50% | 0.00% | 22.00% | 0.02% |
| Bunge Global SA | BG | 0.02% | 3.56% | 0.00% | 0.00% | 0.00% |
| LKQ Corp | LKQ | 0.02% | 2.82% | 0.00% | 7.00% | 0.00% |
| Deckers Outdoor Corp | DECK | 0.04% | n/a | n/a | 16.00% | 0.01% |
| Workday Inc | WDAY | 0.11% | n/a | n/a | 12.00% | 0.01% |
| Zoetis Inc | ZTS | 0.16% | 1.21% | 0.00% | 7.50% | 0.01% |
| Equinix Inc | EQIX | 0.17% | 2.30% | 0.00% | 15.00% | 0.03% |
| Digital Realty Trust Inc | DLR | 0.10% | 3.41% | 0.00% | 8.00% | 0.01% |
| Molina Healthcare Inc | MOH | 0.04% | n/a | n/a | 10.50% | 0.00% |
| Las Vegas Sands Corp | LVS | n/a | 2.59% | n/a | n/a | n/a |

Notes:
[1] Equals sum of col. [6]
[2] Equals sum of col. [9]
[3] Equals ([1] x (1 + (0.5 x [2]))) + [2]
[4] Equals weight in S&P 500 based on market capitalization
[5] Source: Bloomberg Professional
[6] Equals [4] x [5]
[7] Source: Value Line
[8] Equals [4] x [7]

KROLL HISTORICAL MARKET RISK PREMIUM ESTIMATE

| | |
|---|---|
| [1] Historical Equity Risk Premium | 7.31% |

Notes:
[1] Source: Kroll Cost of Capital Navigator, United States Long-Horizon Equity Risk Premia, 1926-2024

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

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

| Company | Ticker | [1] Current 30-day average of 30-year U.S. Treasury bond yield | [2] Beta (β) | [3] Market Return (Rm) | [4] Market Risk Premium (Rm − Rf) | [5] CAPM ROE (K) |
|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | 4.61% | 0.95 | 14.92% | 10.31% | 14.40% |
| Ameren Corporation | AEE | 4.61% | 0.90 | 14.92% | 10.31% | 13.89% |
| American Electric Power Company, Inc. | AEP | 4.61% | 0.85 | 14.92% | 10.31% | 13.37% |
| Duke Energy Corporation | DUK | 4.61% | 0.90 | 14.92% | 10.31% | 13.89% |
| Entergy Corporation | ETR | 4.61% | 1.00 | 14.92% | 10.31% | 14.92% |
| Evergy, Inc. | EVRG | 4.61% | 0.95 | 14.92% | 10.31% | 14.40% |
| FirstEnergy Corp | FE | 4.61% | 0.90 | 14.92% | 10.31% | 13.89% |
| IDACORP, Inc. | IDA | 4.61% | 0.85 | 14.92% | 10.31% | 13.37% |
| NextEra Energy, Inc. | NEE | 4.61% | 1.05 | 14.92% | 10.31% | 15.43% |
| OGE Energy Corp. | OGE | 4.61% | 1.05 | 14.92% | 10.31% | 15.43% |
| TXNM Energy, Inc. | TXNM | 4.61% | 0.90 | 14.92% | 10.31% | 13.89% |
| Portland General Electric Company | POR | 4.61% | 0.95 | 14.92% | 10.31% | 14.40% |
| PPL Corporation | PPL | 4.61% | 1.10 | 14.92% | 10.31% | 15.95% |
| Southern Company | SO | 4.61% | 0.95 | 14.92% | 10.31% | 14.40% |
| Xcel Energy Inc. | XEL | 4.61% | 0.85 | 14.92% | 10.31% | 13.37% |
| Mean | | | | | | 14.33% |

Notes:
[1] Source: Bloomberg Professional, as of March 31, 2025
[2] Source: Value Line
[3] Source: Schedule 3.2 - SP 500 MRP
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

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

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

| Company | Ticker | [1] Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026) | [2] Beta (β) | [3] Market Return (Rm) | [4] Market Risk Premium (Rm − Rf) | [5] CAPM ROE (K) |
|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | 4.52% | 0.95 | 14.92% | 10.40% | 14.40% |
| Ameren Corporation | AEE | 4.52% | 0.90 | 14.92% | 10.40% | 13.88% |
| American Electric Power Company, Inc. | AEP | 4.52% | 0.85 | 14.92% | 10.40% | 13.36% |
| Duke Energy Corporation | DUK | 4.52% | 0.90 | 14.92% | 10.40% | 13.88% |
| Entergy Corporation | ETR | 4.52% | 1.00 | 14.92% | 10.40% | 14.92% |
| Evergy, Inc. | EVRG | 4.52% | 0.95 | 14.92% | 10.40% | 14.40% |
| FirstEnergy Corp | FE | 4.52% | 0.90 | 14.92% | 10.40% | 13.88% |
| IDACORP, Inc. | IDA | 4.52% | 0.85 | 14.92% | 10.40% | 13.36% |
| NextEra Energy, Inc. | NEE | 4.52% | 1.05 | 14.92% | 10.40% | 15.44% |
| OGE Energy Corp. | OGE | 4.52% | 1.05 | 14.92% | 10.40% | 15.44% |
| TXNM Energy, Inc. | TXNM | 4.52% | 0.90 | 14.92% | 10.40% | 13.88% |
| Portland General Electric Company | POR | 4.52% | 0.95 | 14.92% | 10.40% | 14.40% |
| PPL Corporation | PPL | 4.52% | 1.10 | 14.92% | 10.40% | 15.96% |
| Southern Company | SO | 4.52% | 0.95 | 14.92% | 10.40% | 14.40% |
| Xcel Energy Inc. | XEL | 4.52% | 0.85 | 14.92% | 10.40% | 13.36% |
| Mean | | | | | | 14.33% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025 at 2
[2] Source: Value Line
[3] Source: Schedule 3.2 - SP 500 MRP
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

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

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Projected 30-year U.S. Treasury bond yield (2026 - 2030) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.30% | 0.95 | 14.92% | 10.62% | 14.39% |
| Ameren Corporation | AEE | 4.30% | 0.90 | 14.92% | 10.62% | 13.85% |
| American Electric Power Company, Inc. | AEP | 4.30% | 0.85 | 14.92% | 10.62% | 13.32% |
| Duke Energy Corporation | DUK | 4.30% | 0.90 | 14.92% | 10.62% | 13.85% |
| Entergy Corporation | ETR | 4.30% | 1.00 | 14.92% | 10.62% | 14.92% |
| Evergy, Inc. | EVRG | 4.30% | 0.95 | 14.92% | 10.62% | 14.39% |
| FirstEnergy Corp | FE | 4.30% | 0.90 | 14.92% | 10.62% | 13.85% |
| IDACORP, Inc. | IDA | 4.30% | 0.85 | 14.92% | 10.62% | 13.32% |
| NextEra Energy, Inc. | NEE | 4.30% | 1.05 | 14.92% | 10.62% | 15.45% |
| OGE Energy Corp. | OGE | 4.30% | 1.05 | 14.92% | 10.62% | 15.45% |
| TXNM Energy, Inc. | TXNM | 4.30% | 0.90 | 14.92% | 10.62% | 13.85% |
| Portland General Electric Company | POR | 4.30% | 0.95 | 14.92% | 10.62% | 14.39% |
| PPL Corporation | PPL | 4.30% | 1.10 | 14.92% | 10.62% | 15.98% |
| Southern Company | SO | 4.30% | 0.95 | 14.92% | 10.62% | 14.39% |
| Xcel Energy Inc. | XEL | 4.30% | 0.85 | 14.92% | 10.62% | 13.32% |
| Mean | | | | | | 14.31% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024 at 14
[2] Source: Value Line
[3] Source: Schedule 3.2 - SP 500 MRP
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG 5-YEAR BETA

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Current 30-day average of 30-year U.S. Treasury bond yield | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.61% | 0.67 | 14.92% | 10.31% | 11.49% |
| Ameren Corporation | AEE | 4.61% | 0.66 | 14.92% | 10.31% | 11.45% |
| American Electric Power Company, Inc. | AEP | 4.61% | 0.60 | 14.92% | 10.31% | 10.77% |
| Duke Energy Corporation | DUK | 4.61% | 0.56 | 14.92% | 10.31% | 10.40% |
| Entergy Corporation | ETR | 4.61% | 0.70 | 14.92% | 10.31% | 11.85% |
| Evergy, Inc. | EVRG | 4.61% | 0.63 | 14.92% | 10.31% | 11.14% |
| FirstEnergy Corp | FE | 4.61% | 0.67 | 14.92% | 10.31% | 11.51% |
| IDACORP, Inc. | IDA | 4.61% | 0.65 | 14.92% | 10.31% | 11.27% |
| NextEra Energy, Inc. | NEE | 4.61% | 0.80 | 14.92% | 10.31% | 12.81% |
| OGE Energy Corp. | OGE | 4.61% | 0.77 | 14.92% | 10.31% | 12.53% |
| TXNM Energy, Inc. | TXNM | 4.61% | 0.51 | 14.92% | 10.31% | 9.89% |
| Portland General Electric Company | POR | 4.61% | 0.67 | 14.92% | 10.31% | 11.51% |
| PPL Corporation | PPL | 4.61% | 0.74 | 14.92% | 10.31% | 12.21% |
| Southern Company | SO | 4.61% | 0.64 | 14.92% | 10.31% | 11.20% |
| Xcel Energy Inc. | XEL | 4.61% | 0.61 | 14.92% | 10.31% | 10.93% |
| Mean | | | | | | 11.40% |

Notes:
[1] Source: Bloomberg Professional, as of March 31, 2025
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] Source: Schedule 3.2 - SP 500 MRP
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG 5-YEAR BETA

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.52% | 0.67 | 14.92% | 10.40% | 11.46% |
| Ameren Corporation | AEE | 4.52% | 0.66 | 14.92% | 10.40% | 11.42% |
| American Electric Power Company, Inc. | AEP | 4.52% | 0.60 | 14.92% | 10.40% | 10.73% |
| Duke Energy Corporation | DUK | 4.52% | 0.56 | 14.92% | 10.40% | 10.36% |
| Entergy Corporation | ETR | 4.52% | 0.70 | 14.92% | 10.40% | 11.82% |
| Evergy, Inc. | EVRG | 4.52% | 0.63 | 14.92% | 10.40% | 11.11% |
| FirstEnergy Corp | FE | 4.52% | 0.67 | 14.92% | 10.40% | 11.48% |
| IDACORP, Inc. | IDA | 4.52% | 0.65 | 14.92% | 10.40% | 11.23% |
| NextEra Energy, Inc. | NEE | 4.52% | 0.80 | 14.92% | 10.40% | 12.79% |
| OGE Energy Corp. | OGE | 4.52% | 0.77 | 14.92% | 10.40% | 12.51% |
| TXNM Energy, Inc. | TXNM | 4.52% | 0.51 | 14.92% | 10.40% | 9.85% |
| Portland General Electric Company | POR | 4.52% | 0.67 | 14.92% | 10.40% | 11.48% |
| PPL Corporation | PPL | 4.52% | 0.74 | 14.92% | 10.40% | 12.19% |
| Southern Company | SO | 4.52% | 0.64 | 14.92% | 10.40% | 11.17% |
| Xcel Energy Inc. | XEL | 4.52% | 0.61 | 14.92% | 10.40% | 10.90% |
| Mean | | | | | | 11.37% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025 at 2
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] Source: Schedule 3.2 - SP 500 MRP
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG 5-YEAR BETA

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Projected 30-year U.S. Treasury bond yield (2026 - 2030) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.30% | 0.67 | 14.92% | 10.62% | 11.38% |
| Ameren Corporation | AEE | 4.30% | 0.66 | 14.92% | 10.62% | 11.34% |
| American Electric Power Company, Inc. | AEP | 4.30% | 0.60 | 14.92% | 10.62% | 10.64% |
| Duke Energy Corporation | DUK | 4.30% | 0.56 | 14.92% | 10.62% | 10.27% |
| Entergy Corporation | ETR | 4.30% | 0.70 | 14.92% | 10.62% | 11.76% |
| Evergy, Inc. | EVRG | 4.30% | 0.63 | 14.92% | 10.62% | 11.03% |
| FirstEnergy Corp | FE | 4.30% | 0.67 | 14.92% | 10.62% | 11.41% |
| IDACORP, Inc. | IDA | 4.30% | 0.65 | 14.92% | 10.62% | 11.16% |
| NextEra Energy, Inc. | NEE | 4.30% | 0.80 | 14.92% | 10.62% | 12.74% |
| OGE Energy Corp. | OGE | 4.30% | 0.77 | 14.92% | 10.62% | 12.46% |
| TXNM Energy, Inc. | TXNM | 4.30% | 0.51 | 14.92% | 10.62% | 9.74% |
| Portland General Electric Company | POR | 4.30% | 0.67 | 14.92% | 10.62% | 11.41% |
| PPL Corporation | PPL | 4.30% | 0.74 | 14.92% | 10.62% | 12.13% |
| Southern Company | SO | 4.30% | 0.64 | 14.92% | 10.62% | 11.09% |
| Xcel Energy Inc. | XEL | 4.30% | 0.61 | 14.92% | 10.62% | 10.81% |
| Mean | | | | | | 11.29% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024 at 14
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] Source: Schedule 3.2 - SP 500 MRP
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG 10-YEAR BETA

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

| Company | Ticker | [1] Current 30-day average of 30-year U.S. Treasury bond yield | [2] Beta (β) | [3] Market Return (Rm) | [4] Market Risk Premium (Rm − Rf) | [5] CAPM ROE (K) |
|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | 4.61% | 0.77 | 14.92% | 10.31% | 12.54% |
| Ameren Corporation | AEE | 4.61% | 0.73 | 14.92% | 10.31% | 12.17% |
| American Electric Power Company, Inc. | AEP | 4.61% | 0.73 | 14.92% | 10.31% | 12.15% |
| Duke Energy Corporation | DUK | 4.61% | 0.71 | 14.92% | 10.31% | 11.88% |
| Entergy Corporation | ETR | 4.61% | 0.84 | 14.92% | 10.31% | 13.26% |
| Evergy, Inc. | EVRG | 4.61% | 0.77 | 14.92% | 10.31% | 12.54% |
| FirstEnergy Corp | FE | 4.61% | 0.77 | 14.92% | 10.31% | 12.58% |
| IDACORP, Inc. | IDA | 4.61% | 0.76 | 14.92% | 10.31% | 12.49% |
| NextEra Energy, Inc. | NEE | 4.61% | 0.79 | 14.92% | 10.31% | 12.80% |
| OGE Energy Corp. | OGE | 4.61% | 0.90 | 14.92% | 10.31% | 13.86% |
| TXNM Energy, Inc. | TXNM | 4.61% | 0.81 | 14.92% | 10.31% | 12.93% |
| Portland General Electric Company | POR | 4.61% | 0.77 | 14.92% | 10.31% | 12.50% |
| PPL Corporation | PPL | 4.61% | 0.92 | 14.92% | 10.31% | 14.06% |
| Southern Company | SO | 4.61% | 0.76 | 14.92% | 10.31% | 12.45% |
| Xcel Energy Inc. | XEL | 4.61% | 0.72 | 14.92% | 10.31% | 11.99% |
| Mean | | | | | | 12.68% |

Notes:
[1] Source: Bloomberg Professional, as of March 31, 2025
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] Source: Schedule 3.2 - SP 500 MRP
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG 10-YEAR BETA

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

| Company | Ticker | [1] Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026) | [2] Beta (β) | [3] Market Return (Rm) | [4] Market Risk Premium (Rm − Rf) | [5] CAPM ROE (K) |
|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | 4.52% | 0.77 | 14.92% | 10.40% | 12.52% |
| Ameren Corporation | AEE | 4.52% | 0.73 | 14.92% | 10.40% | 12.15% |
| American Electric Power Company, Inc. | AEP | 4.52% | 0.73 | 14.92% | 10.40% | 12.13% |
| Duke Energy Corporation | DUK | 4.52% | 0.71 | 14.92% | 10.40% | 11.85% |
| Entergy Corporation | ETR | 4.52% | 0.84 | 14.92% | 10.40% | 13.24% |
| Evergy, Inc. | EVRG | 4.52% | 0.77 | 14.92% | 10.40% | 12.52% |
| FirstEnergy Corp | FE | 4.52% | 0.77 | 14.92% | 10.40% | 12.56% |
| IDACORP, Inc. | IDA | 4.52% | 0.76 | 14.92% | 10.40% | 12.47% |
| NextEra Energy, Inc. | NEE | 4.52% | 0.79 | 14.92% | 10.40% | 12.78% |
| OGE Energy Corp. | OGE | 4.52% | 0.90 | 14.92% | 10.40% | 13.85% |
| TXNM Energy, Inc. | TXNM | 4.52% | 0.81 | 14.92% | 10.40% | 12.91% |
| Portland General Electric Company | POR | 4.52% | 0.77 | 14.92% | 10.40% | 12.48% |
| PPL Corporation | PPL | 4.52% | 0.92 | 14.92% | 10.40% | 14.06% |
| Southern Company | SO | 4.52% | 0.76 | 14.92% | 10.40% | 12.43% |
| Xcel Energy Inc. | XEL | 4.52% | 0.72 | 14.92% | 10.40% | 11.96% |
| Mean | | | | | | 12.66% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025 at 2
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] Source: Schedule 3.2 - SP 500 MRP
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG 10-YEAR BETA

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Projected 30-year U.S. Treasury bond yield (2026 - 2030) | Beta (β) | Market Return (Rm) | Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.30% | 0.77 | 14.92% | 10.62% | 12.46% |
| Ameren Corporation | AEE | 4.30% | 0.73 | 14.92% | 10.62% | 12.09% |
| American Electric Power Company, Inc. | AEP | 4.30% | 0.73 | 14.92% | 10.62% | 12.07% |
| Duke Energy Corporation | DUK | 4.30% | 0.71 | 14.92% | 10.62% | 11.79% |
| Entergy Corporation | ETR | 4.30% | 0.84 | 14.92% | 10.62% | 13.21% |
| Evergy, Inc. | EVRG | 4.30% | 0.77 | 14.92% | 10.62% | 12.47% |
| FirstEnergy Corp | FE | 4.30% | 0.77 | 14.92% | 10.62% | 12.51% |
| IDACORP, Inc. | IDA | 4.30% | 0.76 | 14.92% | 10.62% | 12.42% |
| NextEra Energy, Inc. | NEE | 4.30% | 0.79 | 14.92% | 10.62% | 12.74% |
| OGE Energy Corp. | OGE | 4.30% | 0.90 | 14.92% | 10.62% | 13.83% |
| TXNM Energy, Inc. | TXNM | 4.30% | 0.81 | 14.92% | 10.62% | 12.87% |
| Portland General Electric Company | POR | 4.30% | 0.77 | 14.92% | 10.62% | 12.43% |
| PPL Corporation | PPL | 4.30% | 0.92 | 14.92% | 10.62% | 14.04% |
| Southern Company | SO | 4.30% | 0.76 | 14.92% | 10.62% | 12.37% |
| Xcel Energy Inc. | XEL | 4.30% | 0.72 | 14.92% | 10.62% | 11.90% |
| Mean | | | | | | 12.61% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024 at 14
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] Source: Schedule 3.2 - SP 500 MRP
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

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

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Current 30-day average of 30-year U.S. Treasury bond yield | Beta (β) | Market Return (Rm) | Historical Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.61% | 0.95 | n/a | 7.31% | 11.55% |
| Ameren Corporation | AEE | 4.61% | 0.90 | n/a | 7.31% | 11.19% |
| American Electric Power Company, Inc. | AEP | 4.61% | 0.85 | n/a | 7.31% | 10.82% |
| Duke Energy Corporation | DUK | 4.61% | 0.90 | n/a | 7.31% | 11.19% |
| Entergy Corporation | ETR | 4.61% | 1.00 | n/a | 7.31% | 11.92% |
| Evergy, Inc. | EVRG | 4.61% | 0.95 | n/a | 7.31% | 11.55% |
| FirstEnergy Corp | FE | 4.61% | 0.90 | n/a | 7.31% | 11.19% |
| IDACORP, Inc. | IDA | 4.61% | 0.85 | n/a | 7.31% | 10.82% |
| NextEra Energy, Inc. | NEE | 4.61% | 1.05 | n/a | 7.31% | 12.28% |
| OGE Energy Corp. | OGE | 4.61% | 1.05 | n/a | 7.31% | 12.28% |
| TXNM Energy, Inc. | TXNM | 4.61% | 0.90 | n/a | 7.31% | 11.19% |
| Portland General Electric Company | POR | 4.61% | 0.95 | n/a | 7.31% | 11.55% |
| PPL Corporation | PPL | 4.61% | 1.10 | n/a | 7.31% | 12.65% |
| Southern Company | SO | 4.61% | 0.95 | n/a | 7.31% | 11.55% |
| Xcel Energy Inc. | XEL | 4.61% | 0.85 | n/a | 7.31% | 10.82% |
| Mean | | | | | | 11.51% |

Notes:
[1] Source: Bloomberg Professional, as of March 31, 2025
[2] Source: Value Line
[3] n/a
[4] Source: Schedule 3.3 - Historical MRP
[5] Equals [1] + [2] x [4]

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

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026) | Beta (β) | Market Return (Rm) | Historical Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.52% | 0.95 | n/a | 7.31% | 11.46% |
| Ameren Corporation | AEE | 4.52% | 0.90 | n/a | 7.31% | 11.10% |
| American Electric Power Company, Inc. | AEP | 4.52% | 0.85 | n/a | 7.31% | 10.73% |
| Duke Energy Corporation | DUK | 4.52% | 0.90 | n/a | 7.31% | 11.10% |
| Entergy Corporation | ETR | 4.52% | 1.00 | n/a | 7.31% | 11.83% |
| Evergy, Inc. | EVRG | 4.52% | 0.95 | n/a | 7.31% | 11.46% |
| FirstEnergy Corp | FE | 4.52% | 0.90 | n/a | 7.31% | 11.10% |
| IDACORP, Inc. | IDA | 4.52% | 0.85 | n/a | 7.31% | 10.73% |
| NextEra Energy, Inc. | NEE | 4.52% | 1.05 | n/a | 7.31% | 12.20% |
| OGE Energy Corp. | OGE | 4.52% | 1.05 | n/a | 7.31% | 12.20% |
| TXNM Energy, Inc. | TXNM | 4.52% | 0.90 | n/a | 7.31% | 11.10% |
| Portland General Electric Company | POR | 4.52% | 0.95 | n/a | 7.31% | 11.46% |
| PPL Corporation | PPL | 4.52% | 1.10 | n/a | 7.31% | 12.56% |
| Southern Company | SO | 4.52% | 0.95 | n/a | 7.31% | 11.46% |
| Xcel Energy Inc. | XEL | 4.52% | 0.85 | n/a | 7.31% | 10.73% |
| Mean | | | | | | 11.42% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025 at 2
[2] Source: Value Line
[3] n/a
[4] Source: Schedule 3.3 - Historical MRP
[5] Equals [1] + [2] x [4]

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

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

| Company | Ticker | [1] Projected 30-year U.S. Treasury bond yield (2026 - 2030) | [2] Beta (β) | [3] Market Return (Rm) | [4] Historical Market Risk Premium (Rm − Rf) | [5] CAPM ROE (K) |
|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | 4.30% | 0.95 | n/a | 7.31% | 11.24% |
| Ameren Corporation | AEE | 4.30% | 0.90 | n/a | 7.31% | 10.88% |
| American Electric Power Company, Inc. | AEP | 4.30% | 0.85 | n/a | 7.31% | 10.51% |
| Duke Energy Corporation | DUK | 4.30% | 0.90 | n/a | 7.31% | 10.88% |
| Entergy Corporation | ETR | 4.30% | 1.00 | n/a | 7.31% | 11.61% |
| Evergy, Inc. | EVRG | 4.30% | 0.95 | n/a | 7.31% | 11.24% |
| FirstEnergy Corp | FE | 4.30% | 0.90 | n/a | 7.31% | 10.88% |
| IDACORP, Inc. | IDA | 4.30% | 0.85 | n/a | 7.31% | 10.51% |
| NextEra Energy, Inc. | NEE | 4.30% | 1.05 | n/a | 7.31% | 11.98% |
| OGE Energy Corp. | OGE | 4.30% | 1.05 | n/a | 7.31% | 11.98% |
| TXNM Energy, Inc. | TXNM | 4.30% | 0.90 | n/a | 7.31% | 10.88% |
| Portland General Electric Company | POR | 4.30% | 0.95 | n/a | 7.31% | 11.24% |
| PPL Corporation | PPL | 4.30% | 1.10 | n/a | 7.31% | 12.34% |
| Southern Company | SO | 4.30% | 0.95 | n/a | 7.31% | 11.24% |
| Xcel Energy Inc. | XEL | 4.30% | 0.85 | n/a | 7.31% | 10.51% |
| Mean | | | | | | 11.20% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024 at 14
[2] Source: Value Line
[3] n/a
[4] Source: Schedule 3.3 - Historical MRP
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG 5-YEAR BETA

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

| Company | Ticker | [1] Current 30-day average of 30-year U.S. Treasury bond yield | [2] Beta (β) | [3] Market Return (Rm) | [4] Historical Market Risk Premium (Rm − Rf) | [5] CAPM ROE (K) |
|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | 4.61% | 0.67 | n/a | 7.31% | 9.49% |
| Ameren Corporation | AEE | 4.61% | 0.66 | n/a | 7.31% | 9.46% |
| American Electric Power Company, Inc. | AEP | 4.61% | 0.60 | n/a | 7.31% | 8.98% |
| Duke Energy Corporation | DUK | 4.61% | 0.56 | n/a | 7.31% | 8.72% |
| Entergy Corporation | ETR | 4.61% | 0.70 | n/a | 7.31% | 9.74% |
| Evergy, Inc. | EVRG | 4.61% | 0.63 | n/a | 7.31% | 9.24% |
| FirstEnergy Corp | FE | 4.61% | 0.67 | n/a | 7.31% | 9.50% |
| IDACORP, Inc. | IDA | 4.61% | 0.65 | n/a | 7.31% | 9.33% |
| NextEra Energy, Inc. | NEE | 4.61% | 0.80 | n/a | 7.31% | 10.42% |
| OGE Energy Corp. | OGE | 4.61% | 0.77 | n/a | 7.31% | 10.23% |
| TXNM Energy, Inc. | TXNM | 4.61% | 0.51 | n/a | 7.31% | 8.36% |
| Portland General Electric Company | POR | 4.61% | 0.67 | n/a | 7.31% | 9.51% |
| PPL Corporation | PPL | 4.61% | 0.74 | n/a | 7.31% | 10.00% |
| Southern Company | SO | 4.61% | 0.64 | n/a | 7.31% | 9.28% |
| Xcel Energy Inc. | XEL | 4.61% | 0.61 | n/a | 7.31% | 9.09% |
| Mean | | | | | | 9.42% |

Notes:
[1] Source: Bloomberg Professional, as of March 31, 2025
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] n/a
[4] Source: Schedule 3.3 - Historical MRP
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG 5-YEAR BETA

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026) | Beta (β) | Market Return (Rm) | Historical Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.52% | 0.67 | n/a | 7.31% | 9.40% |
| Ameren Corporation | AEE | 4.52% | 0.66 | n/a | 7.31% | 9.37% |
| American Electric Power Company, Inc. | AEP | 4.52% | 0.60 | n/a | 7.31% | 8.89% |
| Duke Energy Corporation | DUK | 4.52% | 0.56 | n/a | 7.31% | 8.63% |
| Entergy Corporation | ETR | 4.52% | 0.70 | n/a | 7.31% | 9.65% |
| Evergy, Inc. | EVRG | 4.52% | 0.63 | n/a | 7.31% | 9.15% |
| FirstEnergy Corp | FE | 4.52% | 0.67 | n/a | 7.31% | 9.41% |
| IDACORP, Inc. | IDA | 4.52% | 0.65 | n/a | 7.31% | 9.24% |
| NextEra Energy, Inc. | NEE | 4.52% | 0.80 | n/a | 7.31% | 10.33% |
| OGE Energy Corp. | OGE | 4.52% | 0.77 | n/a | 7.31% | 10.14% |
| TXNM Energy, Inc. | TXNM | 4.52% | 0.51 | n/a | 7.31% | 8.27% |
| Portland General Electric Company | POR | 4.52% | 0.67 | n/a | 7.31% | 9.42% |
| PPL Corporation | PPL | 4.52% | 0.74 | n/a | 7.31% | 9.91% |
| Southern Company | SO | 4.52% | 0.64 | n/a | 7.31% | 9.20% |
| Xcel Energy Inc. | XEL | 4.52% | 0.61 | n/a | 7.31% | 9.00% |
| Mean | | | | | | 9.33% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025 at 2
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] n/a
[4] Source: Schedule 3.3 - Historical MRP
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG 5-YEAR BETA

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Projected 30-year U.S. Treasury bond yield (2026 - 2030) | Beta (β) | Market Return (Rm) | Historical Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.30% | 0.67 | n/a | 7.31% | 9.18% |
| Ameren Corporation | AEE | 4.30% | 0.66 | n/a | 7.31% | 9.15% |
| American Electric Power Company, Inc. | AEP | 4.30% | 0.60 | n/a | 7.31% | 8.67% |
| Duke Energy Corporation | DUK | 4.30% | 0.56 | n/a | 7.31% | 8.41% |
| Entergy Corporation | ETR | 4.30% | 0.70 | n/a | 7.31% | 9.43% |
| Evergy, Inc. | EVRG | 4.30% | 0.63 | n/a | 7.31% | 8.93% |
| FirstEnergy Corp | FE | 4.30% | 0.67 | n/a | 7.31% | 9.19% |
| IDACORP, Inc. | IDA | 4.30% | 0.65 | n/a | 7.31% | 9.02% |
| NextEra Energy, Inc. | NEE | 4.30% | 0.80 | n/a | 7.31% | 10.11% |
| OGE Energy Corp. | OGE | 4.30% | 0.77 | n/a | 7.31% | 9.92% |
| TXNM Energy, Inc. | TXNM | 4.30% | 0.51 | n/a | 7.31% | 8.05% |
| Portland General Electric Company | POR | 4.30% | 0.67 | n/a | 7.31% | 9.20% |
| PPL Corporation | PPL | 4.30% | 0.74 | n/a | 7.31% | 9.69% |
| Southern Company | SO | 4.30% | 0.64 | n/a | 7.31% | 8.98% |
| Xcel Energy Inc. | XEL | 4.30% | 0.61 | n/a | 7.31% | 8.78% |
| Mean | | | | | | 9.11% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024 at 14
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] n/a
[4] Source: Schedule 3.3 - Historical MRP
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG 10-YEAR BETA

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Current 30-day average of 30-year U.S. Treasury bond yield | Beta (β) | Market Return (Rm) | Historical Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.61% | 0.77 | n/a | 7.31% | 10.23% |
| Ameren Corporation | AEE | 4.61% | 0.73 | n/a | 7.31% | 9.97% |
| American Electric Power Company, Inc. | AEP | 4.61% | 0.73 | n/a | 7.31% | 9.96% |
| Duke Energy Corporation | DUK | 4.61% | 0.71 | n/a | 7.31% | 9.77% |
| Entergy Corporation | ETR | 4.61% | 0.84 | n/a | 7.31% | 10.74% |
| Evergy, Inc. | EVRG | 4.61% | 0.77 | n/a | 7.31% | 10.23% |
| FirstEnergy Corp | FE | 4.61% | 0.77 | n/a | 7.31% | 10.26% |
| IDACORP, Inc. | IDA | 4.61% | 0.76 | n/a | 7.31% | 10.20% |
| NextEra Energy, Inc. | NEE | 4.61% | 0.79 | n/a | 7.31% | 10.42% |
| OGE Energy Corp. | OGE | 4.61% | 0.90 | n/a | 7.31% | 11.17% |
| TXNM Energy, Inc. | TXNM | 4.61% | 0.81 | n/a | 7.31% | 10.51% |
| Portland General Electric Company | POR | 4.61% | 0.77 | n/a | 7.31% | 10.21% |
| PPL Corporation | PPL | 4.61% | 0.92 | n/a | 7.31% | 11.32% |
| Southern Company | SO | 4.61% | 0.76 | n/a | 7.31% | 10.17% |
| Xcel Energy Inc. | XEL | 4.61% | 0.72 | n/a | 7.31% | 9.84% |
| Mean | | | | | | 10.33% |

Notes:
[1] Source: Bloomberg Professional, as of March 31, 2025
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] n/a
[4] Source: Schedule 3.3 - Historical MRP
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG 10-YEAR BETA

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026) | Beta (β) | Market Return (Rm) | Historical Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.52% | 0.77 | n/a | 7.31% | 10.14% |
| Ameren Corporation | AEE | 4.52% | 0.73 | n/a | 7.31% | 9.89% |
| American Electric Power Company, Inc. | AEP | 4.52% | 0.73 | n/a | 7.31% | 9.87% |
| Duke Energy Corporation | DUK | 4.52% | 0.71 | n/a | 7.31% | 9.68% |
| Entergy Corporation | ETR | 4.52% | 0.84 | n/a | 7.31% | 10.65% |
| Evergy, Inc. | EVRG | 4.52% | 0.77 | n/a | 7.31% | 10.14% |
| FirstEnergy Corp | FE | 4.52% | 0.77 | n/a | 7.31% | 10.18% |
| IDACORP, Inc. | IDA | 4.52% | 0.76 | n/a | 7.31% | 10.11% |
| NextEra Energy, Inc. | NEE | 4.52% | 0.79 | n/a | 7.31% | 10.33% |
| OGE Energy Corp. | OGE | 4.52% | 0.90 | n/a | 7.31% | 11.08% |
| TXNM Energy, Inc. | TXNM | 4.52% | 0.81 | n/a | 7.31% | 10.42% |
| Portland General Electric Company | POR | 4.52% | 0.77 | n/a | 7.31% | 10.12% |
| PPL Corporation | PPL | 4.52% | 0.92 | n/a | 7.31% | 11.23% |
| Southern Company | SO | 4.52% | 0.76 | n/a | 7.31% | 10.08% |
| Xcel Energy Inc. | XEL | 4.52% | 0.72 | n/a | 7.31% | 9.75% |
| Mean | | | | | | 10.24% |

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025 at 2
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] n/a
[4] Source: Schedule 3.3 - Historical MRP
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG 10-YEAR BETA

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

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| Company | Ticker | Projected 30-year U.S. Treasury bond yield (2026 - 2030) | Beta (β) | Market Return (Rm) | Historical Market Risk Premium (Rm − Rf) | CAPM ROE (K) |
| Alliant Energy Corporation | LNT | 4.30% | 0.77 | n/a | 7.31% | 9.92% |
| Ameren Corporation | AEE | 4.30% | 0.73 | n/a | 7.31% | 9.67% |
| American Electric Power Company, Inc. | AEP | 4.30% | 0.73 | n/a | 7.31% | 9.65% |
| Duke Energy Corporation | DUK | 4.30% | 0.71 | n/a | 7.31% | 9.46% |
| Entergy Corporation | ETR | 4.30% | 0.84 | n/a | 7.31% | 10.43% |
| Evergy, Inc. | EVRG | 4.30% | 0.77 | n/a | 7.31% | 9.92% |
| FirstEnergy Corp | FE | 4.30% | 0.77 | n/a | 7.31% | 9.96% |
| IDACORP, Inc. | IDA | 4.30% | 0.76 | n/a | 7.31% | 9.89% |
| NextEra Energy, Inc. | NEE | 4.30% | 0.79 | n/a | 7.31% | 10.11% |
| OGE Energy Corp. | OGE | 4.30% | 0.90 | n/a | 7.31% | 10.86% |
| TXNM Energy, Inc. | TXNM | 4.30% | 0.81 | n/a | 7.31% | 10.20% |
| Portland General Electric Company | POR | 4.30% | 0.77 | n/a | 7.31% | 9.90% |
| PPL Corporation | PPL | 4.30% | 0.92 | n/a | 7.31% | 11.01% |
| Southern Company | SO | 4.30% | 0.76 | n/a | 7.31% | 9.86% |
| Xcel Energy Inc. | XEL | 4.30% | 0.72 | n/a | 7.31% | 9.53% |
| Mean | | | | | | 10.02% |

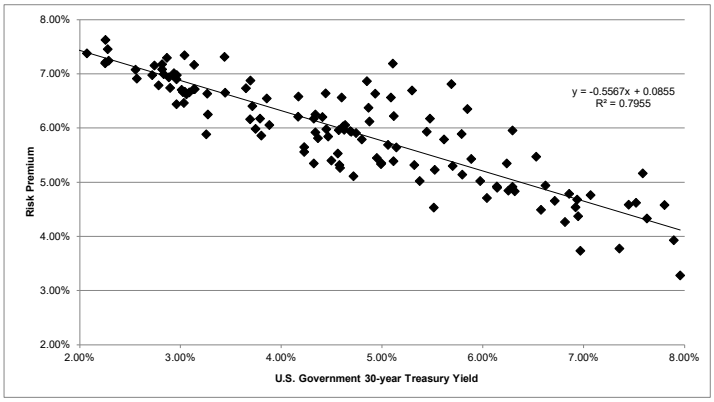
Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024 at 14
[2] Source: Bloomberg Professional, as of March 31, 2025
[3] n/a
[4] Source: Schedule 3.3 - Historical MRP
[5] Equals [1] + [2] x [4]

TREASURY BOND YIELD PLUS RISK PREMIUM
VERTICALLY INTEGRATED ELECTRIC UTILITIES

| | [1] | [2] | [3] |
|---|---|---|---|
| | Average Authorized Integrated Electric ROE | U.S. Govt. 30-year Treasury | Risk Premium |
| 1992.1 | 12.38% | 7.80% | 4.58% |
| 1992.2 | 11.83% | 7.89% | 3.93% |
| 1992.3 | 12.03% | 7.45% | 4.59% |
| 1992.4 | 12.14% | 7.52% | 4.62% |
| 1993.1 | 11.84% | 7.07% | 4.77% |
| 1993.2 | 11.64% | 6.86% | 4.79% |
| 1993.3 | 11.15% | 6.31% | 4.84% |
| 1993.4 | 11.04% | 6.14% | 4.90% |
| 1994.1 | 11.07% | 6.57% | 4.49% |
| 1994.2 | 11.13% | 7.35% | 3.78% |
| 1994.3 | 12.75% | 7.58% | 5.17% |
| 1994.4 | 11.24% | 7.96% | 3.28% |
| 1995.1 | 11.96% | 7.63% | 4.34% |
| 1995.2 | 11.32% | 6.94% | 4.37% |
| 1995.3 | 11.37% | 6.71% | 4.66% |
| 1995.4 | 11.58% | 6.23% | 5.35% |
| 1996.1 | 12.25% | 6.29% | 5.96% |
| 1996.2 | 11.46% | 6.92% | 4.54% |
| 1996.3 | 10.70% | 6.96% | 3.74% |
| 1996.4 | 11.56% | 6.62% | 4.94% |
| 1997.1 | 11.08% | 6.81% | 4.27% |
| 1997.2 | 11.62% | 6.93% | 4.68% |
| 1997.3 | 12.00% | 6.53% | 5.47% |
| 1997.4 | 11.06% | 6.14% | 4.92% |
| 1998.1 | 11.31% | 5.88% | 5.43% |
| 1998.2 | 12.20% | 5.85% | 6.35% |
| 1998.3 | 11.65% | 5.47% | 6.18% |
| 1998.4 | 12.30% | 5.10% | 7.20% |
| 1999.1 | 10.40% | 5.37% | 5.03% |
| 1999.2 | 10.94% | 5.79% | 5.15% |
| 1999.3 | 10.75% | 6.04% | 4.71% |
| 1999.4 | 11.10% | 6.25% | 4.85% |
| 2000.1 | 11.21% | 6.29% | 4.92% |
| 2000.2 | 11.00% | 5.97% | 5.03% |
| 2000.3 | 11.68% | 5.79% | 5.89% |
| 2000.4 | 12.50% | 5.69% | 6.81% |
| 2001.1 | 11.38% | 5.44% | 5.93% |
| 2001.2 | 11.00% | 5.70% | 5.30% |
| 2001.3 | 10.76% | 5.52% | 5.23% |
| 2001.4 | 11.99% | 5.30% | 6.70% |
| 2002.1 | 10.05% | 5.51% | 4.54% |
| 2002.2 | 11.41% | 5.61% | 5.79% |
| 2002.3 | 11.65% | 5.08% | 6.57% |
| 2002.4 | 11.57% | 4.93% | 6.64% |
| 2003.1 | 11.72% | 4.85% | 6.87% |
| 2003.2 | 11.16% | 4.60% | 6.56% |
| 2003.3 | 10.50% | 5.11% | 5.39% |
| 2003.4 | 11.34% | 5.11% | 6.23% |
| 2004.1 | 11.00% | 4.88% | 6.12% |
| 2004.2 | 10.64% | 5.32% | 5.32% |
| 2004.3 | 10.75% | 5.06% | 5.69% |
| 2004.4 | 11.24% | 4.86% | 6.38% |
| 2005.1 | 10.63% | 4.69% | 5.93% |
| 2005.2 | 10.31% | 4.47% | 5.85% |
| 2005.3 | 11.08% | 4.44% | 6.65% |
| 2005.4 | 10.63% | 4.68% | 5.95% |
| 2006.1 | 10.70% | 4.63% | 6.06% |
| 2006.2 | 10.79% | 5.14% | 5.65% |
| 2006.3 | 10.35% | 4.99% | 5.35% |
| 2006.4 | 10.65% | 4.74% | 5.91% |

TREASURY BOND YIELD PLUS RISK PREMIUM
VERTICALLY INTEGRATED ELECTRIC UTILITIES

| | [1] | [2] | [3] |
|---|---|---|---|
| | Average Authorized Integrated Electric ROE | U.S. Govt. 30-year Treasury | Risk Premium |
| 2007.1 | 10.59% | 4.80% | 5.80% |
| 2007.2 | 10.33% | 4.99% | 5.34% |
| 2007.3 | 10.40% | 4.95% | 5.45% |
| 2007.4 | 10.65% | 4.61% | 6.04% |
| 2008.1 | 10.62% | 4.41% | 6.21% |
| 2008.2 | 10.54% | 4.57% | 5.97% |
| 2008.3 | 10.43% | 4.44% | 5.98% |
| 2008.4 | 10.39% | 3.65% | 6.74% |
| 2009.1 | 10.75% | 3.44% | 7.31% |
| 2009.2 | 10.75% | 4.17% | 6.58% |
| 2009.3 | 10.50% | 4.32% | 6.18% |
| 2009.4 | 10.59% | 4.34% | 6.26% |
| 2010.1 | 10.59% | 4.62% | 5.97% |
| 2010.2 | 10.18% | 4.36% | 5.82% |
| 2010.3 | 10.40% | 3.86% | 6.55% |
| 2010.4 | 10.38% | 4.17% | 6.21% |
| 2011.1 | 10.09% | 4.56% | 5.53% |
| 2011.2 | 10.26% | 4.34% | 5.92% |
| 2011.3 | 10.57% | 3.69% | 6.88% |
| 2011.4 | 10.39% | 3.04% | 7.35% |
| 2012.1 | 10.30% | 3.14% | 7.17% |
| 2012.2 | 9.95% | 2.93% | 7.02% |
| 2012.3 | 9.90% | 2.74% | 7.16% |
| 2012.4 | 10.16% | 2.86% | 7.30% |
| 2013.1 | 9.85% | 3.13% | 6.72% |
| 2013.2 | 9.86% | 3.14% | 6.72% |
| 2013.3 | 10.12% | 3.71% | 6.41% |
| 2013.4 | 9.97% | 3.79% | 6.18% |
| 2014.1 | 9.86% | 3.69% | 6.17% |
| 2014.2 | 10.10% | 3.44% | 6.66% |
| 2014.3 | 9.90% | 3.26% | 6.64% |
| 2014.4 | 9.94% | 2.96% | 6.98% |
| 2015.1 | 9.64% | 2.55% | 7.08% |
| 2015.2 | 9.83% | 2.88% | 6.94% |
| 2015.3 | 9.40% | 2.96% | 6.44% |
| 2015.4 | 9.86% | 2.96% | 6.90% |
| 2016.1 | 9.70% | 2.72% | 6.98% |
| 2016.2 | 9.48% | 2.57% | 6.91% |
| 2016.3 | 9.74% | 2.28% | 7.46% |
| 2016.4 | 9.83% | 2.83% | 7.00% |
| 2017.1 | 9.72% | 3.04% | 6.67% |
| 2017.2 | 9.64% | 2.90% | 6.75% |
| 2017.3 | 10.00% | 2.82% | 7.18% |
| 2017.4 | 9.91% | 2.82% | 7.09% |
| 2018.1 | 9.69% | 3.02% | 6.66% |
| 2018.2 | 9.75% | 3.09% | 6.66% |
| 2018.3 | 9.69% | 3.06% | 6.63% |
| 2018.4 | 9.52% | 3.27% | 6.25% |
| 2019.1 | 9.72% | 3.01% | 6.71% |
| 2019.2 | 9.58% | 2.78% | 6.79% |
| 2019.3 | 9.53% | 2.29% | 7.24% |
| 2019.4 | 9.89% | 2.25% | 7.63% |
| 2020.1 | 9.72% | 1.89% | 7.83% |
| 2020.2 | 9.58% | 1.38% | 8.20% |
| 2020.3 | 9.30% | 1.37% | 7.93% |
| 2020.4 | 9.56% | 1.62% | 7.94% |
| 2021.1 | 9.45% | 2.07% | 7.38% |
| 2021.2 | 9.47% | 2.25% | 7.21% |
| 2021.3 | 9.27% | 1.93% | 7.34% |
| 2021.4 | 9.69% | 1.94% | 7.75% |
| 2022.1 | 9.45% | 2.25% | 7.20% |
| 2022.2 | 9.50% | 3.03% | 6.47% |
| 2022.3 | 9.14% | 3.26% | 5.88% |
| 2022.4 | 9.94% | 3.88% | 6.06% |
| 2023.1 | 9.73% | 3.74% | 5.99% |
| 2023.2 | 9.67% | 3.80% | 5.86% |
| 2023.3 | 9.79% | 4.23% | 5.56% |
| 2023.4 | 9.85% | 4.58% | 5.27% |
| 2024.1 | 9.67% | 4.32% | 5.35% |
| 2024.2 | 9.90% | 4.58% | 5.32% |
| 2024.3 | 9.88% | 4.23% | 5.65% |
| 2024.4 | 9.90% | 4.50% | 5.40% |
| 2025.1 | 9.83% | 4.71% | 5.11% |
| AVERAGE | 10.56% | 4.54% | 6.02% |
| MEDIAN | 10.43% | 4.57% | 6.06% |




SUMMARY OUTPUT

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.891893529 |
| R Square | 0.795474067 |
| Adjusted R Square | 0.7939128 |
| Standard Error | 0.00454352 |
| Observations | 133 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 1 | 0.010518016 | 0.010518016 | 509.5055722 | 5.56347E-47 |
| Residual | 131 | 0.002704308 | 2.06436E-05 | | |
| Total | 132 | 0.013222325 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 0.085476258 | 0.001185933 | 72.07512215 | 2.8232E-107 | 0.0831302 | 0.087822316 | 0.083282674 | 0.087905913 |
| X Variable 1 | -0.556744494 | 0.024665019 | -22.57223011 | 5.56347E-47 | -0.605537786 | -0.507951202 | -0.608735442 | -0.512589839 |

| | [7] U.S. Govt. 30-year Treasury | [8] Risk Premium | [9] ROE |
|---|---|---|---|
| Current 30-day average of 30-year U.S. Treasury bond yield [4] | 4.61% | 5.98% | 10.59% |
| Blue Chip Near-Term Projected Forecast (Q3 2025 - Q3 2026) [5] | 4.52% | 6.03% | 10.55% |
| Blue Chip Long-Term Projected Forecast (2026-2030) [6] | 4.30% | 6.15% | 10.45% |
| AVERAGE | | | 10.53% |

Notes:
[1] Source: Regulatory Research Associates, rate cases through March 31, 2025
[2] Source: Bloomberg Professional, quarterly bond yields are the average of each trading day in the quarter
[3] Equals Column [1] − Column [2]
[4] Source: Bloomberg Professional, 30-day average as of March 31, 2025
[5] Source: Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025 at 2
[6] Source: Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024 at 14
[7] See notes [4], [5] & [6]
[8] Equals 0.085476 + (-0.556744 x Column [7])
[9] Equals Column [7] + Column [8]

EXPECTED EARNINGS ANALYSIS

| | | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Value Line ROE 2027-2029 | Value Line Total Capital 2023 | Value Line Common Equity Ratio 2023 | Total Equity 2023 | Value Line Total Capital 2027-2029 | Value Line Common Equity Ratio 2027-2029 | Total Equity 2027-2029 | Compund Annual Growth Rate | Adjustment Factor | Adjusted Return on Common Equity |
| Alliant Energy Corporation | LNT | 12.00% | 15,681 | 44.70% | 7,009 | 17,070 | 48.00% | 8,194 | 3.17% | 1.016 | 12.19% |
| Ameren Corporation | AEE | 10.00% | 25,432 | 45.30% | 11,521 | 29,500 | 48.50% | 14,308 | 4.43% | 1.022 | 10.22% |
| American Electric Power Company, Inc. | AEP | 11.00% | 67,528 | 42.00% | 28,362 | 75,900 | 42.50% | 32,258 | 2.61% | 1.013 | 11.14% |
| Duke Energy Corporation | DUK | 10.50% | 127,650 | 38.00% | 48,507 | 160,500 | 37.00% | 59,385 | 4.13% | 1.020 | 10.71% |
| Entergy Corporation | ETR | 9.50% | 41,917 | 36.00% | 15,090 | 55,915 | 36.50% | 20,409 | 6.22% | 1.030 | 9.79% |
| Evergy, Inc. | EVRG | 10.00% | 21,250 | 48.50% | 10,306 | 23,400 | 46.50% | 10,881 | 1.09% | 1.005 | 10.05% |
| FirstEnergy Corp | FE | 14.50% | 31,900 | 34.00% | 10,846 | 40,500 | 37.50% | 15,188 | 6.97% | 1.034 | 14.99% |
| IDACORP, Inc. | IDA | 9.00% | 5,683 | 51.20% | 2,910 | 7,500 | 50.50% | 3,788 | 5.41% | 1.026 | 9.24% |
| NextEra Energy, Inc. | NEE | 14.00% | 122,486 | 41.00% | 50,219 | 189,400 | 42.00% | 79,548 | 9.64% | 1.046 | 14.64% |
| OGE Energy Corp. | OGE | 13.00% | 9,727 | 49.20% | 4,786 | 10,400 | 50.00% | 5,200 | 1.67% | 1.008 | 13.11% |
| TXNM Energy, Inc. | TXNM | 10.00% | 6,602 | 35.60% | 2,350 | 10,400 | 30.50% | 3,172 | 6.18% | 1.030 | 10.30% |
| Portland General Electric Company | POR | 9.50% | 7,513 | 44.20% | 3,321 | 10,750 | 46.00% | 4,945 | 8.29% | 1.040 | 9.88% |
| PPL Corporation | PPL | 9.50% | 29,875 | 49.00% | 14,639 | 34,280 | 50.50% | 17,311 | 3.41% | 1.017 | 9.66% |
| Southern Company | SO | 14.50% | 85,000 | 36.00% | 30,600 | 93,500 | 37.00% | 34,595 | 2.48% | 1.012 | 14.68% |
| Xcel Energy Inc. | XEL | 11.00% | 42,529 | 41.40% | 17,607 | 64,225 | 39.00% | 25,048 | 7.30% | 1.035 | 11.39% |
| Mean | | | | | | | | | | | 11.47% |
| Median | | | | | | | | | | | 10.71% |

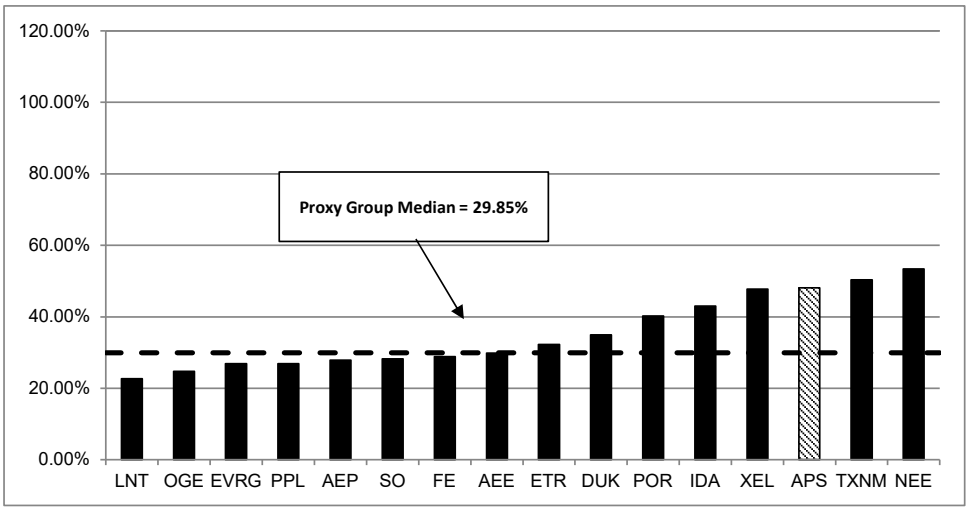
Notes:
[1] Source: Value Line
[2] Source: Value Line
[3] Source: Value Line
[4] Equals [2] x [3]
[5] Source: Value Line
[6] Source: Value Line
[7] Equals [5] x [6]
[8] Equals ([7] / [4]) ^ (1/5) - 1
[9] Equals 2 x (1 + [8]) / (2 + [8])
[10] Equals [1] x [9]

2025-2027 CAPITAL EXPENDITURES AS A PERCENT OF 2023 NET PLANT
*($ Millions)*

| | | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|---|
| | | 2023 | 2025 | 2026 | 2027 | 2025-2027 Cap. Ex. / 2023 Net Plant |
| Alliant Energy Corporation | LNT | | | | | |
| Capital Spending per Share | | | $5.60 | $5.50 | $5.40 | |
| Common Shares Outstanding | | | 257.00 | 257.00 | 257.00 | |
| Capital Expenditures | | | $1,439.2 | $1,413.5 | $1,387.8 | 22.68% |
| Net Plant | | $18,701.0 | | | | |
| Ameren Corporation | AEE | | | | | |
| Capital Spending per Share | | | $12.85 | $12.93 | $13.00 | |
| Common Shares Outstanding | | | 275.00 | 280.00 | 285.00 | |
| Capital Expenditures | | | $3,533.8 | $3,619.0 | $3,705.0 | 29.85% |
| Net Plant | | $36,376.0 | | | | |
| American Electric Power Company, Inc. | AEP | | | | | |
| Capital Spending per Share | | | $14.10 | $14.05 | $14.00 | |
| Common Shares Outstanding | | | 540.00 | 545.00 | 550.00 | |
| Capital Expenditures | | | $7,614.0 | $7,657.3 | $7,700.0 | 27.87% |
| Net Plant | | $82,416.0 | | | | |
| Duke Energy Corporation | DUK | | | | | |
| Capital Spending per Share | | | $18.00 | $18.38 | $18.75 | |
| Common Shares Outstanding | | | 774.00 | 775.50 | 777.00 | |
| Capital Expenditures | | | $13,932.0 | $14,249.8 | $14,568.8 | 34.92% |
| Net Plant | | $122,425.0 | | | | |
| Entergy Corporation | ETR | | | | | |
| Capital Spending per Share | | | $12.50 | $13.25 | $14.00 | |
| Common Shares Outstanding | | | 440.00 | 450.00 | 460.00 | |
| Capital Expenditures | | | $4,884.0 | $4,717.8 | $4,542.5 | 32.27% |
| Net Plant | | $47,423.0 | | | | |
| Evergy, Inc. | EVRG | | | | | |
| Capital Spending per Share | | | $9.35 | $9.43 | $9.50 | |
| Common Shares Outstanding | | | 230.00 | 230.00 | 230.00 | |
| Capital Expenditures | | | $2,150.5 | $2,167.8 | $2,185.0 | 26.87% |
| Net Plant | | $24,200.0 | | | | |
| FirstEnergy Corp | FE | | | | | |
| Capital Spending per Share | | | $6.30 | $6.40 | $6.50 | |
| Common Shares Outstanding | | | 584.00 | 589.50 | 595.00 | |
| Capital Expenditures | | | $3,679.2 | $3,772.8 | $3,867.5 | 28.82% |
| Net Plant | | $39,275.0 | | | | |
| IDACORP, Inc. | IDA | | | | | |
| Capital Spending per Share | | | $16.60 | $15.00 | $13.40 | |
| Common Shares Outstanding | | | 54.00 | 55.00 | 56.00 | |
| Capital Expenditures | | | $896.4 | $825.0 | $750.4 | 43.02% |
| Net Plant | | $5,745.2 | | | | |
| NextEra Energy, Inc. | NEE | | | | | |
| Capital Spending per Share | | | $11.00 | $11.50 | $12.00 | |
| Common Shares Outstanding | | | 2,100.00 | 2,150.00 | 2,200.00 | |
| Capital Expenditures | | | $23,100.0 | $24,725.0 | $26,400.0 | 53.46% |
| Net Plant | | $138,852.0 | | | | |
| OGE Energy Corporation | OGE | | | | | |
| Capital Spending per Share | | | $4.75 | $4.75 | $4.75 | |
| Common Shares Outstanding | | | 200.20 | 200.20 | 200.20 | |
| Capital Expenditures | | | $951.0 | $951.0 | $951.0 | 24.73% |
| Net Plant | | $11,538.0 | | | | |
| TXNM Energy, Inc. | TXNM | | | | | |
| Capital Spending per Share | | | $13.85 | $13.68 | $13.50 | |
| Common Shares Outstanding | | | 92.00 | 93.50 | 95.00 | |
| Capital Expenditures | | | $1,274.2 | $1,278.6 | $1,282.5 | 50.40% |
| Net Plant | | $7,609.9 | | | | |
| Portland General Electric Company | POR | | | | | |
| Capital Spending per Share | | | $11.00 | $11.13 | $11.25 | |
| Common Shares Outstanding | | | 110.00 | 115.00 | 120.00 | |
| Capital Expenditures | | | $1,210.0 | $1,279.4 | $1,350.0 | 40.22% |
| Net Plant | | $9,546.0 | | | | |
| Southern Company | PPL | | | | | |
| Capital Spending per Share | | | $3.75 | $3.88 | $4.00 | |
| Common Shares Outstanding | | | 737.50 | 737.75 | 738.00 | |
| Capital Expenditures | | | $2,765.6 | $2,858.8 | $2,952.0 | 26.89% |
| Net Plant | | $31,900.0 | | | | |
| PPL Corporation | SO | | | | | |
| Capital Spending per Share | | | $8.70 | $8.60 | $8.50 | |
| Common Shares Outstanding | | | 1,095.00 | 1,095.00 | 1,095.00 | |
| Capital Expenditures | | | $9,526.5 | $9,417.0 | $9,307.5 | 28.25% |
| Net Plant | | $100,000.0 | | | | |
| Xcel Energy Inc. | XEL | | | | | |
| Capital Spending per Share | | | $15.00 | $14.00 | $13.00 | |
| Common Shares Outstanding | | | 580.00 | 587.50 | 595.00 | |
| Capital Expenditures | | | $8,700.0 | $8,225.0 | $7,735.0 | 47.75% |
| Net Plant | | $51,642.0 | | | | |
| Arizona Public Service Company | APS | | | | | |
| Capital Expenditures [6] | | | $2,400.0 | $2,550.0 | $2,650.0 | 48.09% |
| Net Plant [6] | | $15,803.0 | | | | |
| | | | | | APS CapEx To | $7,600.0 |
| | | | | | APS CapEx An | $2,533.3 |
| | | | | | APS Ratio to P | 1.61 |

Notes:
[1] - [4] Source: Value Line, dated February 21, 2025, January 17, 2025, January 17, 2025, March 07, 2025, and January 03, 2025
[5] Equals (Column [2] + [3] + [4] + [5] + [6]) / Column [1]
[6] Source: Company-Provided Data

2025-2027 CAPITAL EXPENDITURES AS A PERCENT OF 2023 NET PLANT




**Projected CAPEX / 2023 Net Plant**

| | Company | | 2025-2027 |
|---|---|---|---|
| 1 | Alliant Energy Corporation | LNT | 22.68% |
| 2 | OGE Energy Corporation | OGE | 24.73% |
| 3 | Evergy, Inc. | EVRG | 26.87% |
| 4 | Southern Company | PPL | 26.89% |
| 5 | American Electric Power Company, Inc. | AEP | 27.87% |
| 6 | PPL Corporation | SO | 28.25% |
| 7 | FirstEnergy Corp | FE | 28.82% |
| 8 | Ameren Corporation | AEE | 29.85% |
| 9 | Entergy Corporation | ETR | 32.27% |
| 10 | Duke Energy Corporation | DUK | 34.92% |
| 11 | Portland General Electric Company | POR | 40.22% |
| 12 | IDACORP, Inc. | IDA | 43.02% |
| 13 | Xcel Energy Inc. | XEL | 47.75% |
| 14 | Arizona Public Service Company | APS | 48.09% |
| 15 | TXNM Energy, Inc. | TXNM | 50.40% |
| 16 | NextEra Energy, Inc. | NEE | 53.46% |
| | Proxy Group Median | | 29.85% |
| | APS/Proxy Group | | 1.61 |

Notes:
Source: Schedule 6.1 page 1 col. [7]

COMPARISON OF PROXY GROUP COMPANIES
REGULATORY FRAMEWORK - ADJUSTMENT CLAUSES

| | | [1] | | | [2] | | | [3] | | | | [4] | [5] | [6] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Decoupling | | New Capital | | | | |
| Proxy Group Company | Operating Company | Operation State | Operation | | Test Year | Rate Base | Fuel and Purchased Power Adjustment | Full | Partial | Generation Capacity | Delivery Infrastructure | CWIP in Rate Base | Current Authorized ROE | Current Authorized Equity Ratio |
| Alliant Energy Corporation | Interstate Power & Light Co. | Iowa | Electric | 1 | Historical | Average | x | | | x | | Known & measurable | 9.87% | 51.00% |
| | Wisconsin Power & Light Co. | Wisconsin | Electric | 1 | Fully Forecast | Average | x | | | | | No | 9.80% | 53.70% |
| Ameren Corporation | Ameren Illinois Co. | Illinois | Electric | 1 | Historical | Average | | | x | x | | Partial | 8.72% | 50.00% |
| | Union Electric Co. | Missouri | Electric | 1 | Historical | Year End | x | | x | x | x | No | NA | NA |
| American Electric Power Company | Southwestern Electric Power Co. | Arkansas | Electric | 1 | Historical | Year End | x | | x | x | | Known & measurable | 9.50% | NA |
| | Indiana Michigan Power Co. | Indiana | Electric | 1 | Historical | Year End | x | | x | x | x | Yes | 9.85% | NA |
| | Kentucky Power Co. | Kentucky | Electric | 1 | Historical | Year End | x | | x | | | Yes | 9.75% | 41.25% |
| | Southwestern Electric Power Co. | Louisiana-PSC | Electric | 1 | Historical | Average | x | | x | | | Yes | 9.50% | NA |
| | Indiana Michigan Power Co. | Michigan | Electric | 1 | Fully Forecast | Average | x | | x | x | | Yes | 9.86% | NA |
| | Ohio Power Co. | Ohio | Electric | 1 | Partially Forecast | Year End | | | x | x | x | Yes | 9.70% | 54.43% |
| | Public Service Co. of Oklahoma | Oklahoma | Electric | 1 | Historical | Year End | x | | x | x | x | Partial | 9.50% | 51.12% |
| | Kingsport Power Co. | Tennessee | Electric | 1 | Fully Forecast | Average | x | | | | | Yes | 9.50% | 48.90% |
| | AEP Texas Inc. | Texas | Electric | 1 | Historical | Year End | | | | | x | No | 9.76% | 42.50% |
| | Southwestern Electric Power Co. | Texas | Electric | 1 | Historical | Year End | x | | | | x | No | 9.25% | 49.37% |
| | Appalachian Power Co. | Virginia | Electric | 1 | Fully Forecast | Average | x | | | x | | No | 9.75% | 48.24% |
| | Appalachian Power Co./Wheeling Power Co. | West Virginia | Electric | 1 | Historical | Average | x | | | | | Large projects only | NA | NA |
| Duke Energy Corporation | Duke Energy Florida LLC | Florida | Electric | 1 | Fully Forecast | Average | x | | | x | | Yes | 10.30% | NA |
| | Duke Energy Indiana LLC | Indiana | Electric | 1 | Historical | Year End | x | | x | x | x | Yes | 9.75% | NA |
| | Duke Energy Kentucky Inc. | Kentucky | Electric | 1 | Fully Forecast | Year End | x | | x | | | Yes | 9.75% | 52.15% |
| | Duke Energy Carolinas LLC | North Carolina | Electric | 1 | Historical | Year End | x | | | x | | Partial | 10.10% | 53.00% |
| | Duke Energy Progress LLC | North Carolina | Electric | 1 | Historical | Year End | x | | | x | | Partial | 9.80% | 53.00% |
| | Duke Energy Ohio Inc. | Ohio | Electric | 1 | Partially Forecast | Year End | | | x | x | x | Yes | 9.50% | 50.50% |
| | Duke Energy Progress LLC | South Carolina | Electric | 1 | Historical | Year End | x | | | | | Yes | 9.60% | 52.43% |
| | Duke Energy Carolinas LLC | South Carolina | Electric | 1 | Historical | Year End | x | | | | | Yes | 9.94% | 51.21% |
| Entergy Corporation | Entergy Arkansas LLC | Arkansas | Electric | 1 | Fully Forecast | Year End | x | | x | x | x | Known & measurable | NA | NA |
| | Entergy New Orleans LLC | Louisiana-NOCC | Electric | 1 | Partially Forecast | Year End | x | | | x | | Partial | 9.35% | 50.00% |
| | Entergy Louisiana LLC | Louisiana-PSC | Electric | 1 | Historical | Average | x | | x | | | Partial | 9.95% | NA |
| | Entergy Mississippi LLC | Mississippi | Electric | 1 | Historical | Average | x | | x | | | Partial | 10.07% | NA |
| | Entergy Texas Inc. | Texas | Electric | 1 | Historical | Year End | x | | | x | x | No | 9.57% | 51.21% |
| Evergy, Inc. | Evergy Kansas Central Inc. | Kansas | Electric | 1 | Historical | Year End | x | | x | x | | Yes | NA | NA |
| | Evergy Kansas South Inc. | Kansas | Electric | 1 | Historical | Year End | x | | x | x | | Yes | 10.40% | 50.13% |
| | Evergy Metro Inc. | Kansas | Electric | 1 | Historical | Year End | x | | | | x | Yes | NA | NA |
| | Evergy Metro Inc. | Missouri | Electric | 1 | Historical | Year End | x | | x | | x | No | NA | NA |
| | Evergy Missouri West Inc. | Missouri | Electric | 1 | Historical | Year End | x | | x | x | x | No | NA | NA |
| FirstEnergy Corp | Potomac Edison Co. | Maryland | Electric | 1 | Historical | Average | | | | | | Yes | 9.50% | 53.00% |
| | Jersey Central Power & Light Co. | New Jersey | Electric | 1 | Partially Forecast | Year End | | | x | | | No | 9.60% | 51.90% |
| | Cleveland Elec. Illum./Ohio Edison/Toledo Edi | Ohio | Electric | 1 | Partially Forecast | Year End | | | x | x | x | No | 10.50% | 49.00% |
| | Metropolitan Edison Co. | Pennsylvania | Electric | 1 | Fully Forecast | Year End | | | | | x | No | NA | NA |
| | Pennsylvania Electric Co. | Pennsylvania | Electric | 1 | Fully Forecast | Year End | | | | | x | No | NA | NA |
| | Pennsylvania Power Co. | Pennsylvania | Electric | 1 | Fully Forecast | Year End | | | | | x | No | NA | NA |
| | West Penn Power Co. | Pennsylvania | Electric | 1 | Fully Forecast | Year End | | | | | x | No | NA | NA |
| | Monongahela Power Co. | West Virginia | Electric | 1 | Historical | Average | x | | | | | Large projects only | 9.80% | NA |
| | Potomac Edison Co. | West Virginia | Electric | 1 | Historical | Average | x | | | | | Large projects only | 10.85% | 46.42% |
| IDACORP | Idaho Power Co. | Idaho | Electric | 1 | Partially Forecast | Average | x | x | | | | No | 9.60% | NA |
| | Idaho Power Co. | Oregon | Electric | 1 | Partially Forecast | Average | x | | | | | No | 9.50% | 50.00% |
| NextEra Energy, Inc. | Florida Power & Light Co. | Florida | Electric | 1 | Fully Forecast | Average | x | | | x | | Yes | 10.80% | 59.60% |
| OGE Energy Corp. | Oklahoma Gas & Electric Co. | Arkansas | Electric | 1 | Historical | Year End | x | | x | x | x | Known & measurable | NA | NA |
| | Oklahoma Gas & Electric Co. | Oklahoma | Electric | 1 | Historical | Year End | x | | x | | x | No | 9.50% | 53.50% |
| TXNM Energy, Inc. | Public Service Co. of New Mexico | New Mexico | Electric | 1 | Fully Forecast | Average | x | | | x | | Yes | 9.26% | 49.61% |
| | Texas-New Mexico Power Co. | Texas | Electric | 1 | Historical | Year End | | | | | x | No | 9.65% | 45.00% |
| Portland General Electric Company | Portland General Electric Co. | Oregon | Electric | 1 | Partially Forecast | Average | x | | | x | | No | 9.34% | 50.00% |
| PPL Corporation | Kentucky Utilities Co. | Kentucky | Electric | 1 | Fully Forecast | Year End | x | | x | | | Yes | 9.43% | NA |
| | Louisville Gas & Electric Co. | Kentucky | Electric | 1 | Fully Forecast | Year End | x | | x | | | Yes | 9.43% | NA |
| | PPL Electric Utilities Corp. | Pennsylvania | Electric | 1 | Fully Forecast | Year End | | | | | x | No | NA | NA |
| | Narragansett Electric Co. | Rhode Island | Electric | 1 | Historical | Average | | x | | | x | No | 9.28% | 50.95% |
| | Kentucky Utilities Co. | Virginia | Electric | 1 | Historical | Year End | x | | | | | Rider | NA | NA |
| Southern Company | Alabama Power Co. | Alabama | Electric | 1 | Fully Forecast | Year End | x | | | x | | No | NA | NA |
| | Georgia Power Co. | Georgia | Electric | 1 | Fully Forecast | Average | x | | | x | | Partial | 10.50% | 56.00% |
| | Mississippi Power Co. | Mississippi | Electric | 1 | Historical | Average | x | | x | | | Partial | NA | 53.00% |
| Xcel Energy Inc. | Public Service Co. of Colorado | Colorado | Electric | 1 | Historical | Average | x | | x | x | x | Yes | 9.30% | 55.69% |
| | Northern States Power Co. - Minnesota | Minnesota | Electric | 1 | Fully Forecast | Average | x | | x | x | x | Partial | 9.25% | 52.50% |
| | Southwestern Public Service Co. | New Mexico | Electric | 1 | Fully Forecast | Average | x | | | x | x | Yes | 9.50% | 54.70% |
| | Northern States Power Co. - Minnesota | North Dakota | Electric | 1 | Partially Forecast | Average | x | | | x | x | Rider | 9.50% | 52.50% |
| | Northern States Power Co. - Minnesota | South Dakota | Electric | 1 | Historical | Average | x | | x | x | x | No | NA | NA |
| | Southwestern Public Service Co. | Texas | Electric | 1 | Historical | Year End | x | | | | | Surcharge | NA | NA |
| | Northern States Power Co. - Wisconsin | Wisconsin | Electric | 1 | Fully Forecast | Average | x | | | | | Rider | 9.80% | 52.50% |
| | | | | | Historical: 36 | Average: 28 | | | | | | | | |
| **Proxy Company Totals** | | | | | Forecast: 30 | Year End: 38 | | 2 | 29 | 32 | 28 | 43 | | |
| **Total Jurisdictions** | | | | **66** | | | | | | | | | | |
| **Percent of Jurisdictions** | | | | | **Forecast: 45%** | **Year End: 58%** | | **3%** | **44%** | **48%** | **42%** | **65%** | **9.71%** | **51.08%** |
| Arizona Public Service Company | | Arizona | Electric | | Historical | Year End | x | | x | x | | No | 9.55% | 51.93% |

Notes:
[1] Source: 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.
[2] Source: S&P Global Market Intelligence, Regulatory Research Associates, Commission Profiles
[3] Source: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022
[4] Source: S&P Global Market Intelligence, Regulatory Research Associates, Commission Profiles
[5] - [6] Source: S&P Global Market Intelligence, Past Rate Cases
[6] Excludes equito ratios from Arkansas, Forida, Indiana and Michigan, which include zero cost of capital items in rate base such as ADIT.

NUCLEAR GENERATION ANALYSIS

| Regulated\|2023 Y | | [1] Net Generation of Reporting Plants: Operations (MWh) Uranium | [2] Net Generation of Reporting Plants: Operations (MWh) Total | [3] Net Generation % Nuclear | [4] Operating Capacity (MW) Uranium | [5] Operating Capacity (MW) Total | [6] Operating Capacity % Nuclear |
|---|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | NA | $27,305,735.00 | 0.0% | NA | $8,118.14 | 0.0% |
| Ameren Corporation | AEE | $9,179,744.00 | $32,360,874.00 | 28.4% | $1,236.00 | $10,753.80 | 11.5% |
| American Electric Power Company, Inc. | AEP | $18,640,118.00 | $72,647,843.00 | 25.7% | $2,278.00 | $23,230.41 | 9.8% |
| Duke Energy Corporation | DUK | $74,994,563.00 | $206,077,488.00 | 36.4% | $9,195.48 | $54,779.51 | 16.8% |
| Entergy Corporation | ETR | $27,183,938.00 | $103,276,104.00 | 26.3% | $4,000.70 | $25,380.99 | 15.8% |
| Evergy, Inc. | EVRG | $9,683,754.00 | $33,373,325.00 | 29.0% | $1,179.70 | $10,966.85 | 10.8% |
| FirstEnergy Corp | FE | NA | $16,263,950.00 | 0.0% | NA | $3,580.71 | 0.0% |
| IDACORP, Inc. | IDA | NA | $12,705,288.00 | 0.0% | NA | $3,780.78 | 0.0% |
| NextEra Energy, Inc. | NEE | $28,723,529.00 | $142,769,983.00 | 20.1% | $3,589.92 | $36,343.75 | 9.9% |
| OGE Energy Corp. | OGE | NA | $13,377,693.00 | 0.0% | NA | $7,339.31 | 0.0% |
| TXNM Energy, Inc. | TXNM | $2,417,006.00 | $7,441,320.00 | 32.5% | $306.93 | $1,570.48 | 19.5% |
| Portland General Electric Company | POR | NA | $16,289,052.00 | 0.0% | NA | $3,558.41 | 0.0% |
| PPL Corporation | PPL | NA | $29,892,871.00 | 0.0% | NA | $8,112.71 | 0.0% |
| Southern Company | SO | $32,682,565.00 | $134,386,105.00 | 24.3% | $4,233.37 | $32,921.00 | 12.9% |
| Xcel Energy Inc. | XEL | $11,923,652.00 | $76,167,245.00 | 15.7% | $1,738.00 | $22,259.18 | 7.8% |
| **Average** | | | | **15.9%** | | | **7.6%** |
| Arizona Public Service Company | | $9,173,074.00 | $25,326,539.00 | 36.2% | $1,164.90 | $6,634.20 | 17.6% |

Notes:
[1] – [6] Source: S&P Global Market Intelligence, Regulated Energy Companies Screener. Accessed April 29, 2025.

COMPARISON OF PROXY GROUP COMPANIES
REGULATORY FRAMEWORK - ALTERNATIVE RATE PLANS

| | | [1] | | | [2] | |
|---|---|---|---|---|---|---|
| Proxy Group Company | Operating Company | Operation State | Operation | | Formula Rate Plan | Multi-Year Rate Plan |
| Alliant Energy Corporation | Interstate Power & Light Co. | Iowa | Electric | 1 | | |
| | Wisconsin Power & Light Co. | Wisconsin | Electric | 1 | | |
| Ameren Corporation | Ameren Illinois Co. | Illinois | Electric | 1 | | x |
| | Union Electric Co. | Missouri | Electric | 1 | | |
| American Electric Power Company | Southwestern Electric Power Co. | Arkansas | Electric | 1 | x | |
| | Indiana Michigan Power Co. | Indiana | Electric | 1 | | |
| | Kentucky Power Co. | Kentucky | Electric | 1 | | |
| | Southwestern Electric Power Co. | Louisiana-PSC | Electric | 1 | x | |
| | Indiana Michigan Power Co. | Michigan | Electric | 1 | | |
| | Ohio Power Co. | Ohio | Electric | 1 | | |
| | Public Service Co. of Oklahoma | Oklahoma | Electric | 1 | | |
| | Kingsport Power Co. | Tennessee | Electric | 1 | | |
| | AEP Texas Inc. | Texas | Electric | 1 | | |
| | Southwestern Electric Power Co. | Texas | Electric | 1 | | |
| | Appalachian Power Co. | Virginia | Electric | 1 | | |
| | Appalachian Power Co./Wheeling Power Co. | West Virginia | Electric | 1 | | x |
| Duke Energy Corporation | Duke Energy Florida LLC | Florida | Electric | 1 | | x |
| | Duke Energy Indiana LLC | Indiana | Electric | 1 | | |
| | Duke Energy Kentucky Inc. | Kentucky | Electric | 1 | | |
| | Duke Energy Carolinas LLC | North Carolina | Electric | 1 | | x |
| | Duke Energy Progress LLC | North Carolina | Electric | 1 | | x |
| | Duke Energy Ohio Inc. | Ohio | Electric | 1 | | |
| | Duke Energy Progress LLC | South Carolina | Electric | 1 | | |
| | Duke Energy Carolinas LLC | South Carolina | Electric | 1 | | |
| Entergy Corporation | Entergy Arkansas LLC | Arkansas | Electric | 1 | x | |
| | Entergy New Orleans LLC | Louisiana-NOCC | Electric | 1 | x | |
| | Entergy Louisiana LLC | Louisiana-PSC | Electric | 1 | x | |
| | Entergy Mississippi LLC | Mississippi | Electric | 1 | x | |
| | Entergy Texas Inc. | Texas | Electric | 1 | | |
| Evergy, Inc. | Evergy Kansas Central Inc. | Kansas | Electric | 1 | | |
| | Evergy Kansas South Inc. | Kansas | Electric | 1 | | |
| | Evergy Metro Inc. | Kansas | Electric | 1 | | |
| | Evergy Metro Inc. | Missouri | Electric | 1 | | |
| | Evergy Missouri West Inc. | Missouri | Electric | 1 | | |
| FirstEnergy Corp | Potomac Edison Co. | Maryland | Electric | 1 | | |
| | Jersey Central Power & Light Co. | New Jersey | Electric | 1 | | |
| | Cleveland Elec. Illum./Ohio Edison/Toledo Edi | Ohio | Electric | 1 | | x |
| | Metropolitan Edison Co. | Pennsylvania | Electric | 1 | | |
| | Pennsylvania Electric Co. | Pennsylvania | Electric | 1 | | |
| | Pennsylvania Power Co. | Pennsylvania | Electric | 1 | | |
| | West Penn Power Co. | Pennsylvania | Electric | 1 | | |
| | Monongahela Power Co. | West Virginia | Electric | 1 | | |
| | Potomac Edison Co. | West Virginia | Electric | 1 | | |
| IDACORP | Idaho Power Co. | Idaho | Electric | 1 | | |
| | Idaho Power Co. | Oregon | Electric | 1 | | |
| NextEra Energy, Inc. | Florida Power & Light Co. | Florida | Electric | 1 | | x |
| OGE Energy Corp. | Oklahoma Gas & Electric Co. | Arkansas | Electric | 1 | | |
| | Oklahoma Gas & Electric Co. | Oklahoma | Electric | 1 | | |
| TXNM Energy, Inc. | Public Service Co. of New Mexico | New Mexico | Electric | 1 | | |
| | Texas-New Mexico Power Co. | Texas | Electric | 1 | | |
| Portland General Electric Company | Portland General Electric Co. | Oregon | Electric | 1 | | |
| PPL Corporation | Kentucky Utilities Co. | Kentucky | Electric | 1 | | |
| | Louisville Gas & Electric Co. | Kentucky | Electric | 1 | | |
| | PPL Electric Utilities Corp. | Pennsylvania | Electric | 1 | | |
| | Narragansett Electric Co. | Rhode Island | Electric | 1 | | |
| | Kentucky Utilities Co. | Virginia | Electric | 1 | | |
| Southern Company | Alabama Power Co. | Alabama | Electric | 1 | x | |
| | Georgia Power Co. | Georgia | Electric | 1 | | x |
| | Mississippi Power Co. | Mississippi | Electric | 1 | x | |
| Xcel Energy Inc. | Public Service Co. of Colorado | Colorado | Electric | 1 | | |
| | Northern States Power Co. - Minnesota | Minnesota | Electric | 1 | | x |
| | Southwestern Public Service Co. | New Mexico | Electric | 1 | | |
| | Northern States Power Co. - Minnesota | North Dakota | Electric | 1 | | |
| | Northern States Power Co. - Minnesota | South Dakota | Electric | 1 | | |
| | Southwestern Public Service Co. | Texas | Electric | 1 | | |
| | Northern States Power Co. - Wisconsin | Wisconsin | Electric | 1 | | |
| | | | | | FRP: 8 | MYRP: 9 |
| **Proxy Company Totals** | | | | | | |
| **Total Jurisdictions** | | | | **66** | | |
| **Percent of Jurisdictions** | | | | | **FRP: 12%** | **MYRP: 14%** |
| Arizona Public Service Company | | Arizona | Electric | | Proposed | No |

Notes:
[1] Source: 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.
[2] Source: EEI Pacific Economics Group, Innovative Regulatory Tools for Addressing an Increasingly Complex Energy Landscape, February 2024, Table A3 and Table A6

CAPITAL STRUCTURE ANALYSIS

COMMON EQUITY RATIO [1]

| Proxy Group Company | Ticker | 2024Q4 | 2024Q3 | 2024Q2 | 2024Q1 | Average |
|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | 52.71% | 50.96% | 51.76% | 51.59% | 51.75% |
| Ameren Corporation | AEE | 53.52% | 53.89% | 53.10% | 53.64% | 53.54% |
| American Electric Power Company, Inc. | AEP | 48.58% | 48.74% | 48.26% | 49.16% | 48.68% |
| Duke Energy Corporation | DUK | 53.08% | 53.53% | 53.00% | 52.16% | 52.94% |
| Entergy Corporation | ETR | 51.30% | 51.62% | 50.83% | 50.77% | 51.13% |
| FirstEnergy Corporation | FE | 58.94% | 59.32% | 57.33% | 54.18% | 57.44% |
| Evergy, Inc. | EVRG | 57.57% | 57.50% | 56.83% | 57.95% | 57.46% |
| IDACORP, Inc. | IDA | 49.95% | 49.62% | 51.57% | 49.46% | 50.15% |
| NextEra Energy, Inc. | NEE | 59.98% | 59.47% | 59.13% | 62.68% | 60.31% |
| OGE Energy Corporation | OGE | 53.25% | 53.33% | 53.08% | 53.67% | 53.33% |
| TXNM Energy, Inc. | TXNM | 50.10% | 50.60% | 49.30% | 50.73% | 50.18% |
| Portland General Electric Company | POR | 45.57% | 44.96% | 43.94% | 43.76% | 44.56% |
| PPL Corporation | PPL | 56.61% | 56.40% | 56.04% | 55.53% | 56.15% |
| Southern Company | SO | 55.54% | 56.14% | 54.84% | 54.37% | 55.23% |
| Xcel Energy Inc. | XEL | 54.24% | 54.08% | 53.47% | 54.29% | 54.02% |
| MEAN | | 53.39% | 53.34% | 52.83% | 52.93% | 53.13% |
| MEDIAN | | 53.25% | 53.53% | 53.08% | 53.64% | 53.33% |
| LOW | | 45.57% | 44.96% | 43.94% | 43.76% | 44.56% |
| HIGH | | 59.98% | 59.47% | 59.13% | 62.68% | 60.31% |

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES [2]

| Company Name | Ticker | 2024Q4 | 2024Q3 | 2024Q2 | 2024Q1 | Average |
|---|---|---|---|---|---|---|
| Interstate Power and Light Company | LNT | 51.73% | 48.71% | 50.39% | 50.13% | 50.24% |
| Wisconsin Power and Light Company | LNT | 53.82% | 53.67% | 53.25% | 53.17% | 53.48% |
| Ameren Illinois Company | AEE | 55.36% | 54.88% | 54.57% | 56.98% | 55.44% |
| Union Electric Company | AEE | 51.92% | 53.02% | 51.76% | 50.64% | 51.83% |
| AEP Texas, Inc. | AEP | 43.47% | 44.02% | 44.11% | 46.12% | 44.43% |
| Appalachian Power Company | AEP | 50.26% | 49.65% | 49.46% | 49.16% | 49.63% |
| Indiana Michigan Power Company | AEP | 50.18% | 50.16% | 49.13% | 49.14% | 49.65% |
| Kentucky Power Company | AEP | 44.93% | 44.49% | 42.57% | 42.54% | 43.63% |
| Kingsport Power Company | AEP | 52.99% | 52.73% | 52.51% | 51.80% | 52.51% |
| Ohio Power Company | AEP | 50.95% | 50.23% | 49.47% | 51.79% | 50.61% |
| Public Service Company of Oklahoma | AEP | 48.32% | 52.78% | 52.12% | 52.10% | 51.33% |
| Southwestern Electric Power Company | AEP | 51.55% | 50.85% | 50.60% | 51.71% | 51.18% |
| Wheeling Power Company | AEP | 44.66% | 44.24% | 43.74% | 44.17% | 44.20% |
| Duke Energy Carolinas, LLC | DUK | 51.08% | 52.36% | 51.57% | 51.05% | 51.51% |
| Duke Energy Florida, LLC | DUK | 53.67% | 54.45% | 53.94% | 51.75% | 53.45% |
| Duke Energy Indiana, LLC | DUK | 53.41% | 53.13% | 52.85% | 51.31% | 52.67% |
| Duke Energy Kentucky, Inc. | DUK | 54.31% | 53.68% | 56.26% | 62.20% | 56.61% |
| Duke Energy Ohio, Inc. | DUK | 62.72% | 62.21% | 61.98% | 61.55% | 62.12% |
| Duke Energy Progress, LLC | DUK | 51.71% | 51.39% | 50.69% | 50.18% | 50.99% |
| Entergy Arkansas, Inc. | ETR | 47.15% | 48.46% | 47.46% | 46.64% | 47.43% |
| Entergy Louisiana, LLC | ETR | 54.22% | 54.14% | 52.62% | 52.61% | 53.40% |
| Entergy Mississippi, Inc. | ETR | 49.50% | 48.94% | 48.19% | 48.57% | 48.80% |
| Entergy New Orleans, LLC | ETR | 48.50% | 52.44% | 51.21% | 52.81% | 51.24% |
| Entergy Texas, Inc. | ETR | 49.74% | 49.89% | 51.74% | 51.03% | 50.60% |
| Evergy Metro | EVRG | 50.97% | 51.21% | 50.40% | 52.25% | 51.21% |
| Evergy Missouri West, Inc. | EVRG | 52.08% | 52.18% | 51.40% | 56.08% | 52.93% |
| Great Plains Energy Incorporated | EVRG | 51.34% | 51.53% | 50.74% | 53.49% | 51.77% |
| Westar Energy (KPL) | EVRG | 57.12% | 56.86% | 56.31% | 55.72% | 56.50% |
| Westar Energy, Inc. | EVRG | 66.78% | 66.56% | 65.99% | 65.52% | 66.21% |
| Cleveland Electric Illuminating Company | FE | 67.19% | 67.08% | 55.54% | 55.59% | 61.35% |
| FirstEnergy Pennsylvania Electric Company | FE | 52.71% | 49.41% | 48.72% | 48.65% | 49.87% |
| Jersey Central Power & Light Company | FE | 67.97% | 75.34% | 74.92% | 66.51% | 71.19% |
| Metropolitan Edison Company | FE | | | | | |
| Monongahela Power Company | FE | 53.58% | 53.16% | 52.12% | 46.10% | 51.24% |
| Ohio Edison Company | FE | 54.89% | 54.30% | 53.27% | 53.33% | 53.95% |
| Pennsylvania Electric Company | FE | | | | | |
| Pennsylvania Power Company | FE | | | | | |
| Potomac Edison Company | FE | 51.72% | 50.90% | 50.56% | 50.31% | 50.87% |
| Toledo Edison Company | FE | 55.44% | 55.41% | 54.83% | 54.98% | 55.17% |
| West Penn Power Company | FE | | | | | |
| Idaho Power Co. | IDA | 49.95% | 49.62% | 51.57% | 49.46% | 50.15% |
| Florida Power & Light Company | NEE | 59.98% | 59.47% | 59.13% | 62.68% | 60.31% |
| Oklahoma Gas and Electric Company | OGE | 53.25% | 53.33% | 53.08% | 53.67% | 53.33% |
| Public Service Company of New Mexico | TXNM | 50.10% | 50.60% | 49.30% | 50.73% | 50.18% |
| Portland General Electric Company | POR | 45.57% | 44.96% | 43.94% | 43.76% | 44.56% |
| Kentucky Utilities Company | PPL | 54.48% | 54.14% | 54.17% | 53.54% | 54.08% |
| Louisville Gas and Electric Company | PPL | 53.69% | 53.32% | 53.22% | 52.87% | 53.28% |
| Narragansett Electric Company | PPL | 62.90% | 62.48% | 61.15% | 60.03% | 61.64% |
| PPL Electric Utilities Corporation | PPL | 56.29% | 56.34% | 56.15% | 55.92% | 56.18% |
| Alabama Power Company | SO | 53.88% | 53.97% | 53.56% | 53.33% | 53.69% |
| Georgia Power Company | SO | 56.53% | 57.47% | 55.57% | 55.14% | 56.18% |
| Mississippi Power Company | SO | 55.31% | 55.62% | 55.25% | 52.95% | 54.78% |
| Northern States Power Company - MN | XEL | 53.37% | 52.90% | 52.22% | 51.71% | 52.55% |
| Northern States Power Company - WI | XEL | 53.23% | 52.97% | 52.63% | 54.86% | 53.43% |
| Public Service Company of Colorado | XEL | 55.21% | 55.21% | 54.38% | 56.73% | 55.38% |
| Southwestern Public Service Company | XEL | 54.17% | 54.28% | 54.29% | 54.21% | 54.24% |

Notes:
[1] Ratios are weighted by actual common capital, preferred capital, and long-term debt of Operating Subsidiaries.
[2] Operating Subsidiaries with data listed as N/A from SNL Financial have been excluded from the analysis.

CAPITAL STRUCTURE ANALYSIS

LONG-TERM DEBT RATIO [1]

| Proxy Group Company | Ticker | 2024Q4 | 2024Q3 | 2024Q2 | 2024Q1 | Average |
|---|---|---|---|---|---|---|
| Alliant Energy Corporation | LNT | 47.29% | 49.04% | 48.24% | 48.41% | 48.25% |
| Ameren Corporation | AEE | 46.48% | 46.11% | 46.90% | 46.36% | 46.46% |
| American Electric Power Company, Inc. | AEP | 51.42% | 51.26% | 51.74% | 50.84% | 51.32% |
| Duke Energy Corporation | DUK | 46.92% | 46.47% | 47.00% | 47.84% | 47.06% |
| Entergy Corporation | ETR | 48.70% | 48.38% | 49.17% | 49.23% | 48.87% |
| FirstEnergy Corporation | FE | 41.06% | 40.68% | 42.67% | 45.82% | 42.56% |
| Evergy, Inc. | EVRG | 42.43% | 42.50% | 43.17% | 42.05% | 42.54% |
| IDACORP, Inc. | IDA | 50.05% | 50.38% | 48.43% | 50.54% | 49.85% |
| NextEra Energy, Inc. | NEE | 40.02% | 40.53% | 40.87% | 37.32% | 39.69% |
| OGE Energy Corporation | OGE | 46.75% | 46.67% | 46.92% | 46.33% | 46.67% |
| TXNM Energy, Inc. | TXNM | 49.90% | 49.40% | 50.70% | 49.27% | 49.82% |
| Portland General Electric Company | POR | 54.43% | 55.04% | 56.06% | 56.24% | 55.44% |
| PPL Corporation | PPL | 43.39% | 43.60% | 43.96% | 44.47% | 43.85% |
| Southern Company | SO | 44.46% | 43.86% | 45.16% | 45.63% | 44.77% |
| Xcel Energy Inc. | XEL | 45.76% | 45.92% | 46.53% | 45.71% | 45.98% |
| MEAN | | 46.61% | 46.66% | 47.17% | 47.07% | 46.81% |
| MEDIAN | | 46.75% | 46.47% | 46.92% | 46.36% | 46.67% |
| LOW | | 40.02% | 40.53% | 40.87% | 37.32% | 40.47% |
| HIGH | | 54.43% | 55.04% | 56.06% | 56.24% | 55.18% |

LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES [2]

| Company Name | Ticker | 2024Q4 | 2024Q3 | 2024Q2 | 2024Q1 | Average |
|---|---|---|---|---|---|---|
| Interstate Power and Light Company | LNT | 48.27% | 51.29% | 49.61% | 49.87% | 49.76% |
| Wisconsin Power and Light Company | LNT | 46.18% | 46.33% | 46.75% | 46.83% | 46.52% |
| Ameren Illinois Company | AEE | 44.64% | 45.12% | 45.43% | 43.02% | 44.56% |
| Union Electric Company | AEE | 48.08% | 46.98% | 48.24% | 49.36% | 48.17% |
| AEP Texas, Inc. | AEP | 56.53% | 55.98% | 55.89% | 53.88% | 55.57% |
| Appalachian Power Company | AEP | 49.74% | 50.35% | 50.54% | 50.84% | 50.37% |
| Indiana Michigan Power Company | AEP | 49.82% | 49.84% | 50.87% | 50.86% | 50.35% |
| Kentucky Power Company | AEP | 55.07% | 55.51% | 57.43% | 57.46% | 56.37% |
| Kingsport Power Company | AEP | 47.01% | 47.27% | 47.49% | 48.20% | 47.49% |
| Ohio Power Company | AEP | 49.05% | 49.77% | 50.53% | 48.21% | 49.39% |
| Public Service Company of Oklahoma | AEP | 51.68% | 47.22% | 47.88% | 47.90% | 48.67% |
| Southwestern Electric Power Company | AEP | 48.45% | 49.15% | 49.40% | 48.29% | 48.82% |
| Wheeling Power Company | AEP | 55.34% | 55.76% | 56.26% | 55.83% | 55.80% |
| Duke Energy Carolinas, LLC | DUK | 48.92% | 47.64% | 48.43% | 48.95% | 48.49% |
| Duke Energy Florida, LLC | DUK | 46.33% | 45.55% | 46.06% | 48.25% | 46.55% |
| Duke Energy Indiana, LLC | DUK | 46.59% | 46.87% | 47.15% | 48.69% | 47.33% |
| Duke Energy Kentucky, Inc. | DUK | 45.69% | 46.32% | 43.74% | 37.80% | 43.39% |
| Duke Energy Ohio, Inc. | DUK | 37.28% | 37.79% | 38.02% | 38.45% | 37.88% |
| Duke Energy Progress, LLC | DUK | 48.29% | 48.61% | 49.31% | 49.82% | 49.01% |
| Entergy Arkansas, Inc. | ETR | 52.85% | 51.54% | 52.54% | 53.36% | 52.57% |
| Entergy Louisiana, LLC | ETR | 45.78% | 45.86% | 47.38% | 47.39% | 46.60% |
| Entergy Mississippi, Inc. | ETR | 50.50% | 51.06% | 51.81% | 51.43% | 51.20% |
| Entergy New Orleans, LLC | ETR | 51.50% | 47.56% | 48.79% | 47.19% | 48.76% |
| Entergy Texas, Inc. | ETR | 50.26% | 50.11% | 48.26% | 48.97% | 49.40% |
| Evergy Metro | EVRG | 49.03% | 48.79% | 49.60% | 47.75% | 48.79% |
| Evergy Missouri West, Inc. | EVRG | 47.92% | 47.82% | 48.60% | 43.92% | 47.07% |
| Great Plains Energy Incorporated | EVRG | 48.66% | 48.47% | 49.26% | 46.51% | 48.23% |
| Westar Energy (KPL) | EVRG | 42.88% | 43.14% | 43.69% | 44.28% | 43.50% |
| Westar Energy, Inc. | EVRG | 33.22% | 33.44% | 34.01% | 34.48% | 33.79% |
| Cleveland Electric Illuminating Company | FE | 32.81% | 32.92% | 44.46% | 44.41% | 38.65% |
| FirstEnergy Pennsylvania Electric Company | FE | 47.29% | 50.59% | 51.28% | 51.35% | 50.13% |
| Jersey Central Power & Light Company | FE | 32.03% | 24.66% | 25.08% | 33.49% | 28.81% |
| Metropolitan Edison Company | FE | | | | | |
| Monongahela Power Company | FE | 46.42% | 46.84% | 47.88% | 53.90% | 48.76% |
| Ohio Edison Company | FE | 45.11% | 45.70% | 46.73% | 46.67% | 46.05% |
| Pennsylvania Electric Company | FE | | | | | |
| Pennsylvania Power Company | FE | | | | | |
| Potomac Edison Company | FE | 48.28% | 49.10% | 49.44% | 49.69% | 49.13% |
| Toledo Edison Company | FE | 44.56% | 44.59% | 45.17% | 45.02% | 44.83% |
| West Penn Power Company | FE | | | | | |
| Idaho Power Co. | IDA | 50.05% | 50.38% | 48.43% | 50.54% | 49.85% |
| Florida Power & Light Company | NEE | 40.02% | 40.53% | 40.87% | 37.32% | 39.69% |
| Oklahoma Gas and Electric Company | OGE | 46.75% | 46.67% | 46.92% | 46.33% | 46.67% |
| Public Service Company of New Mexico | TXNM | 49.90% | 49.40% | 50.70% | 49.27% | 49.82% |
| Portland General Electric Company | POR | 54.43% | 55.04% | 56.06% | 56.24% | 55.44% |
| Kentucky Utilities Company | PPL | 45.52% | 45.86% | 45.83% | 46.46% | 45.92% |
| Louisville Gas and Electric Company | PPL | 46.31% | 46.68% | 46.78% | 47.13% | 46.72% |
| Narragansett Electric Company | PPL | 37.10% | 37.52% | 38.85% | 39.97% | 38.36% |
| PPL Electric Utilities Corporation | PPL | 43.71% | 43.66% | 43.85% | 44.08% | 43.82% |
| Alabama Power Company | SO | 46.12% | 46.03% | 46.44% | 46.67% | 46.31% |
| Georgia Power Company | SO | 43.47% | 42.53% | 44.43% | 44.86% | 43.82% |
| Mississippi Power Company | SO | 44.69% | 44.38% | 44.75% | 47.05% | 45.22% |
| Northern States Power Company - MN | XEL | 46.63% | 47.10% | 47.78% | 48.29% | 47.45% |
| Northern States Power Company - WI | XEL | 46.77% | 47.03% | 47.37% | 45.14% | 46.57% |
| Public Service Company of Colorado | XEL | 44.79% | 44.79% | 45.62% | 43.27% | 44.62% |
| Southwestern Public Service Company | XEL | 45.83% | 45.72% | 45.71% | 45.79% | 45.76% |

Notes:
[1] Ratios are weighted by actual common capital, preferred capital, and long-term debt of Operating Subsidiaries.
[2] Operating Subsidiaries with data listed as N/A from SNL Financial have been excluded from the analysis.

Estimates of Return on Fair Value Rate Base Increment

**Scenario 1: Real Risk Free Rate -- Projected Estimate**

Step 1

| | |
|---|---|
| Consumer Price Index (YoY % Change) [1] | |
| 2026-2030 | 2.20% |
| 2031-2035 | 2.20% |
| Average | 2.20% |

| | |
|---|---|
| Consumer Price Index (All-Urban) [2] | |
| 2026 | 3.27 |
| 2035 | 3.96 |
| Compound Annual Growth Rate | 2.17% |
| | |
| GDP Chain-type Price Index (2009=1.000) [2] | |
| 2026 | 1.41 |
| 2035 | 1.73 |
| Compound Annual Growth Rate | 2.27% |
| | |
| **Average Inflation Forecast** | **2.21%** |

Step 2

| | |
|---|---|
| Nominal U.S. Treasury Bond Yield, 30-year [1] | |
| 2026-2030 | 4.30% |
| 2031-2035 | 4.20% |
| | 4.25% |
| | |
| **Real Risk-Free Rate [3]** | **1.99%** |

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024, at 14

[2] Energy Information Administration, Annual Energy Outlook 2023, Table 20

[3] Equals (4.25% + 1) / (1 + 2.21%) − 1

Estimates of Return on Fair Value Rate Base Increment

**Scenario 2: Real Risk Free Rate -- Projected Estimate**

| | | |
|---|---|---|
| Nominal U.S. Treasury Bond Yield, 30-year [1] | | |
| Projection period: | 2026-2030 | 4.30% |
| Projection period: | 2031-2035 | 4.20% |
| | | 4.25% |
| 2025 average yield on 30-year U.S. Treasury Bonds [2] | | 4.71% |
| 2025 average yield on 30-year U.S. Treasury Inflation Protected Securities [3] | | 2.40% |
| | | 2.31% |
| **Real Risk-Free Rate [4]** | | **1.94%** |

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024, at 14

[2] Source: https://home.treasury.gov/resource-center/data-chart-center/interest-rates/TextView?type=daily_treasury_yield_curve&field_tdr_date_value=2025

[3] Source: https://home.treasury.gov/resource-center/data-chart-center/interest-rates/TextView?type=daily_treasury_real_yield_curve&field_tdr_date_value=2025

As of April 11, 2025

[4] Equals 4.25% - 2.31%

Estimates of Return on Fair Value Rate Base Increment

**Scenario 3: Real Risk Free Rate -- Normalized Risk-Free Rate**

| | |
|---|---|
| Nominal Risk Free Rate [1] | 4.76% |
| 2025 average yield on 30-year U.S. Treasury Bonds [2] | 4.71% |
| 2025 average yield on 30-year U.S. Treasury Inflation Protected Securities [3] | 2.40% |
| | 2.31% |
| **Real Risk-Free Rate [4]** | **2.45%** |

Notes:

[1] Kroll Cost of Capital Recommendations and Potential Upcoming Changes – March 2025 Update, and [2]

[2] Source: https://home.treasury.gov/resource-center/data-chart-center/interest-rates/TextView?type=daily_treasury_yield_curve&field_tdr_date_value=2025

[3] Source: https://home.treasury.gov/resource-center/data-chart-center/interest-rates/TextView?type=daily_treasury_real_yield_curve&field_tdr_date_value=2025

As of April 11, 2025

[4] Equals 4.76% - 2.31%

Estimates of Return on Fair Value Rate Base Increment

Real Risk-Free Rate Estimates

| | |
|---|---|
| Scenario 1 | 1.99% |
| Scenario 2 | 1.94% |
| Scenario 3 | 2.45% |
| Mean | 2.13% |

**FVI Cost Rate Recommendations**

| | |
|---|---|
| Recommended rate [1] | 2.13% |
| APS requested rate | **1.00%** |

Notes:
[1] Equals the mean of the three scenarios