

Appendix C

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

New York Power Authority

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Docket No. ER25-____-000

**DIRECT TESTIMONY
OF
JOSHUA C. NOWAK**

**ON BEHALF OF
NEW YORK POWER AUTHORITY**

October 24, 2024

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I. INTRODUCTION AND QUALIFICATIONS

Q1. PLEASE STATE YOUR NAME, BY WHOM YOU ARE EMPLOYED AND BUSINESS.

A1. My name is Joshua C. Nowak. I am employed by Concentric Energy Advisors, Inc. (“Concentric”) as a Vice President. Concentric is a management consulting and economic advisory firm, focused on the North American energy and water industries. Based in Marlborough, Massachusetts and Washington, D.C., 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. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

Q2. PLEASE DESCRIBE YOUR EXPERIENCE IN THE ENERGY AND UTILITY INDUSTRIES AND YOUR EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS.

A2. I hold a Bachelor's degree in Economics from Boston College and have more than 15 years of experience in providing economic, financial, and strategic advisory services. As a consultant, I advise clients in regulated utility industries and have provided testimony regarding financial matters before multiple regulatory agencies. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. I have provided testimony before the Federal Energy Regulatory Commission ("FERC" or "Commission") as well as state and provincial jurisdictions in the United States ("US") and Canada. Prior to joining Concentric in 2018, I was employed by National Grid USA where I was responsible for regulatory filings related to the cost of capital across the company's multiple US operating companies and service territories. A summary of my professional and educational background is presented in Exhibit No. NYPA-101.

Q3. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?

A3. I am submitting this testimony on behalf of New York Power Authority ("NYPA") as it relates to the appropriate Return on Equity ("ROE")¹ and capital structure for NYPA's transmission business.

¹ I use the terms "ROE" and "cost of equity" interchangeably throughout my Direct Testimony.

1 **II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY**

2 **Q4. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

3 A4. NYPA asked me to prepare an independent estimate of its cost of equity for its FERC-
 4 regulated transmission business and recommend to the Commission a base ROE rate that
 5 is fair, allows NYPA to attract capital on reasonable terms and maintain its financial
 6 integrity by appropriately recognizing transmission investment risk in the current economic
 7 environment, and results in just and reasonable rates for NYPA. The data presented in
 8 Exhibit No. NYPA-102, Schedules 1 through 5, which have been prepared by me or under
 9 my direction, supports my analyses and recommendations. In the remainder of my
 10 testimony, all references to “Schedules” are to the schedules contained in Exhibit No.
 11 NYPA-102.

12 **Q5. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT YOU**
 13 **CONDUCTED TO SUPPORT YOUR ROE RECOMMENDATION.**

14 A5. Consistent with the Commission’s decision in Opinion Nos. 569, 569-A and 569-B and the
 15 recent MISO Order on Remand,² I have considered the results of multiple methodologies
 16 to estimate the ROE for NYPA. Because each of the models used to estimate the cost of
 17 equity are subject to limiting assumptions or other methodological constraints, investors
 18 do not rely solely on one model when establishing their return requirements. Instead, they
 19 consider the results of multiple models, similar to what I have used here, to make their
 20 investment decisions.

² *Ass’n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569, 169 FERC ¶ 61,129 (2019), *order on reh’g*, Opinion No. 569-A, 171 FERC ¶ 61,154 (2020) (“Opinion No. 569-A”), *order addressing reh’g arguments and setting aside prior order in part*, Opinion No. 569-B, 173 FERC ¶ 61,159 (2020) (“Opinion No. 569-B”), *Order on Remand*, 189 FERC ¶ 61,036 (2024) (“MISO Order on Remand”).

1 My ROE recommendation is based primarily on the range of results that I derive from two
 2 financial models: 1) the Two-Step Discounted Cash Flow model (“DCF”); and 2) the
 3 Capital Asset Pricing Model (“CAPM”). However, I have also included the results of the
 4 Bond Yield Plus Risk Premium approach (“Risk Premium”). In *MISO Transmission*
 5 *Owners v. FERC*,³ the U.S. Court of Appeals for the District of Columbia Circuit (the
 6 “Court”) found in 2022 that FERC failed to offer a reasoned explanation for its decision to
 7 include the Risk Premium model in Opinion Nos. 569-A and 569-B, after rejecting it in
 8 Opinion No. 569. FERC recently issued the MISO Order on Remand in response to the
 9 Court’s decision and concluded “that the record fails to support the inclusion of the Risk
 10 Premium model in the Commission’s ROE methodology.”⁴ Notably, FERC also affirmed
 11 the continued inclusion of the DCF and CAPM indicating “[t]he record in this proceeding
 12 does not support making any further modifications to the Commission’s ROE
 13 methodology.”⁵ Because the Commission has relied on the Risk Premium model in other
 14 decisions in recent years (*see e.g.*, Opinion Nos. 575⁶ and 879,⁷ and other recent orders⁸)
 15 and the MISO Order on Remand did not “foreclose the use of a Risk Premium model in
 16 future proceedings,”⁹ I considered the results both excluding and including the Risk

³ *MISO Transmission Owners v. FERC*, 45 F.4th 248, 264 (D.C. Cir. 2022). The Court affirmed all other aspects of the Commission’s Opinion No. 569 series of orders.

⁴ MISO Order on Remand, P 23.

⁵ MISO Order on Remand, P 24.

⁶ *Entergy Arkansas, Inc.*, Opinion No. 575, 175 FERC ¶ 61,136, PP 244-245, *order on reh’g*, 176 FERC ¶ 61,155 (2021).

⁷ *DATC Path 15, LLC*, Opinion No. 879, 177 FERC ¶ 61,115, PP 24, 213-214 (2021).

⁸ *Pac. Gas and Elec. Co.*, 178 FERC ¶ 61,175, PP 1, 20, 266 (2022); *Constellation Mystic Power, LLC*, 176 FERC ¶ 61,019, PP 15, 176, *order on reh’g*, 177 FERC ¶ 61,106 (2021), *order on reh’g*, 178 FERC ¶ 61,116 (2022).

⁹ MISO Order on Remand, P 24.

1 Premium approach. However, my recommendation is based on the Commission's preferred
2 two-model approach.

3 My recommendation also considered the current general economic and capital market
4 environment. I specifically considered the rapidly evolving market environment in which
5 the U.S. Federal Reserve ("Federal Reserve") aggressively tightened monetary policy and
6 increased interest rates to satisfy its price stability objectives, though it recently reduced
7 the federal funds rate by 0.50 percent.¹⁰ Because each model's assumptions are affected
8 differently by market conditions, the use of multiple methodologies minimizes the reliance
9 on any one set of assumptions. Using more than one model better informs FERC's
10 determining the zone of reasonableness and the base ROE.

11 **Q6. WHAT IS YOUR CONCLUSION REGARDING THE APPROPRIATE COST OF**
12 **EQUITY FOR USE IN DETERMINING NYPA'S ANNUAL TRANSMISSION**
13 **REVENUE REQUIREMENT?**

14 A6. The ROE results presented in my Direct Testimony indicate a composite zone of
15 reasonableness from 8.87 percent to 12.32 percent based on the results of the two models
16 (i.e., DCF and CAPM). If the Risk Premium analysis were included, the zone of
17 reasonableness based on the results of three models (i.e., DCF, CAPM, and Risk Premium)
18 would be 8.80 percent to 12.25 percent. The proxy group median ROE applying the two-
19 model method is 10.98 percent. The three-model method (i.e., DCF, CAPM, and Risk
20 Premium) would yield a median ROE result of 10.78 percent. FERC considers the median
21 value the appropriate measure given its previous findings on the measure of central

¹⁰ FOMC Press Release (September 18, 2024). Available here:
<https://www.federalreserve.gov/monetarypolicy/files/monetary20240918a1.pdf>.

tendency for a single utility, such as NYPA.¹¹ Based on the Commission’s reasoning supporting the two-model method as the more appropriate approach as explained in the MISO Order on Remand, I recommend the Commission authorize a base ROE of 10.98 percent for NYPA.¹² My analysis is based on a proxy group of investor-owned utilities. While NYPA does not have equity securities traded in the marketplace, NYPA invests in utility assets like those held by investor-owned utilities in the proxy group. It is imperative that NYPA is afforded the opportunity to earn a reasonable return on its net position (equivalent to equity for an investor-owned utility) for continued access to capital markets, enabling NYPA to invest in critical segments of transmission infrastructure throughout New York.

III. REGULATORY PRINCIPLES

Q7. PLEASE DESCRIBE THE GUIDING PRINCIPLES USED IN ESTABLISHING THE COST OF CAPITAL FOR A REGULATED UTILITY.

A7. Utilities are entitled by law and well-established precedent 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 U.S. Supreme Court decisions.¹³ Utility

¹¹ See Opinion No. 569-B, P 18, n.53 (quoting Opinion No. 569, P 344): “In determining the central tendency of the zone of reasonableness, the Commission has distinguished between cases involving an RTO-wide ROE and cases involving the ROE of a single utility (or pipeline). In cases involving an RTO-wide ROE, the Commission has held that the midpoint [*i.e.* the average of the high and low values] is appropriate. The Commission has reasoned that, because an RTO-wide ROE will apply to a diverse set of companies, the range of results becomes as important as the central value, and the midpoint fully considers that range, because it is derived directly from the endpoints of the range By contrast, in cases involving a single utility, the Commission has held that using the median is appropriate, because the median ‘is the most accurate measure of central tendency for a single utility of average risk.’” [clarification added]

¹² Based on market data through September 30, 2024.

¹³ *Fed. Power Comm’n v. Hope Nat. Gas Co.*, 320 U.S. 591 (1944) (“*Hope*”); *Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm’n of W. Va.*, 262 U.S. 679 (1923) (“*Bluefield*”).

regulators across the country, including FERC, adhere to this doctrine when engaging in ratemaking. FERC described this standard in the following terms:

[W]e are guided by the principle, enunciated by the Supreme Court, that an approved ROE should be “reasonably sufficient to assure confidence in the financial soundness of the utility [or, in this case, utilities] and should be adequate under efficient and economical management, to maintain and support its credit, and enable it to raise the money necessary for the proper discharge of its public duties.”¹⁴

FERC also has explained that “a key consideration in determining just and reasonable utility ROEs is determining what ROE a utility must offer in order to attract capital, i.e., induce investors to invest in the utility in light of its risk profile.”¹⁵

Q8. PLEASE BRIEFLY DISCUSS HOW THOSE PRINCIPLES APPLY IN THE CONTEXT OF A REGULATED RATE OF RETURN.

A8. 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.

The ROE cannot be derived solely through any single quantitative metric or model, however. To properly estimate the ROE, the financial, regulatory, and economic context in which the analysis takes place must also be considered. The DCF and CAPM approaches, while fundamental to the ROE determination, are still only models. The results of any individual model cannot be mechanistically applied without also considering

¹⁴ *Midwest Indep. Transmission Sys. Operator, Inc.*, 106 FERC ¶ 61,302, P 13 (2004) (quoting *Bluefield*, 262 U.S. at 693).

¹⁵ *Coakley v. Bangor Hydro-Elec. Co.*, 165 FERC ¶ 61,030, PP 33, 44 (2018).

1 informed judgment, the context of capital market conditions, and the relative risk of any
 2 company as compared to the proxy group companies. FERC has recognized the problem
 3 of “model risk” and accordingly has stated that it does not intend to rely upon the results
 4 of only one cost of equity model when setting a public utility ROE, but rather relies on
 5 multiple models¹⁶ as I have done with the application of the DCF and CAPM approaches.

6 Also, it is important to note that the U.S. Supreme Court has held that, under the statutory
 7 standard of “just and reasonable,” it is the result reached, not the method employed, which
 8 is controlling.¹⁷ Consequently, it is appropriate to consider a variety of approaches and
 9 data sources and to also apply informed judgment when arriving at a recommended ROE
 10 as I explain below.

11 **IV. ECONOMIC AND CAPITAL MARKET CONDITIONS**

12 **Q9. WHY IS IT IMPORTANT TO CONSIDER THE EFFECTS OF CURRENT AND** 13 **EXPECTED ECONOMIC AND FINANCIAL MARKET CONDITIONS WHEN** 14 **SETTING THE ROE?**

15 A9. It is important to consider current and expected conditions in the general economy and
 16 financial markets because the authorized ROE for a public utility should allow the utility
 17 to attract investor capital at a reasonable cost under current and foreseeable economic and
 18 financial conditions, as underscored by the *Hope* and *Bluefield* decisions discussed
 19 previously. The standard ROE estimation tools, namely the DCF and CAPM approaches,
 20 each reflect the state of the general economy and financial markets by incorporating
 21 specific economic and financial data. These inputs are, however, only samples of the
 22 various economic and market forces that determine a utility’s required return.

¹⁶ Opinion No. 569-A, at P 43.

¹⁷ *Hope*, 320 U.S. at 602.

1 Consideration must also be given to whether the assumptions relied on in the current or
 2 projected market data are appropriate. If investors do not expect current market conditions
 3 to continue in the future, it is possible that the ROE estimation models will not provide an
 4 accurate estimate of investors' forward-looking required return. Therefore, an assessment
 5 of current and projected market conditions is integral to any ROE recommendation.

6 **Q10. WHAT ARE THE KEY FACTORS AFFECTING THE COST OF EQUITY FOR**
 7 **REGULATED UTILITIES IN THE CURRENT AND PROSPECTIVE CAPITAL**
 8 **MARKETS?**

9 A10. The cost of equity for regulated utility companies is affected by several key factors in the
 10 current and prospective capital markets, including the uncertainty regarding the economy,
 11 the impacts of the Federal Reserve's approach to interest rates and inflation, concerns over
 12 interest rates, and the heightened uncertainty and volatility in equity markets and resulting
 13 utility performance, which more recently has lagged the broader market. In this section, I
 14 discuss these factors and how they affect the models I used to estimate the cost of equity
 15 for regulated utilities.

16 **Q11. HOW DOES THE FEDERAL RESERVE'S MONETARY POLICY ACTIONS**
 17 **AFFECT CAPITAL MARKETS AND THE U.S. ECONOMY?**

18 A11. The Federal Reserve is responsible for "conducting the nation's monetary policy by
 19 influencing money and credit conditions in the economy in pursuit of full employment and
 20 stable prices."¹⁸ The Federal Reserve implements monetary policy through raising or
 21 lowering interest rates, which impacts the demand for goods and services. This, in turn,
 22 impacts employment and inflation. Monetary policy has shifted dramatically over the past

¹⁸ Federal Reserve, "The Fed - What is the purpose of the Federal Reserve System?" available at https://www.federalreserve.gov/faqs/about_12594.htm.

several years, in response first to COVID-19, and then to historically high inflation. The capital markets are significantly affected by the Federal Reserve's policy. While the primary monetary policy tool used by the Federal Reserve is the short-term interest rate for overnight interbank loans, it has far-reaching consequences for capital markets and significantly influences long-term interest rates and the cost of equity. As discussed in more detail below, current Federal Reserve policy continues to be focused on inflationary concerns, but it is important to note, even if inflation moderates, that the current monetary policy stance is likely to have a long-lasting effect on capital market conditions.

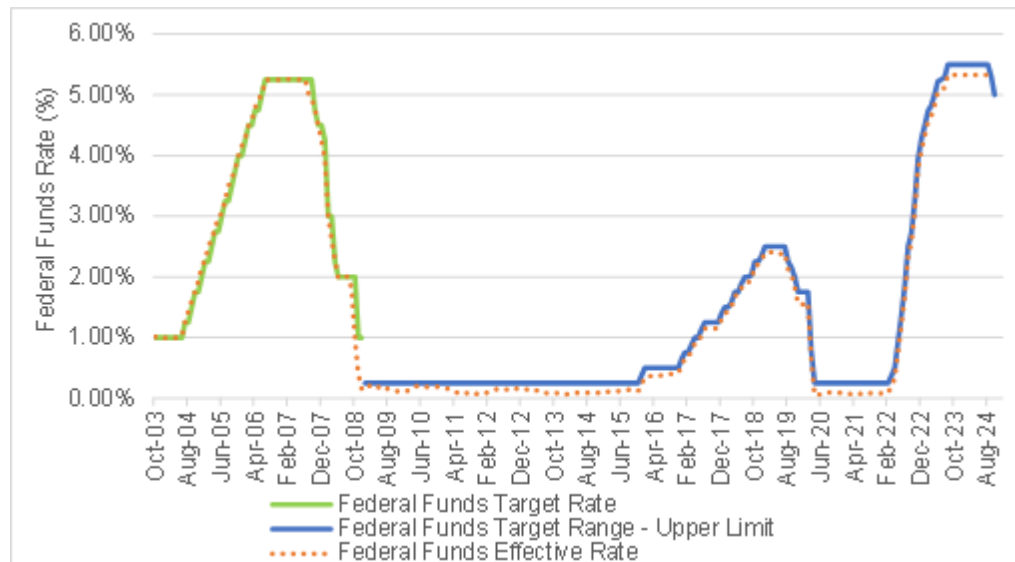
Q12. WHAT STEPS DID THE FEDERAL RESERVE TAKE TO STABILIZE FINANCIAL MARKETS AND SUPPORT THE ECONOMY IN RESPONSE TO PERSISTENT INFLATION?

A12. Inflation surged to historically high levels in 2022, levels not seen since the late-1970s and early-1980s, and the Federal Reserve had little choice but to aggressively battle inflation through raising interest rates. Previously, in response to the economic effects of COVID-19, the Federal Reserve decreased the federal funds rate in March 2020 to a target range of 0.00 percent to 0.25 percent (which remained in effect until March 2022) in addition to other stimulus measures that increased the supply of money in the economy. The Federal Reserve began unwinding its quantitative easing program¹⁹ in 2022 and increased the target interest rate 11 times to a target rate of 5.25 percent to 5.50 percent through August 2024 (the highest level in the last 20 years). As shown in Figure 1 below, the Federal Reserve

¹⁹ Quantitative easing refers to a monetary policy tool in which the Federal Reserve attempts to increase liquidity in the financial system by purchasing long-term government bonds from large banks in an attempt to encourage banks to lend more funds out, which is intended to stimulate economic growth. In June 2022, The Federal Reserve ended its quantitative easing program, instead engaging in quantitative tightening, which is to gradually reduce its asset purchases.

only recently reduced the federal funds rate by 50 basis points to a target rate of 4.75 percent to 5.00 percent.

Figure 1: FOMC Federal Funds Rates²⁰



Despite the recent rate reduction, the Federal Reserve indicated that inflation remains a key consideration for the Federal Open Market Committee (“FOMC” or “Committee”):

Recent indicators suggest that economic activity has continued to expand at a solid pace. Job gains have slowed, and the unemployment rate has moved up but remains low. Inflation has made further progress toward the Committee’s 2 percent objective but remains somewhat elevated.

The Committee seeks to achieve maximum employment and inflation at the rate of 2 percent over the longer run. The Committee has gained greater confidence that inflation is moving sustainably toward 2 percent, and judges that the risks to achieving its employment and inflation goals are roughly in balance. The economic outlook is uncertain, and the Committee is attentive to the risks to both sides of its dual mandate.

In light of the progress on inflation and the balance of risks, the Committee decided to lower the target range for the federal funds rate by 1/2 percentage point

²⁰ Prior to 2008, the Federal Open Market Committee set a Federal Funds Target Rate, and subsequently shifted to a Federal Funds Target Range (of that range, the upper limit is shown in Figure 1). The Federal Funds Effective Rate reflects the weighted median of actual overnight federal funds transactions during the previous business day.

to 4-3/4 to 5 percent. In considering additional adjustments to the target range for the federal funds rate, the Committee will carefully assess incoming data, the evolving outlook, and the balance of risks. The Committee will continue reducing its holdings of Treasury securities and agency debt and agency mortgage-backed securities. The Committee is strongly committed to supporting maximum employment and returning inflation to its 2 percent objective.

In assessing the appropriate stance of monetary policy, the Committee will continue to monitor the implications of incoming information for the economic outlook. The Committee would be prepared to adjust the stance of monetary policy as appropriate if risks emerge that could impede the attainment of the Committee's goals. The Committee's assessments will take into account a wide range of information, including readings on labor market conditions, inflation pressures and inflation expectations, and financial and international developments.²¹

Although year-over-year inflation rates have eased over the last several months—increasing just 2.40 percent from September 2023 to September 2024, down from the high of 9.10 percent in June 2022, as measured by the Consumer Price Index (“CPI”)—the Federal Reserve also affirmed that inflation “remains somewhat elevated.”^{22,23}

Q13. HOW HAVE CAPITAL MARKETS RESPONDED OVER THIS TIME PERIOD?

A13. In response to monetary policy, high inflation and disappointing earnings reports, capital markets over the past several years have been volatile, and the stock market has lost substantial value. While the S&P 500 closed at record highs on the first trading day of 2022,²⁴ by mid-June of that year, the S&P 500 was down more than 21 percent.

²¹ FOMC Press Release (September 18, 2024). Available here:

<https://www.federalreserve.gov/monetarypolicy/files/monetary20240918a1.pdf>

²² FOMC Press Release (September 18, 2024). Available here:

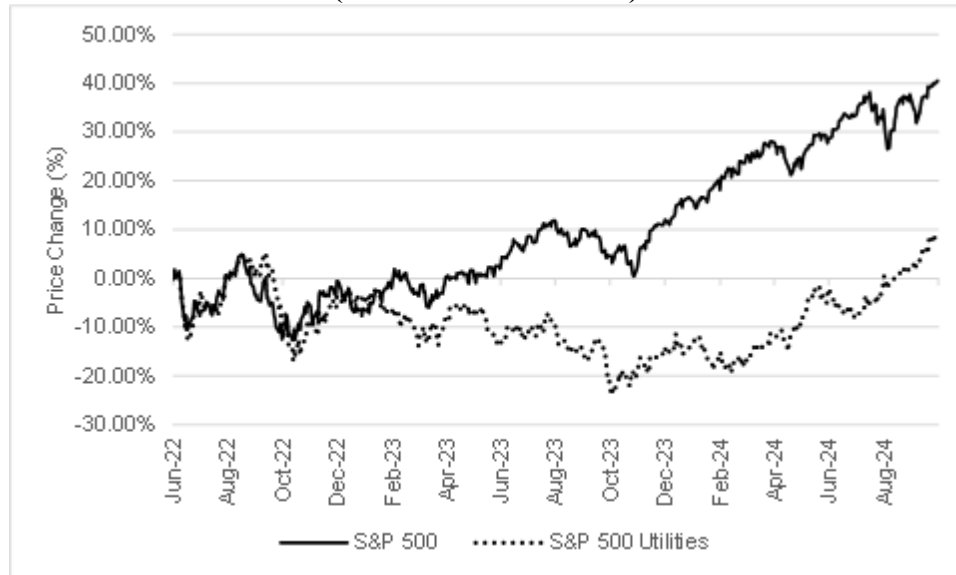
<https://www.federalreserve.gov/monetarypolicy/files/monetary20240918a1.pdf>

²³ Source: Bureau of Labor Statistics, <https://www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm>.

²⁴ CNBC, “The Dow Jones Industrial Average rose 246.76 points, or 0.6%, to close at 36,585.06. The S&P 500 also rose 0.6%, to close at 4,796.56,” January 2, 2022, available at <https://www.cnbc.com/2022/01/02/futures-stock-market-news-open-to-close.html>.

While the S&P 500 has steadily gained ground since that time, the utility sector has fared far worse. Since June 2022 at the peak of inflation, while the S&P 500 Index increased more than 40 percent through September 2024, the S&P Utilities Index has increased by less than 10 percent on a price change basis, as shown in Figure 2.

**Figure 2: S&P 500 and S&P 500 Utilities Indices Performance
(6/1/2022 to 9/30/2024)**

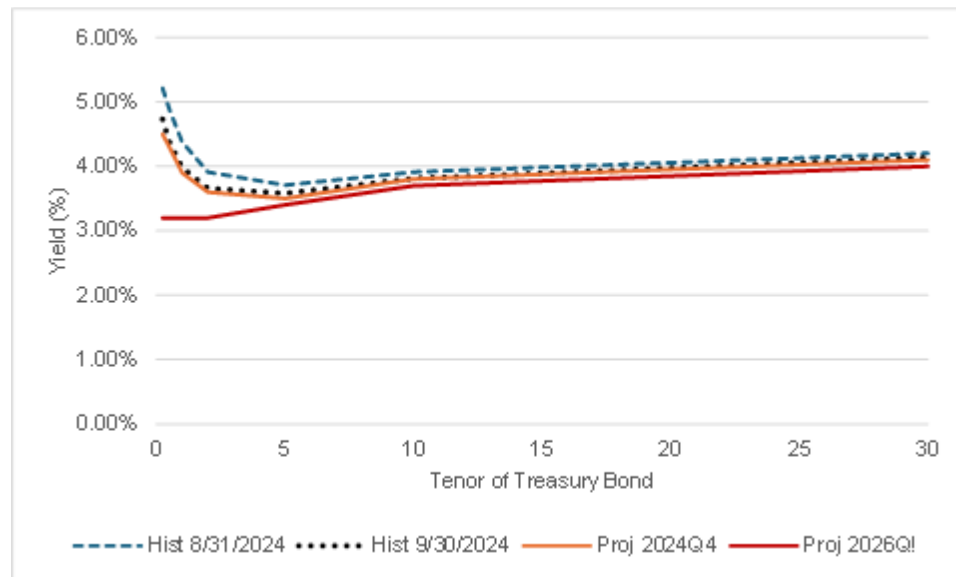


Q14. WHAT ARE EXPECTATIONS FOR LONG-TERM INTEREST RATES?

A14. Despite the recent 50-basis-point reduction on the federal funds rate, long-term interest rates are not expected to change much in the coming years. That is, the change in the federal funds rate is primarily influencing short-term interest rates. As shown in Figure 3 below, the yield curve is currently inverted with short-term interest rates higher than long-term interest rates. Figure 3 below includes the yield as of August 31, 2024 and September 30, 2024 for 3-month, 6-month, 1-year, 2-year, 5-year, 10-year, and 30-year treasury securities. In addition, projections from Blue Chip Financial Forecasts demonstrate that the expectation for continued reductions in the federal funds rate will cause near-term

yields to decline over the next year while long-term rates are expected to remain near current levels.

Figure 3: Current and Projected Interest Rates

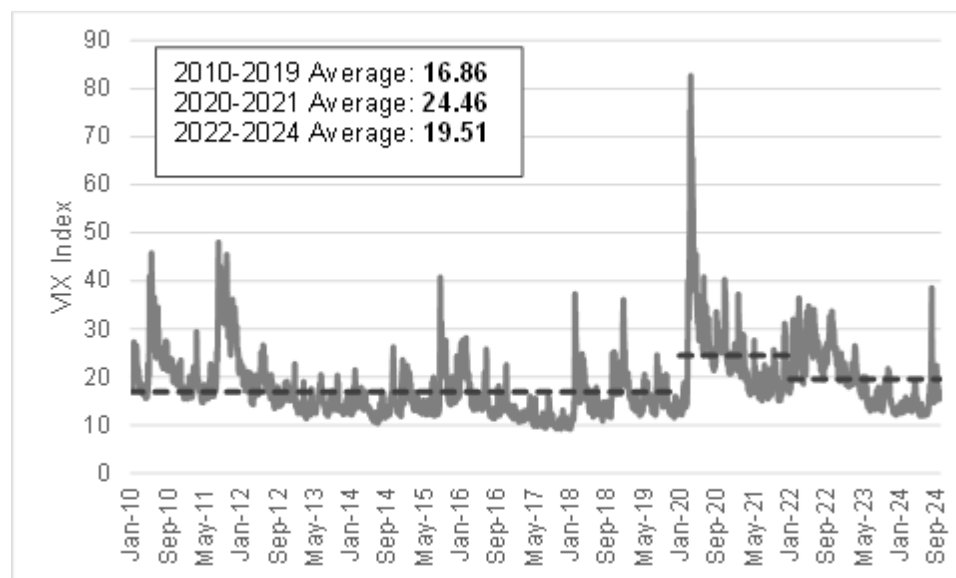


Q15. ARE ECONOMIC CONDITIONS EXPECTED TO STABILIZE IN THE NEAR TERM?

A15. The economy remains in a tenuous phase of the business cycle with concerns over a potential recession, persistent inflation, and persistently high interest rates. As such, capital market conditions continue to be unstable as interest rates remain elevated. The Chicago Board Options Exchange (“CBOE”) Volatility Index (“VIX”) has remained above long-term historical levels, indicating stock investors remain anxious about the economy and company earnings. The VIX, a measure of expected price fluctuations in the S&P 500, reached 82.7 on March 16, 2020, in response to the pandemic. As a point of comparison, the VIX last exceeded 80 in November 2008 during the financial crisis and Great Recession of 2008/09. The VIX has continued to reach levels above 25.0 in 2023 and 2024. As shown in Figure 4, the average level in 2022-2024 has been 19.51 through September 30, 2024,

1 compared to the average of 16.86 from 2010-2019.²⁵ This indicates that equity market
 2 volatility levels have partially settled but continue to remain above the historical mean.
 3 Note that the VIX reached a recent peak in August 2024 of 38.57, demonstrating the
 4 tenuous position of equity markets as the Federal Reserve considers ongoing interest rate
 5 changes.

6 **Figure 4: S&P 500 and S&P 500 Utilities Indices Performance as measured by**
 7 **Volatility Index (VIX) (6/1/2022 to 9/30/2024)**



8
 9 Similarly, the most recent Consumer Confidence Survey Expectations Index findings
 10 (based on consumers' short-term economic outlook) declined and is now just above 80 (the
 11 threshold that typically signals a recession ahead for values below 80) at 81.7 in September
 12 2024. According to the Conference Board, "Consumer confidence dropped in September
 13 to near the bottom of the narrow range that has prevailed over the past two years."²⁶ While

²⁵ Source: Chicago Board Options Exchange (CBOE). Available at https://www.cboe.com/tradable_products/vix/vix_historical_data/.

²⁶ The Conference Board. Consumer Confidence Survey Press Release September 24, 2024. Available at <https://www.conference-board.org/topics/consumer-confidence>

81.7 is above the threshold of 80, the Conference Board elaborated “September’s decline was the largest since August 2021 and all five components of the Index deteriorated. Consumers’ assessments of current business conditions turned negative while views of the current labor market situation softened further.”²⁷ This suggests further uncertainty in equity markets.

Q16. HAS THE COST OF EQUITY FOR REGULATED UTILITIES BEEN AFFECTED BY THESE CIRCUMSTANCES?

A16. Yes. The cost of equity for regulated utility companies has been affected by the market conditions during this period. With interest rates at sustained, elevated levels, utility companies are no longer viewed as a safe haven. With Treasury yields in the range of 3.81 percent to 4.93 percent,²⁸ utility dividend yields in a range near 3.78 percent (*see* Exhibit No. NYPA-102, Schedule 2.1) fail to offer investors a sufficient risk premium relative to risk-free investments in Treasuries. Further, the utility industry is capital-intensive, requiring significant investments, meaning that utility companies will also have to bear the costs of higher interest rates to access capital markets. The expectation for sustained, higher interest rates will continue to put upward pressure on the cost of capital, causing investors to continue to require higher equity returns for investments in the utility industry.

Q17. HOW HAS THE CURRENT ECONOMIC ENVIRONMENT AFFECTED THE CREDIT RATINGS FOR UTILITIES?

A17. Since the market bottom in September 2022, the utilities sector has lagged the broader market by approximately 45 percent cumulatively.²⁹ According to a recent report by S&P

²⁷ *Ibid.*

²⁸ Source: Federal Reserve. As of September 30, 2024 the yield on the 1-month Treasury bill was 4.93 percent, and the yield on the 10-year Treasury bond was 3.81 percent.

²⁹ State Street Global Advisors. “Sector Opportunities for Q3 2024.” July 16, 2024. Available at: <https://www.ssga.com/us/en/intermediary/insights/sector-opportunities-for-q3-2024>

Global Ratings (“S&P”) on utilities, “credit quality weakened again in 2021 and represented the second consecutive year that downgrades outpaced upgrades,” primarily due to weak financial measures and governance and environmental related risks.³⁰ In particular, S&P views physical and environmental risks associated with natural disasters that could potentially lead to higher costs as a possible credit constraint going-forward.³¹ Fitch Ratings (“Fitch”) points to capital spending, elevated interest rates, and high fuel prices creating cost pressures leading to a “deteriorating” outlook on the utilities sector.³² While the views of rating agencies represent an important consideration, they are not the only factor that equity investors consider. The important distinction is that credit rating agencies are primarily focused on the ability of a utility to pay its debts, while equity analysts and institutional investors are more concerned with profitability and value creation.

Q18. WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECTS OF THE CURRENT MARKET ENVIRONMENT ON THE COST OF EQUITY FOR NYPA?

A18. The current capital market conditions continue to be heavily influenced by monetary policy aimed at mitigating inflationary pressures. This has caused both short-term and long-term interest rates to remain higher than the recent past. As a practical matter, investors consider a range of opportunities for investing capital, which includes bonds. With the sustained elevated interest rates, utilities are less attractive absent a corresponding increase in equity

³⁰ S&P Global Ratings, “For the First Time Ever, The Median Investor-Owned Utility Ratings Falls to The ‘BBB’ Category,” January 20, 2022.

³¹ Of particular relevance to the utility industry, these include costs related to wildfires, severe winter storms, hurricanes, and tornadoes and associated higher costs that may be partially disallowed by regulators for future recovery.

³² S&P Global Market Intelligence, “Fitch sees various cost pressures behind ‘deteriorating’ US utilities outlook,” November 14, 2022.

returns. With long-term interest rates expected to remain above levels observed in recent years, this will continue to put upward pressure on the cost of capital for utilities. Therefore, it is important that these factors are properly accounted for when developing the cost of equity models and final recommendations.

V. PROXY GROUP SELECTION

Q19. BEFORE ADDRESSING YOUR PROXY GROUP SELECTION CRITERIA, PLEASE PROVIDE A BRIEF SUMMARY OF NYPA AND ITS OPERATIONS.

A19. NYPA is a corporate municipal instrumentality and a political subdivision of the State of New York engaged in the generation, transmission, and sale of electricity at wholesale and retail throughout New York. NYPA has taken responsibility for constructing, owning, and operating critical segments of transmission infrastructure throughout New York and is the largest state public power utility in the United States. NYPA operates 16 generating stations and 1,569 circuit-miles of transmission lines in the State of New York. NYPA serves large and small businesses, not-for-profit organizations, municipal electric systems, rural electric cooperatives, and government entities.

Q20. PLEASE DESCRIBE THE SPECIFIC SCREENING CRITERIA YOU HAVE UTILIZED TO SELECT YOUR PROXY GROUP.

A20. I have used the screening criteria prescribed by FERC to select a proxy group for cases involving electric transmission assets. Specifically, I began with the thirty-six companies that Value Line classifies as “Electric Utilities” and then included those companies that consistently pay quarterly cash dividends, with no dividend cuts in the six-month study period, and have had no major merger activity in the six-month study period. In addition to these criteria, FERC typically requires each proxy company’s credit rating to be within

one notch above or below the S&P and Moody's Investors Service ("Moody's") rating of the entity being evaluated.

Q21. WHAT IS NYPA'S CREDIT RATING?

A21. NYPA is rated AA by S&P and Aa1 by Moody's. As a practical matter, there are no companies that Value Line classifies as "Electric Utilities" that are within one notch of either of NYPA's S&P and Moody's credit ratings. Therefore, I included all companies with an investment grade credit rating from S&P or Moody's. I explain why this is appropriate below.

Q22. WHAT IS THE COMPOSITION OF YOUR PROXY GROUP?

A22. Based on the screening criteria discussed above, I developed a proxy group consisting of the twenty-eight companies shown in Figure 5, below. Please refer to Schedule 1 for my proxy group screening data and results.

1

Figure 5: Proxy Group

Company	Ticker
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avista Corporation	AVA
Black Hills Corporation	BKH
CMS Energy Corporation	CMS
Consolidated Edison, Inc.	ED
DTE Energy Company	DTE
Duke Energy Corporation	DUK
Edison International	EIX
Entergy Corporation	ETR
Exelon Corporation	EXC
Eversource, Inc.	EVERG
IDACORP, Inc.	IDA
MGE Energy, Inc. ³³	MGEE
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE
Otter Tail Corporation	OTTR
Pinnacle West Capital Corporation	PNW
Portland General Electric Company	POR
PPL Corporation	PPL
Public Service Enterprise Group Inc.	PEG
Sempra Energy	SRE
Southern Company	SO
TXNM Energy, Inc.	TXNM
Wisconsin Energy Corporation	WEC
Xcel Energy Inc.	XEL

2

³³ MGE Energy, Inc. is not rated by S&P or Moody's but is included in the proxy group because its primary utility subsidiary, Madison Gas and Electric Company, maintains investment grade ratings from both S&P and Moody's.

1 **Q23. WHY IS A PROXY GROUP COMPOSED OF PUBLICLY TRADED INVESTOR-**
 2 **OWNED COMPANIES APPROPRIATE TO ESTIMATE AN ROE FOR A PUBLIC**
 3 **ENTITY, SUCH AS NYPA?**

4 A23. The investor-owned companies in my proxy group reflect a similar risk level for
 5 investments in transmission facilities like the risks that NYPA faces. Although NYPA
 6 does not have equity securities traded in the marketplace, companies in the proxy group do
 7 and therefore can serve as a proxy for NYPA's cost of common equity (referred to as "Net
 8 Position" for NYPA). In a 2005 opinion, FERC affirmed an initial decision holding, on
 9 behalf of the City of Vernon, California, stating "[w]e find that the DCF model for a non
 10 investor-owned entity such as Vernon is appropriate. As staff correctly points out in its
 11 Brief Opposing Exceptions, it is possible, in fact, to perform a DCF analysis for Vernon,
 12 utilizing a proxy group of similar-risk publicly traded companies."³⁴ This is consistent with
 13 corporate financing principles which hold that the use of funds, not the source of funds,
 14 determines the cost of capital for an investment. Since NYPA invests in utility assets like
 15 those held by investor-owned utilities in the proxy group, it is appropriate to perform the
 16 ROE analyses for NYPA utilizing a proxy group of similar-risk publicly traded companies.

17 **Q24. WHY IS IT APPROPRIATE TO INCLUDE ALL COMPANIES IN THE PROXY**
 18 **GROUP WITH INVESTMENT GRADE CREDIT RATINGS, INSTEAD OF**
 19 **INCLUDING COMPANIES WITHIN A NOTCH OF THE SUBJECT UTILITY?**

20 A24. Credit ratings are assessments of the likelihood of an entity defaulting on its debt.
 21 However, the purpose of the ROE analysis is to determine the cost of equity, not the cost
 22 of debt. While credit ratings provide investors with relevant information with respect to a
 23 given entity's risk-level, credit ratings are intended to measure the likelihood that an entity

³⁴ 111 FERC ¶ 61,092, Opinion No. 479, City of Vernon, California, Docket Nos. EL00-105-007 and ER00-2019-007, Opinion and Order Affirming Initial Decision as Modified, at 96 and 101-102. April 19, 2005.

will meet its debt-payment obligations. As such, the credit rating will have a direct bearing on debt investors' return requirements. However, equity investors bear the residual risk associated with ownership and have a claim on cash flows only after debt holders are paid. As such, debt and equity securities are exposed to different risks and, therefore, require different returns. For the determination of the cost of equity, the analysis must be from the perspective of equity investors. Credit ratings can be informative to equity investors. For example, equity investors are likely to value an investment-grade utility differently than a non-investment grade utility. However, relying extensively on smaller differences in credit ratings (e.g. credit ratings notches) as a measure of risk to equity investors is misplaced and does not reflect the full range of risk borne by equity investors.

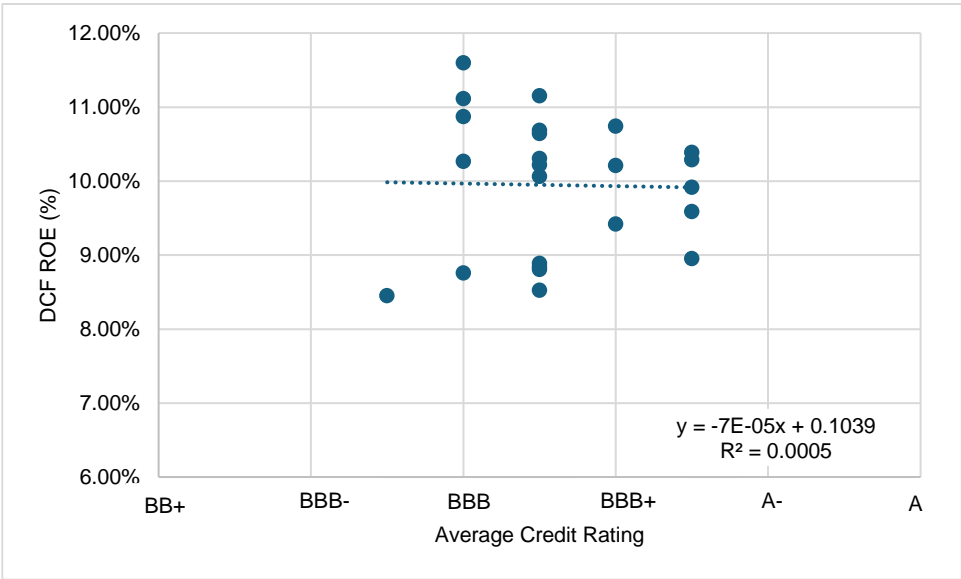
Q25. IS THERE A MEANINGFUL RELATIONSHIP BETWEEN CREDIT RATINGS FOR INVESTMENT GRADE UTILITIES AND THE COST OF EQUITY?

A25. If differences in credit ratings reflected relative levels of risk for equity investors, it is reasonable to expect a correlation between credit ratings and equity investors' required returns. This can be analyzed by comparing the proxy company average credit ratings and estimates of equity investors' required returns as estimated by the DCF and CAPM models. As shown in Figures 6 and 7 below, I performed a linear regression to assess the relationship between the proxy companies' average credit ratings³⁵ and the corresponding DCF and CAPM results.

³⁵ I relied on the average of each company's S&P and Moody's credit rating. For the purpose of this analysis, I considered BBB- equivalent to Baa3, BBB equivalent to Baa2, BBB+ equivalent to Baa1, and A- equivalent to A3, etc.

1

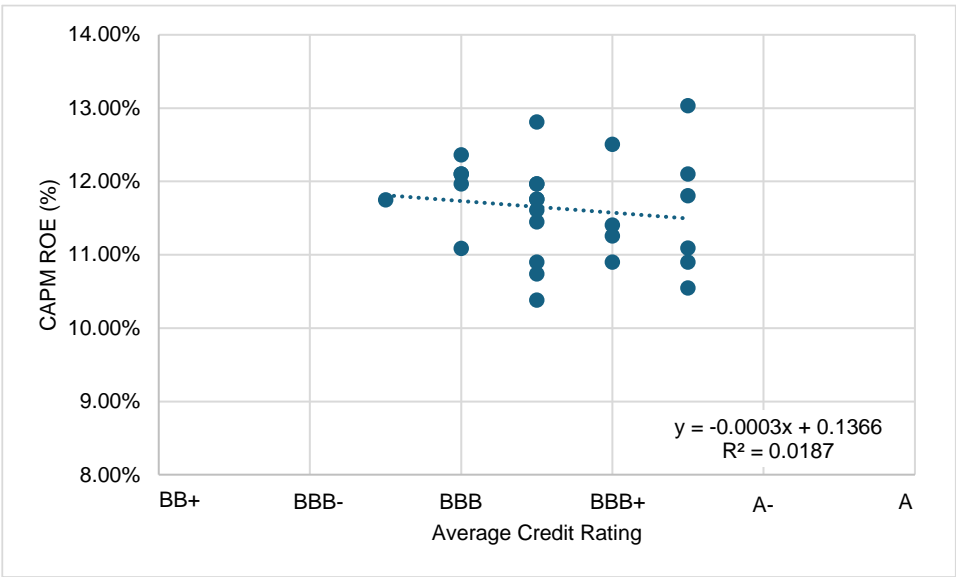
Figure 6: Credit Rating vs DCF ROE Results³⁶



2

3

Figure 7: Credit Rating vs CAPM ROE Results³⁷



4

³⁶ Credit rating based on the average of each company's numerical ranking from S&P and Moody's. The Figure 6 regression analysis does not use results excluded from the DCF analysis (i.e., Black Hills Corporation and Portland General Electric Company) due to anomalous DCF values. OGE Energy Corporation does not have a valid DCF result and was similarly excluded. See discussion below in A32. MGE Energy, Inc. was also excluded because it is not rated by S&P or Moody's.

³⁷ Credit rating based on the average of each company's numerical ranking from S&P and Moody's. There were two exclusions in the Figure 7 regression analysis based on the following: Exelon Corporation does not have a valid CAPM result, and MGE Energy, Inc. is not rated by S&P or Moody's.

1 Based on that analysis, there is no meaningful correlation between investment-grade proxy
2 companies' credit ratings and the required return on equity. The R-Squared statistic
3 highlights that less than 1.00 percent of the variance in the DCF ROE results can be
4 explained by a proxy company's credit rating, and only 1.87 percent of the variance in the
5 CAPM results. These are not statistically significant relationships. Therefore, for the
6 purpose of establishing a proxy group, it is not necessary to exclude companies on the basis
7 of differences in credit ratings for investment-grade utilities. As a practical matter, the vast
8 majority of companies are rated within a narrow band of average credit ratings between
9 BBB and A-. In NYPA's situation, given that no companies meet the Commission's
10 typical requirement that proxy companies have a credit rating within one notch of the
11 subject company, the inclusion of all investment grade companies in the proxy group is
12 appropriate.

13 **VI. DETERMINATION OF THE APPROPRIATE COST OF EQUITY**

14 **Q26. WHAT MODELS DID YOU USE IN YOUR ROE ANALYSES?**

15 A26. As I stated above, consistent with the Commission's Opinion Nos. 569, 569-A and 569-B
16 and the recent MISO Order on Remand, I have considered the results of two models to
17 estimate the ROE for NYPA, namely the two-step DCF model and the CAPM. While the
18 recent MISO Order on Remand determined that the record in that case failed to support the
19 inclusion of the Risk Premium model, the Commission has relied on the Risk Premium
20 model in other decisions in recent years and stated that it could be used in the future were
21 certain shortfalls overcome.³⁸ Therefore, I also estimated the cost of equity applying the

³⁸ MISO Order on Remand, P. 24.

1 Risk Premium approach (along with the two-step DCF model and CAPM). I address each
2 model separately below.

3 **Q27. PLEASE DESCRIBE THE TWO-STEP DCF MODEL.**

4 A27. FERC has long relied on the DCF model for setting allowed returns. The DCF analysis
5 approaches the ROE from the perspective of an investment in the stock of each of the proxy
6 group companies. The model calculates the internal rate of return of the cash flow stream
7 generated by a cash outflow equal to the average current stock price of the proxy group
8 companies, followed by annual cash inflows of the average dividend of the proxy group
9 companies. It is assumed that dividends will grow over time. In the two-step form of the
10 DCF model, dividends grow according to the growth rates that are broken out into two
11 stages. The Stage 1 growth rate is based on equity analysts' forecasts for earnings per share
12 ("EPS") growth rates in the near-term, while the Stage 2 growth rate is based on a long-
13 term forecast of growth in nominal GDP. For these two stages, 80 percent weight is given
14 to near-term growth estimate and 20 percent weight is given to the long-term growth
15 estimates in the DCF calculation.

16 **Q28. HOW DID YOU CALCULATE THE DIVIDEND YIELD IN YOUR APPLICATION**
17 **OF THE TWO-STEP DCF MODEL?**

18 A28. I calculated the dividend yield by annualizing the current quarterly dividend payment and
19 dividing that amount by the average high and low stock prices for each proxy group
20 company during the six-month period from April 2024 through September 2024.

21 **Q29. WHY IS IT IMPORTANT TO USE AVERAGE STOCK PRICES OVER A PERIOD**
22 **OF TIME TO DETERMINE THE DIVIDEND YIELD?**

1 A29. It is important to use average stock prices over a period of time to calculate a proxy
2 company's dividend yield in the DCF model to ensure that the calculated ROE is not
3 skewed by anomalous events that may affect stock prices on any given trading day. At the
4 same time, it is important to reflect the conditions that have defined the financial markets
5 over the recent past. In my view, a six-month period reasonably balances those concerns
6 and is consistent with FERC's methodology.

7 **Q30. HOW DID YOU ADJUST THE DIVIDEND YIELD TO ACCOUNT FOR**
8 **PERIODIC GROWTH IN DIVIDENDS?**

9 A30. Utility companies tend to increase their quarterly dividends at different times throughout
10 the year, so it is reasonable to assume that such increases will be evenly distributed over
11 calendar quarters. Given that assumption, I have applied one-half of the expected annual
12 dividend growth rate for purposes of calculating this component of the DCF model.
13 Accordingly, the DCF dividend yield estimates reflect one-half of the expected near-term
14 growth in the dividend yield. This is consistent with FERC precedent.

15 **Q31. WHAT SOURCES OF EARNINGS GROWTH HAVE YOU USED IN YOUR TWO-**
16 **STEP DCF ANALYSIS?**

17 A31. In Opinion No. 569-A, FERC accepted the use of a two-step DCF analysis, in which 80
18 percent weight is given to near-term earnings growth estimates and 20 percent weight is
19 given to long-term GDP growth estimates.³⁹ FERC's rationale for using the two-step DCF
20 is premised on the assumption that long-run earnings growth ultimately will be limited to
21 growth in the overall economy. Consistent with Opinion No. 569-A, I gave 80 percent
22 weight to the consensus analyst five-year growth estimates in EPS from First Call as

³⁹ Opinion No. 569-A, at PP 56-60.

1 reported on Yahoo! Finance and 20 percent weight to the average projected GDP growth
2 rate from three sources: (1) Blue Chip Financial Forecasts for the period from 2024–2033;
3 (2) the U.S. Energy Information Administration for the period from 2024–2050; and (3)
4 the Social Security Administration for the period from 2024–2075, as shown in Schedule
5 2.2.

6 **Q32. DID YOU REMOVE ANY PROXY GROUP RESULTS AS OUTLIERS?**

7 A32. Yes. OGE Energy Corporation has a negative growth rate, which violates the basic
8 assumption of the DCF model that dividends grow in perpetuity, so I excluded it from the
9 analysis. In addition, I removed the result of 6.03 percent for Black Hills Corporation, as
10 it was less than the yield on the Moody's Baa Utility Bond Index (5.80 percent), plus 20
11 percent of the Market Risk Premium (i.e., the low-end outlier test of 7.22 percent). There
12 were no companies with results above the high outlier threshold of two times the median
13 result. However, I excluded the result of 15.55 percent for Portland General Electric
14 Company because it was nearly 400 basis points above the highest value observed among
15 the 25 remaining DCF results, which were all within a range of 7.35 percent to 11.60
16 percent (the DCF range of reasonableness).

17 **Q33. WHAT ARE THE RESULTS OF YOUR TWO-STEP DCF ANALYSIS?**

18 A33. The results of my two-step DCF analysis are provided in Schedule 2.1 and summarized in
19 Figure 8, below.

Figure 8: Two-Step DCF Results

	Proxy Group
Lower Bound	7.35%
Median	10.21%
Upper Bound	11.60%

Q34. PLEASE DESCRIBE THE CAPM APPROACH.

A34. 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).⁴⁰ As shown in the following equation, the CAPM is defined by four components, each of which theoretically must be a forward-looking estimate:

$$K_e = r_f + \beta (r_m - r_f)$$

where:

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, because unsystematic risk can be diversified away, investors should

⁴⁰ 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.

be concerned only with systematic or non-diversifiable risk. Non-diversifiable risk is measured by beta, which is defined as:

$$\beta = \frac{\text{Covariance}(r_e, r_m)}{\text{Variance}(r_m)}$$

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 a security relative to the market.

Q35. WHAT RISK-FREE RATE DID YOU USE IN YOUR CAPM ANALYSIS?

A35. Consistent with FERC precedent, I have used the average 30-year Treasury bond yield for the past six months (i.e., 4.41 percent). As discussed in Section IV herein, while the Federal Reserve recently reduced the federal funds rate, long-term interest rates are expected to remain near current levels. As such, the current 30-year Treasury bond yield is consistent with projections over the coming year.

Q36. WHAT MEASURE OF BETA DID YOU USE IN YOUR CAPM ANALYSIS?

A36. I relied on beta coefficients for the proxy group companies as reported by Value Line in the most recent publication issued for each of the proxy group companies.

Q37. WHAT MARKET RISK PREMIUM DID YOU USE IN YOUR CAPM ANALYSIS?

1 A37. For the Market Risk Premium (“MRP”) component of the CAPM analysis, I conducted a
2 constant growth DCF analysis on each of the S&P 500 companies and calculated the
3 expected total market return, weighted by market capitalization. This total market return
4 is based on current dividend yields and the average of projected earnings growth rates as
5 reported by Value Line and Yahoo! Finance for all of the companies in the S&P 500. The
6 forward-looking MRP is calculated by subtracting the risk-free rate from the total market
7 return. This analysis results in an MRP of 7.10 percent, as shown in Schedule 3.2.

8 **Q38. DID YOU DEVELOP THE MRP CONSISTENT WITH THE METHODOLOGY**
9 **OUTLINED BY THE COMMISSION IN OPINION NO. 569-A?**

10 A38. Yes, I applied the Commission’s methodology which calculates the MRP based on the
11 companies that comprise the S&P 500, excluding any non-dividend paying companies, and
12 any companies with a growth rate less than 0 percent or greater than 20 percent.⁴¹

13 While I applied the Commission’s approach, I do not agree that it is necessary to limit the
14 growth rates used in the calculation of the overall market return. The purpose of the MRP
15 is to estimate the total return that investors would require for an investment in the broad
16 market, as measured by the S&P 500 Index. If an investor were to purchase an investment
17 that tracks the S&P 500 Index, the return that the investor would receive includes
18 companies that do not pay dividends, companies with high, low or negative growth rates,
19 companies that have reduced or eliminated their dividend, and companies that might
20 encounter financial distress or bankruptcy. In the context of the DCF model, companies
21 that do not pay dividends can be assumed to have a dividend yield of 0 percent; therefore,
22 the total return is comprised solely of its rate of capital appreciation, or stock prices

⁴¹ Opinion No. 569-A, at P 83.

1 increase, which is estimated by its earnings growth rate. Additionally, some companies
2 tend to use stock buybacks as a cash flow to investors rather than dividends. In fact,
3 evidence suggests “that the payout yield, which includes both dividends and buybacks, is
4 more predictive of changes in expected returns than the dividend yield.”⁴² Excluding a
5 company from the estimate of the overall market return due to its method of providing cash
6 flows to investors introduces a bias in the estimate of the market return because the S&P
7 500 Index includes companies that have regularly employed stock buybacks, but not
8 dividends. To that point, approximately 100 companies (or 20 percent) included in the
9 S&P 500 Index currently do not pay dividends; excluding 20 percent of the companies that
10 comprise the S&P 500 is not reflective of the overall market, but rather only a subset, which
11 introduces bias.

12 Lastly, excluding a subset of companies from the MRP estimate introduces an
13 inconsistency with the estimates of beta, which are typically calculated by comparing the
14 relative volatility of a given company to an index of the overall market. Because these
15 indices include non-dividend paying companies and companies with growth rates outside
16 the range of 0 percent to 20 percent, using an MRP calculated for a different subset of the
17 market introduces an inconsistency between measures of the broad market as applied to
18 beta and the MRP. While FERC acknowledged a potential disconnect in calculating MRP
19 using the S&P 500 and betas using the New York Stock Exchange (“NYSE”) listed
20 companies (Value Line calculates betas against the NYSE), it did not acknowledge the
21 more significant bias of excluding several companies from the calculation of the MRP,

⁴² Philip U. Straehl and Roger G. Ibbotson, *The Supply of Stock Returns: Adding Back Buybacks*, (Dec. 17, 2015), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2715098.

without making a similar adjustment to betas.⁴³ Notwithstanding, I use FERC's approach in my analysis, which produces an expected market return of 11.51 percent, which combined with a risk-free rate of 4.41 percent produced an MRP of 7.10 percent.

Q39. HOW DOES THE MARKET RETURN ESTIMATE DEVELOPED USING THE COMMISSION'S METHODOLOGY COMPARE TO OTHER PUBLICATIONS THAT PROVIDE ESTIMATES OF THE IMPLIED MARKET RETURN?

A39. The Commission's methodology produces an expected market return of 11.51 percent. S&P regularly publishes a report of expected earnings and estimates of S&P 500 companies, including the expected market return. As of October 4, 2024, a market return using S&P's published dividend yield of 1.30 percent and a growth rate of 14.74 percent produces a market return of 16.13 percent.⁴⁴ Therefore, using the Commission's methodology understates the cost of equity as compared to relying on the data published by S&P in its earnings and estimates report.

Q40. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSES?

A40. My CAPM results, using the FERC methodology and inputs, are shown in Schedule 3.1 and summarized in Figure 9.

⁴³ Opinion No. 569-A, P 76.

⁴⁴ S&P Dow Jones Indices, S&P 500 Earnings and Estimate Report (September 13, 2024). Calculated as $1.30\% * (1 + 0.5 * 16.13\%) + 16.13\%$.

Figure 9: CAPM Results

	Proxy Group
Lower Bound	10.38%
Median	11.75%
Upper Bound	13.03%

Q41. PLEASE DESCRIBE YOUR RISK PREMIUM ANALYSIS.

A41. 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 bondholders. 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);

Y = Applicable bond yield; and

$$\text{ROE} = \text{RP} + \text{Y}$$

Because 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. My Risk Premium analysis relies on FERC-authorized returns for electric transmission companies since 2006, as shown in Schedule 4.2. This is consistent with FERC's prior practice.

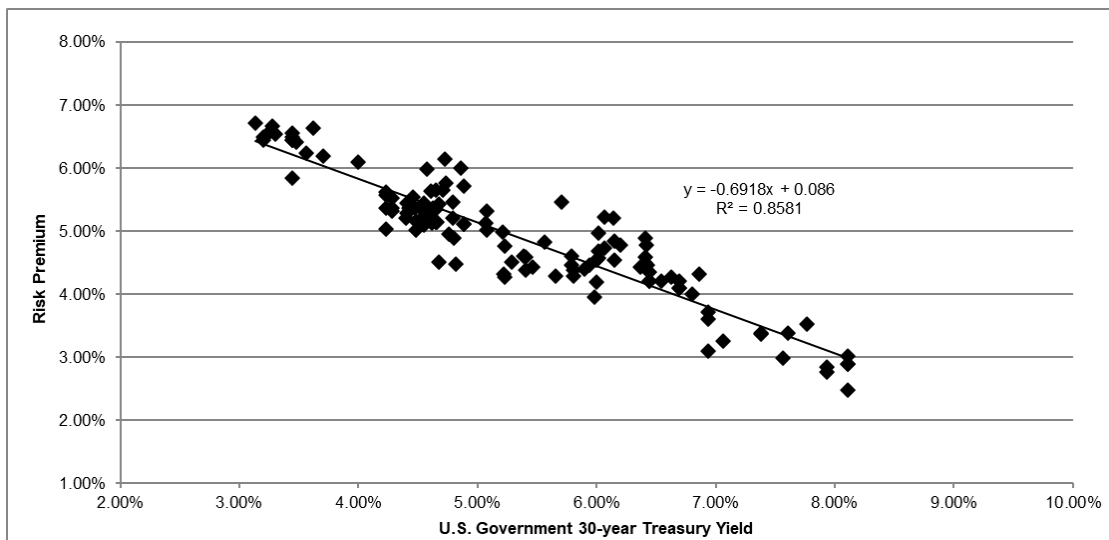
To estimate the relationship between interest rates and the cost of equity using the Risk Premium approach, I conducted a regression using the following equation, where a = slope term and b = intercept term:

$$RP = ax + b^{45}$$

Q42. WHAT DID YOUR RISK PREMIUM ANALYSIS REVEAL?

A42. My Risk Premium analysis examines the relationship between FERC-authorized ROEs for electric transmission utilities and the respective Moody's Baa Utility Bond Index Yield at the time of the decision. The results of that regression are detailed in Figure 10, below.

Figure 10: Risk Premium Regression Results vs. 30-Year Treasury Yield⁴⁶



While ROEs and interest rates changes are typically directionally consistent, ROEs do not move in a one-to-one ratio with interest rates. As discussed above, under the Risk Premium model, the ROE is the sum of the interest rate and the risk premium. As Figure 10 illustrates, the risk premium varies with the level of the bond yield, and generally increases

⁴⁵ Figure 10 contains the results of the regression equation where RP is defined as “y,” the slope term “a” is equal to -0.6918, and the intercept term “b” is equal to 0.0860.

⁴⁶ Figure 10 also appears in Schedule 4.1, along with detailed regression statistics.

as bond yields decrease, and vice versa. Based on the regression coefficients in Figure 10 above,⁴⁷ which allows for the estimation of the risk premium at varying bond yields, the results of my Risk Premium analysis are shown in Figure 11 below.⁴⁸

Figure 11: Risk Premium Results

	6-month Average Yield on Moody's Baa Utility Index
Yield	5.80%
Risk Premium	4.59%
ROE	10.39%

Unlike the DCF and CAPM analysis, the Risk Premium analysis previously accepted by FERC does not produce a range of values. Consistent with FERC's prior practice, to estimate a range of reasonableness for the Risk Premium analysis, the average difference between the upper and lower bounds of the DCF and CAPM analyses is applied to Risk Premium analysis to produce a range of values. The difference between the upper and lower bounds of the DCF analysis is 4.25 percent and the difference between the upper and lower bounds of the CAPM analysis is 2.65 percent, averaging 3.45 percent. Half of 3.45 percent below the Risk Premium result of 10.39 percent produces a lower bound of 8.80 percent, and half of 3.29 percent above the Risk Premium result produces an upper bound of 12.25 percent.

⁴⁷ Schedule 4.1 contains more detailed regression statistics.

⁴⁸ The regression analysis demonstrates a statistically significant relationship between interest rates and the risk premium.

Q43. WHY ARE AUTHORIZED ROES RELEVANT TO THE RISK PREMIUM ANALYSIS?

A43. Authorized ROEs (as opposed to earned ROEs) are typically established by public utility commissions by reference to market-based models and therefore reflect the commissions' views of market required equity returns at the time of a decision. In addition, authorized ROEs 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 regarding both its ability to compete for capital and its financial integrity. Authorized ROEs also provide a broad benchmark of returns available to other regulated electric utilities, consistent with the *Hope* and *Bluefield* "comparable return" standard.

Q44. HOW DID YOU CALCULATE THE ZONE OF REASONABLENESS FOR THE PROXY GROUP?

A44. In the MISO Order on Remand, the Commission included the DCF and CAPM analyses to construct a composite zone of reasonableness. Based on the average of the two analyses, the composite zone of reasonableness is 8.87 percent to 12.32 percent with a median of 10.98 percent. The upper bound is important as it is the maximum total ROE allowed (base ROE plus any ROE incentive adders).

Because the Commission has relied on the Risk Premium model in other decisions in recent years (see e.g., Opinion Nos. 575⁴⁹ and 879,⁵⁰ and other recent orders⁵¹) and the MISO Order

⁴⁹ *Entergy Arkansas, Inc.*, Opinion No. 575, 175 FERC ¶ 61,136, PP 244-245, *order on reh'g*, 176 FERC ¶ 61,155 (2021).

⁵⁰ *DATC Path 15, LLC*, Opinion No. 879, 177 FERC ¶ 61,115, PP 24, 213-214 (2021).

⁵¹ *Pac. Gas and Elec. Co.*, 178 FERC ¶ 61,175, PP 1, 20, 266 (2022); *Constellation Mystic Power, LLC*, 176 FERC ¶ 61,019, PP 15, 176, *order on reh'g*, 177 FERC ¶ 61,106 (2021), *order on reh'g*, 178 FERC ¶ 61,116 (2022).

on Remand did not “foreclose the use of a Risk Premium model in future proceedings,”⁵² I also considered a composite zone of reasonableness including the DCF, CAPM, and Risk Premium analyses. Based on the average of the three analyses, the composite zone of reasonableness is 8.80 percent to 12.25 percent with a median of 10.78 percent.

In light of the recent Commission decision in the MISO Order on Remand to rely primarily on the two-model approach, my recommendation as to the appropriate zone of reasonableness and base ROE is based on the two-model approach. I therefore recommend the Commission authorize a base ROE of 10.98 percent for NYPA within a composite zone of reasonableness of 8.87 percent to 12.32 percent.

VII. CAPITAL STRUCTURE

Q45. WHAT CAPITAL STRUCTURE DOES NYPA USE IN ITS TRANSMISSION FORMULA RATE?

A45. For nearly all of its transmission investments, NYPA uses its currently authorized capital structure of 50 percent debt and 50 percent equity, as long as its actual equity ratio equals or exceeds 50 percent.

Q46. HOW DOES NYPA’S RATEMAKING CAPITAL STRUCTURE COMPARE WITH ITS ACTUAL CAPITAL STRUCTURE?

A46. NYPA’s current capital structure consists of 64 percent common equity (net position) and 36 percent long-term debt as of year-end 2023. While NYPA will require substantial debt offerings in the future to deliver its capital plan, the equity ratio is expected to remain above 60 percent through 2027.

⁵² MISO Order on Remand, P 24.

1 **Q47. IS THE 50/50 CAPITAL STRUCTURE REASONABLE AND IN THE BEST**
2 **INTEREST OF NEW YORK CUSTOMERS?**

3 A47. Yes. Customers benefit from a credit profile that is based on a capital structure with greater
4 than 60 percent equity. Specifically, a higher equity ratio supports a stronger credit rating,
5 which allows NYPA to access debt capital at lower rates. By comparison, NYPA's capital
6 structure for ratemaking purposes is conservative relative to its actual capital structure and
7 the capital structure of other transmission owners. Nonetheless, NYPA's currently
8 authorized 50 percent debt and 50 percent equity capital structure should allow NYPA to
9 achieve a reasonable rate of return and allow NYPA access to capital markets for
10 significant borrowings that are expected over the next five years as NYPA executes on its
11 plans for significant transmission investments and other investments.⁵³

12 **VIII. CONCLUSIONS AND RECOMMENDATIONS**

13 **Q48. WHAT IS YOUR RECOMMENDED COST OF EQUITY CAPITAL (BASE ROE)**
14 **FOR PURPOSES OF ESTABLISHING NYPA'S TRANSMISSION FORMULA**
15 **RATE REVENUE REQUIREMENT?**

16 A48. Figure 12 below summarizes my analyses, including a recommended 10.98 percent base
17 ROE using the two-model average (i.e., DCF and CAPM). See also Schedule 5, which
18 contains the same results.

⁵³ See Testimony of Scott Tetenman, pages 6-8 (Exhibit No. NYPA-200).

1

Figure 12: Cost of Equity Capital Summary

Model	Lower Bound	Median	Upper Bound
Two-Step DCF	7.35%	10.21%	11.60%
CAPM	10.38%	11.75%	13.03%
Risk Premium	8.66%	10.39%	12.11%
Three-Model Average	8.80%	10.78%	12.25%
Two-Model Average	8.87%	10.98%	12.32%
Recommended Base ROE	10.98%		
Capital Structure	50%/50%		

2 The cost of equity amounts above do not include the RTO Participation Adder or any other
3 ROE incentive adders which would be added to the Base ROE.

4 **Q49. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

5 A49. Yes.

JOSHUA C. NOWAK
VICE PRESIDENT

Mr. Nowak is a financial and economic consultant with more than fifteen years of experience in the energy industry. He has provided expert testimony on regulatory issues in several proceedings before the Federal Energy Regulatory Commission and regulatory commissions in Alaska, California, Connecticut, Kentucky, Minnesota, New Brunswick, New Hampshire, New York, North Dakota, Ohio, and Texas. Mr. Nowak specializes in providing rate case services on economic conditions and financial market matters related to the cost of capital. He is also experienced in providing strategic direction on financing activities including bond offerings, credit rating analysis, and investor relations. Previously, Josh was the Director of Regulatory Strategy & Integrated Analytics at National Grid where he was responsible for issues related to the cost of capital across its federal and state jurisdictional operating companies. He holds a Bachelor's Degree in Economics and History from Boston College.

REPRESENTATIVE EXPERIENCE**Expert Testimony and Litigation Support**

Mr. Nowak's work includes regulatory project management, research, and analysis for expert witness testimony. His work has included:

- Expert testimony on cost of capital, financial markets, return on equity, capital structure, and debt financing issues
- Regulatory strategy in return on equity proceedings, including coordination across several utilities in joint-party proceedings
- Extensive support for expert testimony in cost of capital and return on equity proceedings through research, financial analysis, and testimony development
- Expert testimony, sponsoring lead-lag studies, in support of utility cash working capital requirements
- Project management of expert testimony assignments, including all phases of the regulatory schedule
- Performing analysis to support expert testimony regarding affiliate expenses and allocations

Policy Analysis

Mr. Nowak has contributed to projects related to policy review including:

- A review of natural gas capacity options and a cost-benefit analysis for state regulators seeking to reduce energy costs for ratepayers
- Analysis of the economic and environmental benefits of changes to natural gas ratemaking/expansion policy



Management and Operations Consulting

Mr. Nowak has taken a lead analytical role in developing benchmarking analyses and process reviews. Specifically, he has:

- Developed benchmarking analyses, in support of expert testimony, comparing electric and gas utilities' cost and operational efficiency, taking into account a situational assessment of exogenous factors
- Performed a process review of a gas utility's expansion projects, including an evaluation of policies, procedures, and financial models
- Supported analysis for a report of the reasonableness of a shared service company's administrative and general costs

Financial Analysis

Other financial analysis Mr. Nowak has conducted include:

- Extensive analysis on issues related to utilities' cost of capital
- Developing dispatch models to estimate revenues for merchant powerplants
- Estimating damages for breach of contract in fuel delivery commitment
- Researching strategic investment opportunities for merchant generators
- A report on the profitability of various generation technologies in a deregulated energy market
- Reviewing internal financial models used by utility clients
- Supporting utility asset appraisals, including research and analysis for income approach, cost approach, and sales comparison approach

Other Experience

In his previous work, Mr. Nowak contributed to the evaluation of regulatory policy for government clients. His experience included performing policy analysis, including economic impact assessments, for federal regulations.

PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2018 – Present)

Vice President

Assistant Vice President

National Grid USA (2017 – 2018)

Director, Regulatory Strategy & Integrated Analytics

ScottMadden, Inc. (formerly Sussex Economic Advisors, LLC) (2012 – 2016)

Director

Principal



Concentric Energy Advisors, Inc. (2007 – 2012)

Senior Consultant

Consultant

Assistant Consultant

Analyst

RTI International (2006 – 2007)

Economist

EDUCATION

Boston College

B.A., Economics and History, 2006

SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Regulatory Commission of Alaska				
ENSTAR Natural Gas Company, a Division of Semco Energy, Inc.	06/16	ENSTAR Natural Gas Company, a Division of Semco Energy, Inc.	TA 285-4	Cash Working Capital
California Public Utilities Commission				
Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company, and San Diego Gas & Electric Company	02/24	Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company, and San Diego Gas & Electric Company	A.22-04-008 / A.22-04-009 / A.22-04-011 / A.22-04-012	Return on Equity Policy
Southern California Gas Company and San Diego Gas & Electric Company	01/24	Southern California Gas Company and San Diego Gas & Electric Company	A.22-04-011 / A.22-04-012	Return on Equity Policy
Connecticut Public Utilities Regulatory Authority				
Aquarion Water Company of Connecticut	08/22	Aquarion Water Company of Connecticut	Docket No. 22-07-01	Return on Equity
Aquarion Water Company of Connecticut	01/22	Aquarion Water Company of Connecticut	Docket No. 13-02-20RE06	Return on Equity and Cost of Debt
Federal Energy Regulatory Commission				
Mid-Atlantic Offshore Development, LLC	07/24	Mid-Atlantic Offshore Development, LLC	ER24-2564-000	Return on Equity
Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Niagara Mohawk Power Corporation d/b/a National Grid, New York State Electric & Gas Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation	04/21	Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Niagara Mohawk Power Corporation d/b/a National Grid, New York State Electric & Gas Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation	EL21-66-000, ER21-1647-000	Transmission Ownership Risk and Returns



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Central Hudson Gas & Electric Corporation	12/19	Central Hudson Gas & Electric Corporation	ER20-715-000	Return on Equity
Kentucky Public Service Commission				
Duke Energy Kentucky, Inc.	12/22	Duke Energy Kentucky, Inc.	Case No. 2022-00372	Return on Equity
Minnesota Public Utilities Commission				
Northern States Power Company (Xcel Energy Inc.)	11/23	Northern States Power Company (Xcel Energy Inc.)	G-002/GR-23-413	Return on Equity
New Brunswick Energy and Utilities Board				
New Brunswick Power Corporation (NB Power)	11/22	New Brunswick Power Corporation (NB Power)	Matter 541	Macroeconomic Environment and Capital Market Conditions
Public Utilities Commission of New Hampshire				
Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities	04/16	Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities	Docket No. DE 16-383	Cash Working Capital
New York Public Service Commission				
Central Hudson Gas & Electric Corporation	08/24	Central Hudson Gas & Electric Corporation	Case 24-E-0461/ Case 24-G-0462	Return on Equity
Niagara Mohawk Power Corporation d/b/a National Grid	05/24	Niagara Mohawk Power Corporation d/b/a National Grid	Case 24-E-0322/ Case 24-G- 0323	Return on Equity
National Fuel Gas Distribution Corporation	10/23	National Fuel Gas Distribution Corporation	Case 23-G-0627	Return on Equity
Central Hudson Gas & Electric Corporation	07/23	Central Hudson Gas & Electric Corporation	Case 23-E-0418/ Case 23-G-0419	Return on Equity



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
The Brooklyn Union Gas Company d/b/a National Grid NY ("KEDNY") and KeySpan Gas East Corporation d/b/a National Grid ("KEDLI")	04/23	The Brooklyn Union Gas Company d/b/a National Grid NY ("KEDNY") and KeySpan Gas East Corporation d/b/a National Grid ("KEDLI")	Case 23-G-0225/ Case 23-G-0226	Return on Equity
Niagara Mohawk Power Corporation d/b/a National Grid	07/20	Niagara Mohawk Power Corporation d/b/a National Grid	Case 20-E-0380/ Case 20-G- 0381	Return on Equity
Niagara Mohawk Power Corporation d/b/a National Grid	07/17	Niagara Mohawk Power Corporation d/b/a National Grid	Case 17-E-0238/ Case 17-G- 0239	Capital Structure and Overall Cost of Capital
North Dakota Public Service Commission				
Northern States Power Company (Xcel Energy Inc.)	12/23	Northern States Power Company (Xcel Energy Inc.)	Docket No. PU-23-367	Return on Equity
Public Utilities Commission of Ohio				
Duke Energy Ohio, Inc.	01/23	Duke Energy Ohio, Inc.	Case No. 22-1153-EL-UNC	Return on Equity
Public Utility Commission of Texas				
Wind Energy Transmission Texas, LLC	05/15	Wind Energy Transmission Texas, LLC	Docket No. 44746	Cash Working Capital
Lone Star Transmission, LLC	05/14	Lone Star Transmission, LLC	Docket No. 42469	Cash Working Capital
Railroad Commission of Texas				
Texas Gas Service Company, a Division of One Gas, Inc.	06/16	Texas Gas Service Company, a Division of One Gas, Inc.	GUD No. 10526	Cash Working Capital
Texas Gas Service Company, a Division of One Gas, Inc.	03/16	Texas Gas Service Company, a Division of One Gas, Inc.	GUD No. 10506	Cash Working Capital



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Texas Gas Service Company, a Division of One Gas, Inc.	12/15	Texas Gas Service Company, a Division of One Gas, Inc.	GUD No. 10488	Cash Working Capital
CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	03/14	CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD No. 10432	Cash Working Capital

Exhibit No. NYPA-102
Schedules 1-5

PROXY GROUP SCREENING DATA AND RESULTS

	[1]	[2]	[3]	[4]	[5]	
Company	Ticker	Pays Dividends, No Reductions or Cuts in Study Period	S&P Credit Rating	Moody's Credit Rating	Engaged in Merger during Study Period (4/1/2024 through 9/30/2024)	In Proxy Group
ALLETE, Inc.	ALE	Yes	BBB	Baa1	Yes	
Alliant Energy Corporation	LNT	Yes	A-	Baa2	No	Yes
Ameren Corporation	AEE	Yes	BBB+	Baa1	No	Yes
American Electric Power Company, Inc.	AEP	Yes	BBB+	Baa2	No	Yes
Avangrid, Inc.	AGR	Yes	BBB+	Baa2	Yes	
Avista Corporation	AVA	Yes	BBB	Baa2	No	Yes
Black Hills Corporation	BKH	Yes	BBB+	Baa2	No	Yes
CenterPoint Energy, Inc.	CNP	Yes	BBB+	Baa2	Yes	
CMS Energy Corporation	CMS	Yes	BBB+	Baa2	No	Yes
Consolidated Edison, Inc.	ED	Yes	A-	Baa1	No	Yes
Dominion Resources, Inc.	D	Yes	BBB+	Baa2	Yes	
DTE Energy Company	DTE	Yes	BBB+	Baa2	No	Yes
Duke Energy Corporation	DUK	Yes	BBB+	Baa2	No	Yes
Edison International	EIX	Yes	BBB	Baa2	No	Yes
Entergy Corporation	ETR	Yes	BBB+	Baa2	No	Yes
Eversource Energy	ES	Yes	A-	Baa2	Yes	
Exelon Corporation	EXC	Yes	BBB+	Baa2	No	Yes
FirstEnergy Corporation	FE	Yes	BBB	Baa3	Yes	
Evergy, Inc.	EVERG	Yes	BBB+	Baa2	No	Yes
Hawaiian Electric Industries, Inc.	HE	No	B-	B1	No	
IDACORP, Inc.	IDA	Yes	BBB	Baa2	No	Yes
MGE Energy, Inc.	MGEE	Yes	AA- [5]	A1 [5]	No	Yes
NextEra Energy, Inc.	NEE	Yes	A-	Baa1	No	Yes
NorthWestern Corporation	NWE	Yes	BBB	Baa2	No	Yes
OGE Energy Corporation	OGE	Yes	BBB+	Baa1	No	Yes
Otter Tail Corporation	OTTR	Yes	BBB	Baa2	No	Yes
PG&E Corporation	PCG	No	BB	Ba1	No	
Pinnacle West Capital Corporation	PNW	Yes	BBB+	Baa2	No	Yes
Portland General Electric Company	POR	Yes	BBB+	A3	No	Yes
PPL Corporation	PPL	Yes	A-	Baa1	No	Yes
Public Service Enterprise Group Inc.	PEG	Yes	BBB+	Baa2	No	Yes
Sempra Energy	SRE	Yes	BBB+	Baa2	No	Yes
Southern Company	SO	Yes	A-	Baa1	No	Yes
TXNM Energy, Inc.	TXNM	Yes	BBB	Baa3	No	Yes
Wisconsin Energy Corporation	WEC	Yes	A-	Baa1	No	Yes
Xcel Energy Inc.	XEL	Yes	BBB+	Baa1	No	Yes

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Notes:

[1] Source: Bloomberg Professional

[2] Source: S&P Capital IQ Pro

[3] Source: S&P Capital IQ Pro

[4] Source: S&P Capital IQ Pro

[5] MGE Energy, Inc. is not rated. Rating for its primary subsidiary, Madison Gas and Electric Company

DCF ANALYSIS

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		Average	Expected	Yahoo!		Average		
Company		Dividend Yield	Dividend Yield	Finance Near	GDP Growth	Weighted 2	ROE	Outliers
				Term Growth		Stage Growth		
Alliant Energy Corporation	LNT	3.61%	3.75%	7.70%	4.17%	6.99%	10.75%	
Ameren Corporation	AEE	3.52%	3.63%	6.20%	4.17%	5.79%	9.42%	
American Electric Power Company, Inc.	AEP	3.81%	3.93%	6.62%	4.17%	6.13%	10.06%	
Avista Corporation	AVA	5.16%	5.32%	6.20%	4.17%	5.79%	11.12%	
Black Hills Corporation	BKH	4.62%	4.63%	0.70%	4.17%	1.39%	6.03%	x
CMS Energy Corporation	CMS	3.27%	3.40%	7.60%	4.17%	6.91%	10.31%	
Consolidated Edison, Inc.	ED	3.46%	3.56%	5.70%	4.17%	5.39%	8.96%	
DTE Energy Company	DTE	3.52%	3.61%	5.10%	4.17%	4.91%	8.53%	
Duke Energy Corporation	DUK	3.93%	4.06%	6.66%	4.17%	6.16%	10.22%	
Edison International	EIX	4.08%	4.25%	8.15%	4.17%	7.35%	11.60%	
Entergy Corporation	ETR	4.01%	4.15%	7.07%	4.17%	6.49%	10.64%	
Exelon Corporation	EXC	4.08%	4.17%	4.75%	4.17%	4.63%	8.81%	
Evergy, Inc.	EVRG	4.63%	4.77%	6.35%	4.17%	5.91%	10.69%	
IDACORP, Inc.	IDA	3.43%	3.53%	5.50%	4.17%	5.23%	8.76%	
MGE Energy, Inc.	MGEE	2.14%	2.19%	5.40%	4.17%	5.15%	7.35%	
NextEra Energy, Inc.	NEE	2.78%	2.90%	8.20%	4.17%	7.39%	10.29%	
NorthWestern Corporation	NWE	5.01%	5.16%	6.10%	4.17%	5.71%	10.87%	
OGE Energy Corporation	OGE	4.54%		Negative	4.17%			x
Otter Tail Corporation	OTTR	2.14%	2.23%	9.00%	4.17%	8.03%	10.27%	
Pinnacle West Capital Corporation	PNW	4.40%	4.56%	7.20%	4.17%	6.59%	11.15%	
TXNM Energy, Inc.	TXNM	3.99%	4.08%	4.42%	4.17%	4.37%	8.45%	
Portland General Electric Company	POR	4.37%	4.64%	12.60%	4.17%	10.91%	15.55%	x
PPL Corporation	PPL	3.53%	3.65%	6.80%	4.17%	6.27%	9.92%	
Public Service Enterprise Group Inc.	PEG	3.19%	3.29%	5.90%	4.17%	5.55%	8.84%	
Sempra Energy	SRE	3.24%	3.34%	5.90%	4.17%	5.55%	8.89%	
Southern Company	SO	3.58%	3.71%	7.30%	4.17%	6.67%	10.39%	
Wisconsin Energy Corporation	WEC	3.95%	4.07%	5.86%	4.17%	5.52%	9.59%	
Xcel Energy Inc.	XEL	3.86%	3.99%	6.73%	4.17%	6.22%	10.21%	
MEAN		3.78%	3.87%	6.51%			9.84%	
MEDIAN		3.84%	3.93%	6.35%			10.21%	
Zone of Reasonableness High:							11.60%	
Median							10.21%	
Zone of Reasonableness Low:							7.35%	
Upper Threshold [7]							20.42%	
Lower Threshold [7]							7.22%	

Notes:

[1] Six month average dividend yields - April 1, 2024 through September 30, 2024

[2] Equals Column [1] x (1 + (0.5 x Column [5]))

[3] Yahoo! Finance dated September 30, 2024

[4] Source: Schedule 2.2

[5] Equals (2/3) * Column [3] + (1/3) * Column [4]

[6] Equals Column [2] + Column [5]

[7] Per FERC precedent, results less than the cost of debt (Moody's Baa-rated Utility Bond Index six-month average plus 20% of MRP) or more than 200% of proxy group median are excluded from consideration

LONG-TERM GDP GROWTH ESTIMATE

**Long-Term
U.S. Gross Domestic Product (GDP)
Growth Forecasts**

	[A]	[B]	[C]
Source	Beginning Year	Ending Year	Annual GDP Growth
BCFF [1]	2025	2035	4.14%
EIA [2]	2024	2050	4.30%
SSA [3]	2024	2075	4.07%
Average			4.17%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 6, June 1, 2024, at 14. Nominal GDP = (Real GDP) * (GDP Chained Price Index)

[2] Energy Information Administration Annual Energy Outlook 2023 with projections to 2050, March 2023, Table A20. Macroeconomic Indicators. Nominal GDP=(Real GDP)*(GDP Chain Type Price Index). https://www.eia.gov/outlooks/aeo/tables_ref.php

[3] Social Security Administration: The 2023 OASDI Trustees Report, Table VI.G4.—OASDI and HI Annual and Summarized Income, Cost, and Balance as a Percentage of GDP, Calendar Years 2023-2100 <https://www.ssa.gov/OACT/TR/2023>

CAPM ANALYSIS

		[4]	[5]			[7]
Risk Free Rate [1]			4.41%			
Market Return [2]			11.51%			
Market Risk Premium [3]			7.10%			
		Value Line Beta	Unadjusted CAPM	Small size premium	Adjusted CAPM	Outliers
Alliant Energy Corporation	LNT	0.90	10.80%	0.61%	11.40%	
Ameren Corporation	AEE	0.90	10.80%	0.46%	11.26%	
American Electric Power Company, Inc.	AEP	0.85	10.44%	-0.06%	10.38%	
Avista Corporation	AVA	0.95	11.15%	1.21%	12.36%	
Black Hills Corporation	BKH	1.05	11.86%	0.95%	12.81%	
CMS Energy Corporation	CMS	0.85	10.44%	0.46%	10.90%	
Consolidated Edison, Inc.	ED	0.80	10.09%	0.46%	10.55%	
DTE Energy Company	DTE	1.00	11.51%	0.46%	11.97%	
Duke Energy Corporation	DUK	0.90	10.80%	-0.06%	10.74%	
Edison International	EIX	1.00	11.51%	0.46%	11.97%	
Entergy Corporation	ETR	1.00	11.51%	0.46%	11.97%	
Exelon Corporation	EXC	NMF	NA	-0.06%		x
Evergy, Inc.	EVERG	0.95	11.15%	0.61%	11.76%	
IDACORP, Inc.	IDA	0.85	10.44%	0.64%	11.09%	
MGE Energy, Inc.	MGEE	0.80	10.09%	1.21%	11.30%	
NextEra Energy, Inc.	NEE	1.05	11.86%	-0.06%	11.80%	
NorthWestern Corporation	NWE	0.95	11.15%	0.95%	12.10%	
OGE Energy Corporation	OGE	1.05	11.86%	0.64%	12.51%	
Otter Tail Corporation	OTTR	0.95	11.15%	0.95%	12.10%	
Pinnacle West Capital Corporation	PNW	0.95	11.15%	0.61%	11.76%	
TXNM Energy, Inc.	TXNM	0.90	10.80%	0.95%	11.75%	
Portland General Electric Company	POR	0.95	11.15%	0.64%	11.80%	
PPL Corporation	PPL	1.15	12.57%	0.46%	13.03%	
Public Service Enterprise Group Inc.	PEG	0.95	11.15%	-0.06%	11.09%	
Sempra Energy	SRE	1.00	11.51%	-0.06%	11.45%	
Southern Company	SO	0.95	11.15%	-0.06%	11.09%	
Wisconsin Energy Corporation	WEC	0.85	10.44%	0.46%	10.90%	
Xcel Energy Inc.	XEL	0.85	10.44%	0.46%	10.90%	
MEAN		0.939			11.58%	
MEDIAN		0.950			11.75%	
			Zone of Reasonableness High:		13.03%	
			Median		11.75%	
			Zone of Reasonableness Low:		10.38%	
			Upper Threshold [8]		23.50%	
			Lower Threshold [8]		7.22%	

Notes

[1] Source: Schedule 4.1

[2] Source: Schedule 3.2

[3] Source: Equals [2] - [1]

[4] Source: Bloomberg Professional

[5] Equals (Column [5], Line [1]) + Column [4] x (Column [5], Line [3])

[6] Equals (Column [6], Line [1]) + Column [4] x (Column [6], Line [3])

[7] Equals (Column [7], Line [1]) + Column [4] x (Column [7], Line [3])

[8] Per FERC precedent, results less than the cost of debt (Moody's Baa-rated Utility Bond Index six-month average plus 20% of MRP) or more than 200% of proxy group median are excluded from consideration

MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.68%
[2] Estimated Weighted Average Long-Term Growth Rate	9.74%
[3] S&P 500 Estimated Required Market Return	11.51%
[4] Risk-Free Rate	4.41%
[5] Implied Market Risk Premium	7.10%

STANDARD AND POOR'S 500 INDEX

		[6]	[7]	[8]	[9]	[10]	[11]	[12]
Name	Ticker	% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
LyondellBasell Industries NV	LYB	0.09%	5.59	0.01%	7.25	-1.00	3.13	0.00%
American Express Co	AXP	0.57%	1.03	0.01%	15.65	9.00	12.33	0.07%
Verizon Communications Inc	VZ	0.56%	6.03	0.03%	0.76	0.50	0.63	0.00%
Broadcom Inc	AVGO	n/a	1.23	n/a	19.90	30.00	24.95	n/a
Boeing Co/The	BA	n/a	n/a	n/a	252.20		252.20	n/a
Solventum Corp	SOLV	n/a	n/a	n/a				n/a
Caterpillar Inc	CAT	0.56%	1.44	0.01%	5.30	11.50	8.40	0.05%
JPMorgan Chase & Co	JPM	1.77%	2.37	0.04%	1.66	7.00	4.33	0.08%
Chevron Corp	CVX	0.80%	4.43	0.04%	3.60	5.00	4.30	0.03%
Coca-Cola Co/The	KO	0.92%	2.70	0.02%	6.07	7.00	6.54	0.06%
AbbVie Inc	ABBV	1.03%	3.14	0.03%	6.26	4.00	5.13	0.05%
Walt Disney Co/The	DIS	0.52%	0.94	0.00%	15.81	21.50	18.66	0.10%
Corpay Inc	CPAY	n/a	n/a	n/a	13.06	13.50	13.28	n/a
Extra Space Storage Inc	EXR	0.11%	3.60	0.00%	6.00	5.00	5.50	0.01%
Exxon Mobil Corp	XOM	1.54%	3.24	0.05%	5.20	-3.00	1.10	0.02%
Phillips 66	PSX	n/a	3.50	n/a	-4.60	0.50	-2.05	n/a
General Electric Co	GE	n/a	0.59	n/a	29.35	22.00	25.68	n/a
HP Inc	HPQ	0.10%	3.07	0.00%	4.10	12.50	8.30	0.01%
Home Depot Inc/The	HD	1.19%	2.22	0.03%	3.80	6.50	5.15	0.06%
Monolithic Power Systems Inc	MPWR	0.13%	0.54	0.00%	25.00	10.50	17.75	0.02%
International Business Machines Corp	IBM	0.60%	3.02	0.02%	3.90	3.00	3.45	0.02%
Johnson & Johnson	JNJ	1.15%	3.06	0.04%	5.53	3.00	4.27	0.05%
Lululemon Athletica Inc	LULU	n/a	n/a	n/a	8.83	16.00	12.42	n/a
McDonald's Corp	MCD	0.65%	2.33	0.02%	4.66	8.00	6.33	0.04%
Merck & Co Inc	MRK	n/a	2.71	n/a	85.77	15.50	50.64	n/a
3M Co	MMM	0.22%	2.05	0.00%	-3.91	30.50	13.30	0.03%
American Water Works Co Inc	AWK	0.08%	2.09	0.00%	7.50	4.50	6.00	0.01%
Bank of America Corp	BAC	0.91%	2.62	0.02%	9.94	6.50	8.22	0.07%
Pfizer Inc	PFE	0.48%	5.81	0.03%	18.60	2.50	10.55	0.05%
Procter & Gamble Co/The	PG	1.20%	2.32	0.03%	6.46	5.00	5.73	0.07%
AT&T Inc	T	0.47%	5.05	0.02%	1.29	4.00	2.65	0.01%
Travelers Cos Inc/The	TRV	0.16%	1.79	0.00%	16.30	12.00	14.15	0.02%
RTX Corp	RTX	0.48%	2.08	0.01%	11.25	12.00	11.63	0.06%
Analog Devices Inc	ADI	0.34%	1.60	0.01%	0.58	7.50	4.04	0.01%
Walmart Inc	WMT	1.92%	1.03	0.02%	10.17	8.00	9.09	0.17%
Cisco Systems Inc	CSCO	0.63%	3.01	0.02%	4.03	3.50	3.77	0.02%
Intel Corp	INTC	n/a	n/a	n/a	15.69	-2.00	6.85	n/a
General Motors Co	GM	0.15%	1.07	0.00%	12.85	6.50	9.68	0.01%
Microsoft Corp	MSFT	9.45%	0.77	0.07%	14.60	14.00	14.30	1.35%
Dollar General Corp	DG	0.05%	2.79	0.00%	-2.07	3.50	0.72	0.00%
Cigna Group/The	CI	0.29%	1.62	0.00%	11.91	12.00	11.96	0.03%
Kinder Morgan Inc	KMI	0.14%	5.21	0.01%	7.70	10.00	8.85	0.01%
Citigroup Inc	C	0.35%	3.58	0.01%	10.00	3.00	6.50	0.02%
American International Group Inc	AIG	0.14%	2.18	0.00%	24.80	13.00	18.90	0.03%
Altria Group Inc	MO	0.26%	7.99	0.02%	3.84	6.00	4.92	0.01%
HCA Healthcare Inc	HCA	0.31%	0.65	0.00%	11.43	10.50	10.97	0.03%
International Paper Co	IP	0.05%	3.79	0.00%	19.20	5.50	12.35	0.01%
Hewlett Packard Enterprise Co	HPQ	0.08%	2.54	0.00%	3.20	7.50	5.35	0.00%
Abbott Laboratories	ABT	0.59%	1.93	0.01%	8.20	4.00	6.10	0.04%
Aflac Inc	AFL	0.19%	1.79	0.00%		7.50	7.50	0.01%
Air Products and Chemicals Inc	APD	0.20%	2.38	0.00%	5.27	10.50	7.89	0.02%
Super Micro Computer Inc	SMCI	n/a	n/a	n/a	62.40	39.00	50.70	n/a
Royal Caribbean Cruises Ltd	RCL	n/a	0.90	n/a	30.30		30.30	n/a
Hess Corp	HES	0.12%	1.47	0.00%	7.95	8.00	7.98	0.01%
Archer-Daniels-Midland Co	ADM	n/a	3.35	n/a	-4.90	3.00	-0.95	n/a
Automatic Data Processing Inc	ADP	0.33%	2.02	0.01%	9.13	11.00	10.07	0.03%
Verisk Analytics Inc	VRSK	0.11%	0.58	0.00%	12.18	8.50	10.34	0.01%
AutoZone Inc	AZO	n/a	n/a	n/a	10.85	12.50	11.68	n/a
Linde PLC	LIN	0.67%	1.17	0.01%	9.55	7.00	8.28	0.06%
Avery Dennison Corp	AVY	0.05%	1.59	0.00%	7.82	2.00	4.91	0.00%

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STANDARD AND POOR'S 500 INDEX

		[6]	[7]	[8]	[9]	[10]	[11]	[12]
Name	Ticker	% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
Enphase Energy Inc	ENPH	n/a	n/a	n/a	13.90	14.00	13.95	n/a
MSCI Inc	MSCI	0.14%	1.10	0.00%	12.10	9.50	10.80	0.01%
Ball Corp	BALL	0.06%	1.18	0.00%	11.65	10.50	11.08	0.01%
Axon Enterprise Inc	AXON	n/a	n/a	n/a	20.50	25.00	22.75	n/a
Dayforce Inc	DAY	n/a	n/a	n/a	22.80		22.80	n/a
Carrier Global Corp	CARR	0.21%	0.94	0.00%	10.88	12.00	11.44	0.02%
Bank of New York Mellon Corp/The	BK	0.16%	2.62	0.00%	14.83	12.00	13.42	0.02%
Otis Worldwide Corp	OTIS	0.12%	1.50	0.00%	10.25	11.00	10.63	0.01%
Baxter International Inc	BAX	0.06%	3.06	0.00%	10.00	3.00	6.50	0.00%
Becton Dickinson & Co	BDX	0.21%	1.58	0.00%	8.65	6.00	7.33	0.02%
Berkshire Hathaway Inc	BRK/B	n/a	n/a	n/a	23.30		23.30	n/a
Best Buy Co Inc	BBY	n/a	3.64	n/a	-1.10	1.00	-0.05	n/a
Boston Scientific Corp	BSX	n/a	n/a	n/a	12.84	13.00	12.92	n/a
Bristol-Myers Squibb Co	BMJ	n/a	4.64	n/a	-4.81	1.00	-1.91	n/a
Brown-Forman Corp	BF/B	n/a	1.77	n/a	-1.65		-1.65	n/a
Coterra Energy Inc	CTRA	0.05%	3.51	0.00%	14.70	4.50	9.60	0.01%
Hilton Worldwide Holdings Inc	HLT	0.17%	0.26	0.00%	13.40		13.40	0.02%
Carnival Corp	CCL	n/a	n/a	n/a	298.10		298.10	n/a
Qorvo Inc	QRVO	n/a	n/a	n/a	10.00	5.50	7.75	n/a
Builders FirstSource Inc	BLDR	n/a	n/a	n/a	1.50	6.50	4.00	n/a
UDR Inc	UDR	0.04%	3.75	0.00%	21.18	2.50	11.84	0.01%
Clorox Co/The	CLX	0.06%	3.00	0.00%	7.67	7.00	7.34	0.00%
Paycom Software Inc	PAYC	0.03%	0.90	0.00%	7.54	21.00	14.27	0.00%
CMS Energy Corp	CMS	0.06%	2.92	0.00%	7.60	6.00	6.80	0.00%
Colgate-Palmolive Co	CL	0.25%	1.93	0.00%	8.81	11.50	10.16	0.03%
EPAM Systems Inc	EPAM	n/a	n/a	n/a	6.06	20.50	13.28	n/a
Conagra Brands Inc	CAG	0.05%	4.31	0.00%	1.86	3.50	2.68	0.00%
Airbnb Inc	ABNB	n/a	n/a	n/a	18.60	23.00	20.80	n/a
Consolidated Edison Inc	ED	0.11%	3.19	0.00%	5.70	6.00	5.85	0.01%
Corning Inc	GLW	0.11%	2.48	0.00%	13.93	17.50	15.72	0.02%
GoDaddy Inc	GDDY	n/a	n/a	n/a	-1.90	27.00	12.55	n/a
Cummins Inc	CMI	0.13%	2.25	0.00%	8.13	6.00	7.07	0.01%
Caesars Entertainment Inc	CZR	n/a	n/a	n/a	-10.53		-10.53	n/a
Danaher Corp	DHR	0.59%	0.39	0.00%	6.88	5.50	6.19	0.04%
Target Corp	TGT	0.21%	2.87	0.01%	8.21	10.00	9.11	0.02%
Deere & Co	DE	n/a	1.41	n/a	-11.05	4.00	-3.53	n/a
Dominion Energy Inc	D	0.14%	4.62	0.01%	20.40	3.00	11.70	0.02%
Dover Corp	DOV	0.08%	1.07	0.00%	8.36	6.00	7.18	0.01%
Alliant Energy Corp	LNT	0.05%	3.16	0.00%	7.70	6.00	6.85	0.00%
Steel Dynamics Inc	STLD	n/a	1.46	n/a	-15.40	2.00	-6.70	n/a
Duke Energy Corp	DUK	0.26%	3.63	0.01%	6.66	5.00	5.83	0.02%
Regency Centers Corp	REG	0.04%	3.71	0.00%	-5.59	11.50	2.96	0.00%
Eaton Corp PLC	ETN	0.39%	1.13	0.00%	15.42	11.00	13.21	0.05%
Ecolab Inc	ECL	0.21%	0.89	0.00%	16.60	11.00	13.80	0.03%
Revvity Inc	RVTY	0.05%	0.22	0.00%	8.20	-2.50	2.85	0.00%
Dell Technologies Inc	DELL	0.12%	1.50	0.00%	12.36	2.50	7.43	0.01%
Emerson Electric Co	EMR	0.19%	1.92	0.00%	12.93	7.00	9.97	0.02%
EOG Resources Inc	EOG	0.21%	2.96	0.01%	7.40	8.00	7.70	0.02%
Aon PLC	AON	0.22%	0.78	0.00%	11.60	12.00	11.80	0.03%
Entergy Corp	ETR	0.08%	3.43	0.00%	7.07	0.50	3.79	0.00%
Equifax Inc	EFX	0.11%	0.53	0.00%	20.46	7.00	13.73	0.01%
EQT Corp	EQT	0.06%	1.72	0.00%	15.00		15.00	0.01%
IQVIA Holdings Inc	IQV	n/a	n/a	n/a	10.27	11.00	10.64	n/a
Gartner Inc	IT	n/a	n/a	n/a	11.61	8.00	9.81	n/a
FedEx Corp	FDX	0.20%	2.02	0.00%	14.33	3.50	8.92	0.02%
FMC Corp	FMC	0.02%	3.52	0.00%	15.70	4.00	9.85	0.00%
Brown & Brown Inc	BRO	0.09%	0.50	0.00%	11.70	12.50	12.10	0.01%
Ford Motor Co	F	0.12%	5.68	0.01%	2.33	35.00	18.67	0.02%
NextEra Energy Inc	NEE	0.51%	2.44	0.01%	8.20	8.00	8.10	0.04%
Franklin Resources Inc	BEN	0.03%	6.15	0.00%	4.58	4.00	4.29	0.00%
Garmin Ltd	GRMN	0.10%	1.70	0.00%	9.60	5.00	7.30	0.01%

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STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6] % of Total Market Cap.	[7] Current Dividend Yield	[8] Cap. Weighted Div. Yield	[9] Yahoo! Finance Earnings Growth	[10] Value Line Earnings Growth	[11] Average Earnings Growth	[12] Cap. Weighted Long-Term Growth
Freeport-McMoRan Inc	FCX	0.21%	1.20	0.00%	10.30	11.00	10.65	0.02%
Dexcom Inc	DXCM	n/a	n/a	n/a	16.20		16.20	n/a
General Dynamics Corp	GD	0.25%	1.88	0.00%	14.43	10.00	12.22	0.03%
General Mills Inc	GIS	0.12%	3.25	0.00%	3.36	5.00	4.18	0.01%
Genuine Parts Co	GPC	0.06%	2.86	0.00%	7.10	8.50	7.80	0.00%
Atmos Energy Corp	ATO	0.06%	2.32	0.00%	7.40	7.00	7.20	0.00%
WW Grainger Inc	GWV	0.15%	0.79	0.00%	27.95	7.00	17.48	0.03%
Halliburton Co	HAL	0.08%	2.34	0.00%	13.00	20.00	16.50	0.01%
L3Harris Technologies Inc	LHX	0.13%	1.95	0.00%	8.23	11.50	9.87	0.01%
Healthpeak Properties Inc	DOC	n/a	5.25	n/a	-12.59	7.00	-2.80	n/a
Insulet Corp	PODD	n/a	n/a	n/a	16.25		16.25	n/a
Catalent Inc	CTLT	n/a	n/a	n/a	32.41	21.00	26.71	n/a
Fortive Corp	FTV	0.08%	0.41	0.00%	8.50	15.00	11.75	0.01%
Hershey Co/The	HSY	0.08%	2.86	0.00%	1.28	7.00	4.14	0.00%
Synchrony Financial	SYF	n/a	2.00	n/a	13.20	47.00	30.10	n/a
Hormel Foods Corp	HRL	0.05%	3.56	0.00%	6.20	7.50	6.85	0.00%
Arthur J Gallagher & Co	AJG	0.18%	0.85	0.00%	11.10	15.50	13.30	0.02%
Mondelez International Inc	MDLZ	0.29%	2.55	0.01%	6.70	10.00	8.35	0.02%
CenterPoint Energy Inc	CNP	0.06%	2.86	0.00%	7.37	6.50	6.94	0.00%
Humana Inc	HUM	0.11%	1.12	0.00%	1.04	4.50	2.77	0.00%
Willis Towers Watson PLC	WTW	0.09%	1.20	0.00%	9.50	10.50	10.00	0.01%
Illinois Tool Works Inc	ITW	0.23%	2.29	0.01%	4.35	9.00	6.68	0.02%
CDW Corp/DE	CDW	0.09%	1.10	0.00%	7.90	7.00	7.45	0.01%
Trane Technologies PLC	TT	0.26%	0.86	0.00%	13.87	14.00	13.94	0.04%
Interpublic Group of Cos Inc/The	IPG	0.04%	4.17	0.00%	6.10	8.50	7.30	0.00%
International Flavors & Fragrances Inc	IFF	0.08%	1.52	0.00%	13.11	0.50	6.81	0.01%
Generac Holdings Inc	GNRC	n/a	n/a	n/a	12.00	12.50	12.25	n/a
NXP Semiconductors NV	NXPI	0.18%	1.69	0.00%	9.56	7.50	8.53	0.02%
Kellanova	K	n/a	2.82	n/a	-23.12		-23.12	n/a
Broadridge Financial Solutions Inc	BR	0.07%	1.64	0.00%	11.80	9.50	10.65	0.01%
Kimberly-Clark Corp	KMB	0.14%	3.43	0.00%	7.29	7.50	7.40	0.01%
Kimco Realty Corp	KIM	0.05%	4.13	0.00%	-11.06	18.00	3.47	0.00%
Oracle Corp	ORCL	1.40%	0.94	0.01%	11.54	10.00	10.77	0.15%
Kroger Co/The	KR	0.12%	2.23	0.00%	8.00	5.00	6.50	0.01%
Lennar Corp	LEN	0.13%	1.07	0.00%	9.10	6.00	7.55	0.01%
Eli Lilly & Co	LLY	n/a	0.59	n/a	72.95	28.50	50.73	n/a
Bath & Body Works Inc	BBWI	0.02%	2.51	0.00%	5.02	26.50	15.76	0.00%
Charter Communications Inc	CHTR	n/a	n/a	n/a	5.20	6.50	5.85	n/a
Loews Corp	L	0.05%	0.32	0.00%	14.03	15.50	14.77	0.01%
Lowe's Cos Inc	LOW	0.45%	1.70	0.01%	2.60	5.50	4.05	0.02%
Hubbell Inc	HUBB	0.07%	1.14	0.00%	6.70	9.00	7.85	0.01%
IDEX Corp	IEX	0.05%	1.29	0.00%	12.00	5.00	8.50	0.00%
Marsh & McLennan Cos Inc	MMC	0.32%	1.46	0.00%	7.30	12.00	9.65	0.03%
Masco Corp	MAS	0.05%	1.38	0.00%	8.20	9.50	8.85	0.00%
S&P Global Inc	SPGI	0.49%	0.70	0.00%	13.43	8.00	10.72	0.05%
Medtronic PLC	MDT	0.34%	3.11	0.01%	5.51	6.50	6.01	0.02%
Viatris Inc	VTRS	n/a	4.13	n/a	-3.20	-1.50	-2.35	n/a
CVS Health Corp	CVS	0.23%	4.23	0.01%	-0.84	2.50	0.83	0.00%
DuPont de Nemours Inc	DD	0.11%	1.71	0.00%	10.85	9.00	9.93	0.01%
Micron Technology Inc	MU	0.34%	0.44	0.00%	-2.62	24.00	10.69	0.04%
Motorola Solutions Inc	MSI	0.22%	0.87	0.00%	10.10	10.00	10.05	0.02%
Cboe Global Markets Inc	CBOE	0.06%	1.23	0.00%	9.05	14.00	11.53	0.01%
Newmont Corp	NEM	0.18%	1.87	0.00%	25.70	13.00	19.35	0.04%
NIKE Inc	NIKE	0.31%	1.67	0.01%	4.42	12.00	8.21	0.03%
NiSource Inc	NI	0.05%	3.06	0.00%	7.70	9.50	8.60	0.00%
Norfolk Southern Corp	NSC	0.17%	2.17	0.00%	9.10	9.50	9.30	0.02%
Principal Financial Group Inc	PFG	0.06%	3.35	0.00%	13.00	4.00	8.50	0.00%
Eversource Energy	ES	0.07%	4.20	0.00%	4.20	6.00	5.10	0.00%
Northrop Grumman Corp	NOC	0.23%	1.56	0.00%	8.70	8.00	8.35	0.02%
Wells Fargo & Co	WFC	0.57%	2.83	0.02%	8.16	9.50	8.83	0.05%
Nucor Corp	NUE	n/a	1.44	n/a	-7.50		-7.50	n/a

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Name	Ticker	% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
Occidental Petroleum Corp	OXY	0.14%	1.71	0.00%	4.10	6.00	5.05	0.01%
Omnicom Group Inc	OMC	0.06%	2.71	0.00%	8.00	7.00	7.50	0.00%
ONEOK Inc	OKE	0.16%	4.35	0.01%	2.60	12.00	7.30	0.01%
Raymond James Financial Inc	RJF	0.07%	1.47	0.00%	14.20	10.00	12.10	0.01%
PG&E Corp	PCG	0.12%	0.20	0.00%	9.60	9.00	9.30	0.01%
Parker-Hannifin Corp	PH	0.24%	1.03	0.00%	8.69	12.50	10.60	0.03%
Rollins Inc	ROL	0.07%	1.19	0.00%	12.70	9.00	10.85	0.01%
PPL Corp	PPL	0.07%	3.11	0.00%	6.80	7.50	7.15	0.01%
ConocoPhillips	COP	0.36%	2.96	0.01%	5.20	4.00	4.60	0.02%
PulteGroup Inc	PHM	0.09%	0.56	0.00%	8.00	8.00	8.00	0.01%
Pinnacle West Capital Corp	PNW	0.03%	3.97	0.00%	7.20	4.50	5.85	0.00%
PNC Financial Services Group Inc/The	PNC	0.22%	3.46	0.01%	6.92	10.00	8.46	0.02%
PPG Industries Inc	PPG	0.09%	2.05	0.00%	9.05	7.00	8.03	0.01%
Progressive Corp/The	PGR	n/a	0.16	n/a	49.20	22.50	35.85	n/a
Veralto Corp	VLTO	0.08%	0.32	0.00%	7.41		7.41	0.01%
Public Service Enterprise Group Inc	PEG	0.13%	2.69	0.00%	5.90	5.00	5.45	0.01%
Cooper Cos Inc/The	COO	n/a	n/a	n/a	11.45	7.50	9.48	n/a
Edison International	EIX	0.10%	3.58	0.00%	8.15	6.00	7.08	0.01%
Schlumberger NV	SLB	n/a	2.62	n/a	21.10	21.50	21.30	n/a
Charles Schwab Corp/The	SCHW	0.34%	1.54	0.01%	11.45	10.50	10.98	0.04%
Sherwin-Williams Co/The	SHW	0.28%	0.75	0.00%	10.48	11.00	10.74	0.03%
West Pharmaceutical Services Inc	WST	0.06%	0.27	0.00%	1.08	7.50	4.29	0.00%
J M Smucker Co/The	SJM	0.04%	3.57	0.00%	5.04	7.00	6.02	0.00%
Snap-on Inc	SNA	0.05%	2.57	0.00%	3.80	5.50	4.65	0.00%
AMETEK Inc	AME	0.12%	0.65	0.00%	8.50	10.00	9.25	0.01%
Uber Technologies Inc	UBER	n/a	n/a	n/a	47.00		47.00	n/a
Southern Co/The	SO	0.29%	3.19	0.01%	7.30	6.50	6.90	0.02%
Truist Financial Corp	TFC	0.17%	4.86	0.01%	5.68	1.50	3.59	0.01%
Southwest Airlines Co	LUV	0.05%	2.43	0.00%	12.79		12.79	0.01%
W R Berkley Corp	WRB	0.06%	0.56	0.00%	9.00	13.00	11.00	0.01%
Stanley Black & Decker Inc	SWK	0.05%	2.98	0.00%	15.82	11.00	13.41	0.01%
Public Storage	PSA	n/a	3.30	n/a	-20.02	7.00	-6.51	n/a
Arista Networks Inc	ANET	n/a	n/a	n/a	19.40	19.50	19.45	n/a
Sysco Corp	SY	0.11%	2.61	0.00%	7.15	13.50	10.33	0.01%
Corteva Inc	CTVA	0.12%	1.16	0.00%	12.78	9.50	11.14	0.01%
Texas Instruments Inc	TXN	0.56%	2.63	0.01%	-2.80	3.00	0.10	0.00%
Textron Inc	TXT	0.05%	0.09	0.00%	12.60	13.00	12.80	0.01%
Thermo Fisher Scientific Inc	TMO	0.70%	0.25	0.00%	6.84	6.00	6.42	0.04%
TJX Cos Inc/The	TJX	0.39%	1.28	0.00%	9.31	17.00	13.16	0.05%
Globe Life Inc	GL	0.03%	0.91	0.00%	14.89	8.50	11.70	0.00%
Johnson Controls International plc	JCI	0.15%	1.91	0.00%	8.83	9.50	9.17	0.01%
Ulta Beauty Inc	ULTA	n/a	n/a	n/a	1.08	8.00	4.54	n/a
Union Pacific Corp	UNP	0.44%	2.17	0.01%	12.20	8.00	10.10	0.04%
Keysight Technologies Inc	KEYS	n/a	n/a	n/a	-2.04	8.00	2.98	n/a
UnitedHealth Group Inc	UNH	1.60%	1.44	0.02%	12.38	12.00	12.19	0.19%
Blackstone Inc	BX	0.33%	2.14	0.01%	23.64	16.00	19.82	0.06%
Marathon Oil Corp	MRO	0.04%	1.65	0.00%	12.60	12.50	12.55	0.01%
Ventas Inc	VTR	0.08%	2.81	0.00%	-19.70	23.00	1.65	0.00%
Labcorp Holdings Inc	LH	0.06%	1.29	0.00%	9.27	1.00	5.14	0.00%
Vulcan Materials Co	VMC	0.10%	0.73	0.00%	12.35	8.00	10.18	0.01%
Weyerhaeuser Co	WY	0.07%	2.36	0.00%	5.00	-2.00	1.50	0.00%
Williams Cos Inc/The	WMB	0.16%	4.16	0.01%	6.60	11.00	8.80	0.01%
Constellation Energy Corp	CEG	0.24%	0.54	0.00%	14.60		14.60	0.04%
WEC Energy Group Inc	WEC	0.09%	3.47	0.00%	5.86	6.00	5.93	0.01%
Adobe Inc	ADBE	n/a	n/a	n/a	13.92	13.50	13.71	n/a
Visa Corp	VST	n/a	0.74	n/a	140.40		140.40	n/a
AES Corp/The	AES	0.04%	3.44	0.00%	6.10	14.00	10.05	0.00%
Expeditors International of Washington Inc	EXPD	0.05%	1.11	0.00%	1.50	-1.00	0.25	0.00%
Amgen Inc	AMGN	0.51%	2.79	0.01%	5.60	4.50	5.05	0.03%
Apple Inc	AAPL	10.47%	0.43	0.04%	11.10	8.00	9.55	1.00%
Autodesk Inc	ADSK	n/a	n/a	n/a	11.39	14.00	12.70	n/a

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[1] Estimated Weighted Average Dividend Yield	1.68%
[2] Estimated Weighted Average Long-Term Growth Rate	9.74%
[3] S&P 500 Estimated Required Market Return	11.51%
[4] Risk-Free Rate	4.41%
[5] Implied Market Risk Premium	7.10%

STANDARD AND POOR'S 500 INDEX

		[6]	[7]	[8]	[9]	[10]	[11]	[12]
Name	Ticker	% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
Cintas Corp	CTAS	0.25%	0.76	0.00%	12.85	14.00	13.43	0.03%
Comcast Corp	CMCSA	0.48%	2.97	0.01%	7.21	7.50	7.36	0.04%
Molson Coors Beverage Co	TAP	0.03%	3.06	0.00%	2.64	11.50	7.07	0.00%
KLA Corp	KLAC	0.31%	0.75	0.00%	15.55	13.00	14.28	0.04%
Marriott International Inc/MD	MAR	0.21%	1.01	0.00%	5.61	11.00	8.31	0.02%
Fiserv Inc	FI	n/a	n/a	n/a	16.04	9.50	12.77	n/a
McCormick & Co Inc/MD	MKCO	0.06%	2.04	0.00%	8.17	4.50	6.34	0.00%
PACCAR Inc	PCAR	0.15%	1.22	0.00%	6.76	14.50	10.63	0.02%
Costco Wholesale Corp	COST	1.16%	0.52	0.01%	10.33	10.00	10.17	0.12%
Stryker Corp	SYK	0.41%	0.89	0.00%	11.29	9.50	10.40	0.04%
Tyson Foods Inc	TSN	n/a	3.29	n/a	51.20	6.00	28.60	n/a
Lamb Weston Holdings Inc	LW	0.03%	2.22	0.00%	14.60	14.50	14.55	0.00%
Applied Materials Inc	AMAT	0.49%	0.79	0.00%	13.93	9.50	11.72	0.06%
Cardinal Health Inc	CAH	0.08%	1.83	0.00%	9.95	6.50	8.23	0.01%
Cincinnati Financial Corp	CINF	0.06%	2.38	0.00%	7.80	10.50	9.15	0.01%
Paramount Global	PARA	n/a	1.88	n/a	46.35	-2.50	21.93	n/a
DR Horton Inc	DHI	0.18%	0.63	0.00%	7.70	5.00	6.35	0.01%
Electronic Arts Inc	EA	0.11%	0.53	0.00%	13.00	14.50	13.75	0.02%
Erie Indemnity Co	ERIE	0.07%	0.94	0.00%	10.00	20.00	15.00	0.01%
Fair Isaac Corp	FICO	n/a	n/a	n/a	24.32	16.50	20.41	n/a
Fastenal Co	FAST	0.12%	2.18	0.00%	6.33	9.00	7.67	0.01%
M&T Bank Corp	MTB	0.09%	3.03	0.00%	3.49	4.50	4.00	0.00%
Xcel Energy Inc	XEL	0.11%	3.35	0.00%	6.73	7.00	6.87	0.01%
Fifth Third Bancorp	FITB	0.09%	3.45	0.00%	1.70	4.50	3.10	0.00%
Gilead Sciences Inc	GILD	0.31%	3.67	0.01%	5.98	2.50	4.24	0.01%
Hasbro Inc	HAS	n/a	3.87	n/a	34.00	8.50	21.25	n/a
Huntington Bancshares Inc/OH	HBAN	0.06%	4.22	0.00%	4.64	7.50	6.07	0.00%
Welltower Inc	WELL	n/a	2.09	n/a	55.38	26.50	40.94	n/a
Biogen Inc	BIIB	n/a	n/a	n/a	3.60	0.50	2.05	n/a
Northern Trust Corp	NTRS	0.05%	3.33	0.00%	8.34	4.00	6.17	0.00%
Packaging Corp of America	PKG	n/a	2.32	n/a	-14.29	9.00	-2.65	n/a
Paychex Inc	PAYX	0.14%	2.92	0.00%	7.19	8.00	7.60	0.01%
QUALCOMM Inc	QCOM	0.56%	2.00	0.01%	12.63	6.00	9.32	0.05%
Ross Stores Inc	ROST	0.15%	0.98	0.00%	9.93	14.00	11.97	0.02%
IDEXX Laboratories Inc	IDXX	n/a	n/a	n/a	10.85	10.50	10.68	n/a
Starbucks Corp	SBUX	0.33%	2.34	0.01%	8.33	9.00	8.67	0.03%
KeyCorp	KEY	0.05%	4.90	0.00%	16.49		16.49	0.01%
Fox Corp	FOXA	0.03%	1.28	0.00%	13.51	13.50	13.51	0.00%
Fox Corp	FOX	n/a	1.39	n/a				n/a
State Street Corp	STT	0.08%	3.44	0.00%	7.89		7.89	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	n/a	n/a	n/a	51.20		51.20	n/a
US Bancorp	USB	0.21%	4.37	0.01%	3.90	4.00	3.95	0.01%
A O Smith Corp	AOS	0.03%	1.42	0.00%	10.00	9.00	9.50	0.00%
Gen Digital Inc	GEN	0.05%	1.82	0.00%	11.45	10.50	10.98	0.01%
T Rowe Price Group Inc	TROW	0.07%	4.55	0.00%	0.70	4.50	2.60	0.00%
Waste Management Inc	WM	0.25%	1.45	0.00%	12.35	6.00	9.18	0.02%
Palantir Technologies Inc	PLTR	n/a	n/a	n/a	57.64		57.64	n/a
Constellation Brands Inc	STZ	0.14%	1.57	0.00%	11.24	6.00	8.62	0.01%
Invesco Ltd	IVZ	0.02%	4.67	0.00%	10.71	10.00	10.36	0.00%
Intuit Inc	INTU	0.51%	0.67	0.00%	14.20	13.50	13.85	0.07%
Morgan Stanley	MS	0.50%	3.55	0.02%	18.54	9.50	14.02	0.07%
Microchip Technology Inc	MCHP	n/a	2.26	n/a	-10.90	6.00	-2.45	n/a
CrowdStrike Holdings Inc	CRWD	n/a	n/a	n/a	21.03		21.03	n/a
Chubb Ltd	CB	0.34%	1.26	0.00%	2.40	13.00	7.70	0.03%
Hologic Inc	HOLX	n/a	n/a	n/a	6.30	-2.00	2.15	n/a
Citizens Financial Group Inc	CFG	0.05%	4.09	0.00%	0.85	7.50	4.18	0.00%
Jabil Inc	JBL	0.04%	0.27	0.00%	12.70	13.50	13.10	0.01%
O'Reilly Automotive Inc	ORLY	n/a	n/a	n/a	11.10	10.50	10.80	n/a
Allstate Corp/The	ALL	n/a	1.94	n/a	169.30	30.00	99.65	n/a
Equity Residential	EQR	n/a	3.63	n/a	-1.06	-4.00	-2.53	n/a
BorgWarner Inc	BWA	0.02%	1.21	0.00%	11.13	5.50	8.32	0.00%

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STANDARD AND POOR'S 500 INDEX

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Name	Ticker	% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
Keurig Dr Pepper Inc	KDP	0.15%	2.45	0.00%	7.04	10.00	8.52	0.01%
Host Hotels & Resorts Inc	HST	n/a	4.55	n/a	28.40	51.00	39.70	n/a
Incyte Corp	INCY	n/a	n/a	n/a	31.52	18.50	25.01	n/a
Simon Property Group Inc	SPG	0.16%	4.85	0.01%	8.60	3.50	6.05	0.01%
Eastman Chemical Co	EMN	0.04%	2.89	0.00%	12.45	3.50	7.98	0.00%
AvalonBay Communities Inc	AVB	n/a	3.02	n/a	-11.27	5.50	-2.89	n/a
Prudential Financial Inc	PRU	0.13%	4.29	0.01%	9.50	4.00	6.75	0.01%
United Parcel Service Inc	UPS	0.30%	4.78	0.01%	2.70	3.50	3.10	0.01%
Walgreens Boots Alliance Inc	WBA	n/a	11.16	n/a	-21.61	-7.00	-14.31	n/a
STERIS PLC	STE	0.07%	0.94	0.00%	10.00	8.00	9.00	0.01%
McKesson Corp	MCK	0.19%	0.57	0.00%	13.85	10.00	11.93	0.02%
Lockheed Martin Corp	LMT	0.41%	2.16	0.01%	4.47	9.50	6.99	0.03%
Cencora Inc	COR	0.13%	0.91	0.00%	10.10	6.50	8.30	0.01%
Capital One Financial Corp	COF	0.17%	1.60	0.00%	-0.97	2.50	0.77	0.00%
Campbell Soup Co	CPB	0.04%	3.03	0.00%	5.05	5.00	5.03	0.00%
Waters Corp	WAT	n/a	n/a	n/a	5.59	6.50	6.05	n/a
Nordson Corp	NDSN	0.04%	1.19	0.00%	13.00	10.00	11.50	0.01%
Dollar Tree Inc	DLTR	n/a	n/a	n/a	7.14	24.00	15.57	n/a
Darden Restaurants Inc	DRI	0.06%	3.41	0.00%	8.64	10.00	9.32	0.01%
Evergy Inc	EVRG	0.04%	4.14	0.00%	6.35	7.50	6.93	0.00%
Match Group Inc	MTCH	n/a	n/a	n/a	30.27	12.50	21.39	n/a
Domino's Pizza Inc	DPZ	0.04%	1.40	0.00%	11.37	12.50	11.94	0.01%
NVR Inc	NVR	n/a	n/a	n/a	7.60	1.50	4.55	n/a
NetApp Inc	NTAP	0.07%	1.68	0.00%	7.40	7.50	7.45	0.01%
Old Dominion Freight Line Inc	ODFL	0.13%	0.52	0.00%	10.80	7.50	9.15	0.01%
DaVita Inc	DVA	n/a	n/a	n/a	16.40	9.50	12.95	n/a
Hartford Financial Services Group Inc/The	HIG	0.10%	1.60	0.00%	10.50	7.00	8.75	0.01%
Iron Mountain Inc	IRM	0.10%	2.41	0.00%	4.70	5.50	5.10	0.01%
Estee Lauder Cos Inc/The	EL	0.07%	2.65	0.00%	23.44	3.50	13.47	0.01%
Cadence Design Systems Inc	CDNS	n/a	n/a	n/a	17.55	12.00	14.78	n/a
Tyler Technologies Inc	TYL	n/a	n/a	n/a	15.10	8.00	11.55	n/a
Universal Health Services Inc	UHS	0.04%	0.35	0.00%	24.54	9.00	16.77	0.01%
Skyworks Solutions Inc	SWKS	0.05%	2.83	0.00%	15.00		15.00	0.01%
Quest Diagnostics Inc	DGX	0.05%	1.93	0.00%	6.83	3.00	4.92	0.00%
Rockwell Automation Inc	ROK	0.09%	1.86	0.00%	0.46	9.50	4.98	0.00%
Kraft Heinz Co/The	KHC	0.13%	4.56	0.01%	3.48	4.50	3.99	0.01%
American Tower Corp	AMT	n/a	2.79	n/a	32.25	11.00	21.63	n/a
Regeneron Pharmaceuticals Inc	REGN	n/a	n/a	n/a	10.50	1.50	6.00	n/a
Amazon.com Inc	AMZN	n/a	n/a	n/a	31.75	24.50	28.13	n/a
Jack Henry & Associates Inc	JKHY	0.04%	1.25	0.00%	9.70	6.50	8.10	0.00%
Ralph Lauren Corp	RL	0.02%	1.70	0.00%	10.45	11.00	10.73	0.00%
BXP Inc	BXP	n/a	4.87	n/a	-50.84	0.50	-25.17	n/a
Amphenol Corp	APH	0.23%	1.01	0.00%	16.90	13.50	15.20	0.04%
Howmet Aerospace Inc	HWM	n/a	0.32	n/a	28.39	12.00	20.20	n/a
Valero Energy Corp	VLO	n/a	3.17	n/a	-20.90	9.50	-5.70	n/a
Synopsys Inc	SNPS	n/a	n/a	n/a	16.54	12.50	14.52	n/a
CH Robinson Worldwide Inc	CHRW	0.04%	2.25	0.00%	14.70	5.50	10.10	0.00%
Accenture PLC	ACN	0.65%	1.67	0.01%	9.64	12.50	11.07	0.07%
TransDigm Group Inc	TDG	n/a	n/a	n/a	20.71	22.00	21.36	n/a
Yum! Brands Inc	YUM	0.12%	1.92	0.00%	11.57	10.00	10.79	0.01%
Prologis Inc	PLD	n/a	3.04	n/a	-6.05	0.50	-2.78	n/a
FirstEnergy Corp	FE	0.08%	3.83	0.00%	6.30	5.50	5.90	0.00%
VeriSign Inc	VRSN	n/a	n/a	n/a	8.00	12.50	10.25	n/a
Quanta Services Inc	PWR	0.13%	0.12	0.00%	17.22	16.50	16.86	0.02%
Henry Schein Inc	HSIC	n/a	n/a	n/a	5.00	8.50	6.75	n/a
Ameren Corp	AEE	0.07%	3.06	0.00%	6.20	6.50	6.35	0.00%
ANSYS Inc	ANSS	n/a	n/a	n/a	6.40	9.50	7.95	n/a
FactSet Research Systems Inc	FDS	0.05%	0.90	0.00%	4.70	11.00	7.85	0.00%
NVIDIA Corp	NVDA	n/a	0.03	n/a	52.53	41.00	46.77	n/a
Cognizant Technology Solutions Corp	CTSH	0.11%	1.55	0.00%	6.27	8.00	7.14	0.01%
Intuitive Surgical Inc	ISRG	n/a	n/a	n/a	14.08	13.50	13.79	n/a

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Take-Two Interactive Software Inc	TTWO	n/a	n/a	n/a	64.80		64.80	n/a
Republic Services Inc	RSG	0.19%	1.16	0.00%	9.93	11.00	10.47	0.02%
eBay Inc	EBAY	0.09%	1.66	0.00%	8.39	6.00	7.20	0.01%
Goldman Sachs Group Inc/The	GS	0.46%	2.42	0.01%	26.28	7.50	16.89	0.08%
SBA Communications Corp	SBAC	n/a	1.63	n/a	26.11	16.50	21.31	n/a
Sempra	SRE	0.16%	2.97	0.00%	5.90	7.00	6.45	0.01%
Moody's Corp	MCO	0.26%	0.72	0.00%	15.49	9.00	12.25	0.03%
ON Semiconductor Corp	ON	n/a	n/a	n/a	4.66	8.00	6.33	n/a
Booking Holdings Inc	BKNG	n/a	0.83	n/a	22.06	22.00	22.03	n/a
F5 Inc	FFIV	n/a	n/a	n/a	9.90	10.00	9.95	n/a
Akamai Technologies Inc	AKAM	n/a	n/a	n/a	6.60	6.00	6.30	n/a
Charles River Laboratories International Inc	CRL	n/a	n/a	n/a	5.42	7.00	6.21	n/a
MarketAxess Holdings Inc	MKTX	0.03%	1.16	0.00%	7.52	9.00	8.26	0.00%
Devon Energy Corp	DVN	0.07%	2.25	0.00%	6.10	3.00	4.55	0.00%
Bio-Techne Corp	TECH	0.04%	0.40	0.00%	11.25	10.00	10.63	0.00%
Alphabet Inc	GOOGL	n/a	0.48	n/a	20.50		20.50	n/a
Teleflex Inc	TFX	0.03%	0.55	0.00%	7.90	8.50	8.20	0.00%
Allegion plc	ALLE	0.04%	1.32	0.00%	7.20	8.50	7.85	0.00%
Netflix Inc	NFLX	n/a	n/a	n/a	25.80	16.50	21.15	n/a
Agilent Technologies Inc	A	0.13%	0.64	0.00%	4.90	8.00	6.45	0.01%
Warner Bros Discovery Inc	WBD	n/a	n/a	n/a	-68.41		-68.41	n/a
Elevance Health Inc	ELV	0.36%	1.25	0.00%	12.05	11.00	11.53	0.04%
Trimble Inc	TRMB	n/a	n/a	n/a	10.00	5.50	7.75	n/a
CME Group Inc	CME	0.23%	2.08	0.00%	2.82	5.50	4.16	0.01%
Juniper Networks Inc	JNPR	0.04%	2.26	0.00%	11.00	7.50	9.25	0.00%
Blackrock Finance Inc	BLK	0.42%	2.15	0.01%	11.62	8.00	9.81	0.04%
DTE Energy Co	DTE	0.08%	3.18	0.00%	5.10	4.50	4.80	0.00%
Nasdaq Inc	NDAQ	0.12%	1.31	0.00%	8.09	3.50	5.80	0.01%
Celanese Corp	CE	0.04%	2.06	0.00%	18.49	4.50	11.50	0.01%
Philip Morris International Inc	PM	0.56%	4.45	0.02%	9.36	5.00	7.18	0.04%
Salesforce Inc	CRM	n/a	0.58	n/a	16.23	24.00	20.12	n/a
Ingersoll Rand Inc	IR	0.12%	0.08	0.00%	10.23	10.50	10.37	0.01%
Huntington Ingalls Industries Inc	HII	0.03%	1.97	0.00%	6.72	10.00	8.36	0.00%
Roper Technologies Inc	ROP	0.18%	0.54	0.00%	8.00	9.00	8.50	0.01%
MetLife Inc	MET	0.17%	2.64	0.00%	11.50	7.50	9.50	0.02%
Tapestry Inc	TPR	0.03%	2.98	0.00%	11.00	9.00	10.00	0.00%
CSX Corp	CSX	0.20%	1.39	0.00%	9.30	9.00	9.15	0.02%
Edwards Lifesciences Corp	EW	n/a	n/a	n/a	7.89	10.00	8.95	n/a
Ameriprise Financial Inc	AMP	0.14%	1.26	0.00%	17.60	10.00	13.80	0.02%
Zebra Technologies Corp	ZBRA	n/a	n/a	n/a	21.10	1.00	11.05	n/a
Zimmer Biomet Holdings Inc	ZBH	0.06%	0.89	0.00%	7.00	6.50	6.75	0.00%
CBRE Group Inc	CBRE	n/a	n/a	n/a	11.00	5.00	8.00	n/a
Camden Property Trust	CPT	n/a	3.34	n/a	-20.15	-6.50	-13.33	n/a
Mastercard Inc	MA	1.34%	0.53	0.01%	16.51	14.50	15.51	0.21%
CarMax Inc	KMX	n/a	n/a	n/a	6.30	3.50	4.90	n/a
Intercontinental Exchange Inc	ICE	0.27%	1.12	0.00%	9.53	7.50	8.52	0.02%
Smurfit WestRock PLC	SW	n/a	2.45	n/a				n/a
Fidelity National Information Services Inc	FIS	0.14%	1.72	0.00%	-0.60	4.00	1.70	0.00%
Chipotle Mexican Grill Inc	CMG	n/a	n/a	n/a	21.17	20.00	20.59	n/a
Wynn Resorts Ltd	WYNN	0.03%	1.04	0.00%	7.51	27.00	17.26	0.01%
Live Nation Entertainment Inc	LYV	n/a	n/a	n/a	35.11		35.11	n/a
Assurant Inc	AIZ	0.03%	1.45	0.00%	7.10	9.50	8.30	0.00%
NRG Energy Inc	NRG	0.06%	1.79	0.00%	4.00	11.00	7.50	0.00%
Regions Financial Corp	RF	0.06%	4.29	0.00%	2.21	4.50	3.36	0.00%
Monster Beverage Corp	MNST	n/a	n/a	n/a	13.11	12.00	12.56	n/a
Mosaic Co/The	MOS	n/a	3.14	n/a	-20.40	-9.50	-14.95	n/a
Baker Hughes Co	BKR	n/a	2.32	n/a	45.50	28.00	36.75	n/a
Expedia Group Inc	EXPE	n/a	n/a	n/a	20.20	39.00	29.60	n/a
CF Industries Holdings Inc	CF	n/a	2.33	n/a	-12.80	-1.50	-7.15	n/a
Leidos Holdings Inc	LDOS	0.06%	0.93	0.00%	12.70	9.50	11.10	0.01%
APA Corp	APA	0.03%	4.09	0.00%	0.57	6.00	3.29	0.00%

MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.68%
[2] Estimated Weighted Average Long-Term Growth Rate	9.74%
[3] S&P 500 Estimated Required Market Return	11.51%
[4] Risk-Free Rate	4.41%
[5] Implied Market Risk Premium	7.10%

STANDARD AND POOR'S 500 INDEX

		[6]	[7]	[8]	[9]	[10]	[11]	[12]
Name	Ticker	% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
Alphabet Inc	GOOG	2.76%	0.48	0.01%	20.50	13.00	16.75	0.46%
First Solar Inc	FSLR	n/a	n/a	n/a	56.60	34.50	45.55	n/a
Discover Financial Services	DFS	n/a	2.00	n/a	-7.29	4.00	-1.65	n/a
Visa Inc	V	1.36%	0.76	0.01%	12.59	13.50	13.05	0.18%
Mid-America Apartment Communities Inc	MAA	n/a	3.70	n/a	-0.78	-15.00	-7.89	n/a
Xylem Inc/NY	XYL	0.10%	1.07	0.00%	14.66	12.00	13.33	0.01%
Marathon Petroleum Corp	MPC	n/a	2.03	n/a	-3.70	-6.50	-5.10	n/a
Advanced Micro Devices Inc	AMD	n/a	n/a	n/a	32.89	17.00	24.95	n/a
Tractor Supply Co	TSCO	0.09%	1.51	0.00%	7.67	11.50	9.59	0.01%
ResMed Inc	RMD	0.11%	0.87	0.00%	14.70	10.00	12.35	0.01%
Mettler-Toledo International Inc	MTD	n/a	n/a	n/a	8.50	8.50	8.50	n/a
Jacobs Solutions Inc	J	0.05%	0.89	0.00%	12.25	11.00	11.63	0.01%
Copart Inc	CPRT	n/a	n/a	n/a	22.30	9.00	15.65	n/a
VICI Properties Inc	VICI	0.10%	5.19	0.01%	6.30	10.50	8.40	0.01%
Fortinet Inc	FTNT	n/a	n/a	n/a	15.36	24.00	19.68	n/a
Albemarle Corp	ALB	n/a	1.71	n/a	-6.21	-3.50	-4.86	n/a
Moderna Inc	MRNA	n/a	n/a	n/a	-51.34	-18.50	-34.92	n/a
Essex Property Trust Inc	ESS	0.06%	3.32	0.00%	3.62	4.50	4.06	0.00%
CoStar Group Inc	CSGP	n/a	n/a	n/a	13.80	16.50	15.15	n/a
Realty Income Corp	O	0.16%	4.99	0.01%	22.62	5.00	13.81	0.02%
Westinghouse Air Brake Technologies Corp	WAB	0.09%	0.44	0.00%	13.75	16.00	14.88	0.01%
Pool Corp	POOL	0.04%	1.27	0.00%	-8.75	14.00	2.63	0.00%
Western Digital Corp	WDC	n/a	n/a	n/a	-26.80	22.50	-2.15	n/a
PepsiCo Inc	PEP	0.69%	3.19	0.02%	6.97	7.50	7.24	0.05%
TE Connectivity PLC	TEL	0.14%	1.72	0.00%	8.80	10.50	9.65	0.01%
Diamondback Energy Inc	FANG	0.15%	5.43	0.01%	6.20	2.50	4.35	0.01%
Palo Alto Networks Inc	PANW	n/a	n/a	n/a	15.20		15.20	n/a
ServiceNow Inc	NOW	n/a	n/a	n/a	21.90	32.50	27.20	n/a
Church & Dwight Co Inc	CHD	0.08%	1.08	0.00%	8.88	6.50	7.69	0.01%
Federal Realty Investment Trust	FRT	0.03%	3.83	0.00%	10.59	2.50	6.55	0.00%
Amentum Holdings Inc	AMTM	n/a	n/a	n/a				n/a
MGM Resorts International	MGM	n/a	n/a	n/a	-2.33	25.00	11.34	n/a
American Electric Power Co Inc	AEP	0.16%	3.43	0.01%	6.62	6.50	6.56	0.01%
Invitation Homes Inc	INVH	0.06%	3.18	0.00%	3.57	13.50	8.54	0.01%
PTC Inc	PTC	n/a	n/a	n/a	14.90	29.00	21.95	n/a
JB Hunt Transport Services Inc	JBHT	0.05%	1.00	0.00%	7.60	7.50	7.55	0.00%
Lam Research Corp	LRCX	0.31%	1.13	0.00%	11.03	12.50	11.77	0.04%
Mohawk Industries Inc	MHK	n/a	n/a	n/a	12.75	1.00	6.88	n/a
Pentair PLC	PNR	0.05%	0.94	0.00%	13.70	12.00	12.85	0.01%
GE HealthCare Technologies Inc	GEHC	0.13%	0.13	0.00%	10.80		10.80	0.01%
Vertex Pharmaceuticals Inc	VRTX	n/a	n/a	n/a	12.33	11.00	11.67	n/a
Amcor PLC	AMCR	0.05%	4.41	0.00%	5.40	11.50	8.45	0.00%
Meta Platforms Inc	META	3.70%	0.35	0.01%	13.60	17.00	15.30	0.57%
T-Mobile US Inc	TMUS	n/a	1.71	n/a	20.86	20.00	20.43	n/a
United Rentals Inc	URI	0.16%	0.81	0.00%	9.50	19.00	14.25	0.02%
Honeywell International Inc	HON	0.40%	2.19	0.01%	8.07	10.00	9.04	0.04%
Alexandria Real Estate Equities Inc	ARE	0.06%	4.38	0.00%	-5.92	9.50	1.79	0.00%
Delta Air Lines Inc	DAL	0.10%	1.18	0.00%	8.42		8.42	0.01%
Seagate Technology Holdings PLC	STX	n/a	2.56	n/a	213.07	32.00	122.54	n/a
United Airlines Holdings Inc	UAL	n/a	n/a	n/a	25.52		25.52	n/a
News Corp	NWS	n/a	0.72	n/a				n/a
Centene Corp	CNC	n/a	n/a	n/a	11.34	10.00	10.67	n/a
Martin Marietta Materials Inc	MLM	0.10%	0.59	0.00%	8.70	11.00	9.85	0.01%
Teradyne Inc	TER	0.06%	0.36	0.00%	7.68	9.50	8.59	0.01%
PayPal Holdings Inc	PYPL	n/a	n/a	n/a	12.00	11.50	11.75	n/a
Tesla Inc	TSLA	n/a	n/a	n/a	1.43	19.00	10.22	n/a
Arch Capital Group Ltd	ACGL	n/a	n/a	n/a	19.70	17.00	18.35	n/a
KKR & Co Inc	KKR	0.34%	0.54	0.00%	30.19	5.00	17.60	0.06%
Dow Inc	DOW	0.11%	5.13	0.01%	23.53	0.50	12.02	0.01%
Everest Group Ltd	EG	0.05%	2.04	0.00%	2.30	10.50	6.40	0.00%
Teledyne Technologies Inc	TDY	n/a	n/a	n/a	6.04	7.00	6.52	n/a

MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.68%
[2] Estimated Weighted Average Long-Term Growth Rate	9.74%
[3] S&P 500 Estimated Required Market Return	11.51%
[4] Risk-Free Rate	4.41%
[5] Implied Market Risk Premium	7.10%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	STANDARD AND POOR'S 500 INDEX						
		[6]	[7]	[8]	[9]	[10]	[11]	[12]
		% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
GE Vernova Inc	GEV	n/a	n/a	n/a	21.00		21.00	n/a
News Corp	NWSA	0.03%	0.75	0.00%	-2.38	13.50	5.56	0.00%
Exelon Corp	EXC	0.12%	3.75	0.00%	4.75		4.75	0.01%
Global Payments Inc	GPN	0.08%	0.98	0.00%	13.45	12.00	12.73	0.01%
Crown Castle Inc	CCI	n/a	5.28	n/a	-6.88	-0.50	-3.69	n/a
Aptiv PLC	APTIV	n/a	n/a	n/a	27.58	28.50	28.04	n/a
Align Technology Inc	ALGN	n/a	n/a	n/a	9.50	17.00	13.25	n/a
Kenvue Inc	KVUE	0.13%	3.55	0.00%	1.05		1.05	0.00%
Targa Resources Corp	TRGP	n/a	2.03	n/a	21.50	20.00	20.75	n/a
Bunge Global SA	BG	n/a	2.81	n/a	-7.20	0.00	-3.60	n/a
Deckers Outdoor Corp	DECK	n/a	n/a	n/a	11.35	17.00	14.18	n/a
LKQ Corp	LKQ	n/a	3.01	n/a	33.50	7.00	20.25	n/a
Zoetis Inc	ZTS	0.26%	0.88	0.00%	9.57	7.50	8.54	0.02%
Digital Realty Trust Inc	DLR	n/a	3.02	n/a	-8.97	-5.00	-6.99	n/a
Equinix Inc	EQIX	0.25%	1.92	0.00%	10.05	15.00	12.53	0.03%
Las Vegas Sands Corp	LVS	0.11%	1.59	0.00%	13.26		13.26	0.01%
Molina Healthcare Inc	MOH	n/a	n/a	n/a	12.31	11.50	11.91	n/a

Notes:

[1] Equals sum of col. [8]

[2] Equals sum of col. [11]

[3] Equals $([1] \times (1 + (0.5 \times [2]))) + [2]$

[4] Source: Bloomberg Professional

[5] Equals [3] - [4]

[6] Equals weight in S&P 500 based on market capitalization

[7] Source: Bloomberg Professional

[8] Equals [6] x [7]

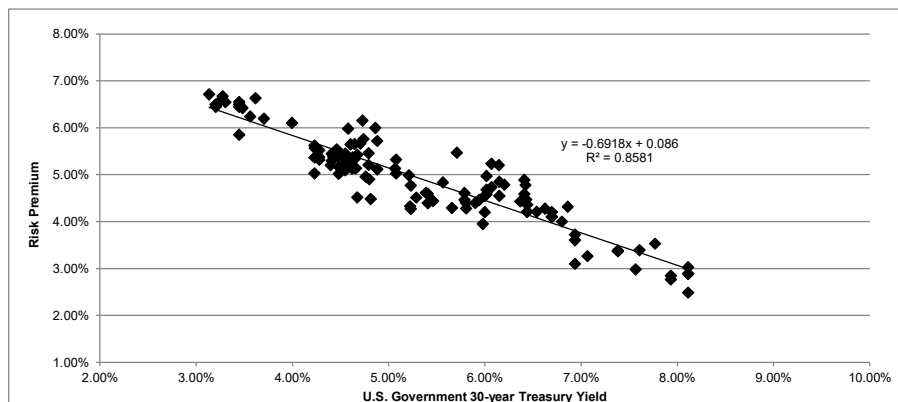
[9] Source: Yahoo Finance

[10] Source: Value Line

[11] Equals average of col. [9] and col. [10]

[12] Equals [6] x [11]

BOND YIELD PLUS RISK PREMIUM ANALYSIS



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.926331749
R Square	0.858090509
Adjusted R Square	0.856946077
Standard Error	0.003559628
Observations	126

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.009500632	0.009500632	749.7963816	2.04988E-54
Residual	124	0.001571198	1.26709E-05		
Total	125	0.01107183			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.086018718	0.001383903	62.15662183	2.57141E-95	0.083279587	0.08875785	0.083279587	0.088757849
X Variable 1	-0.69181208	0.025264835	-27.3824101	2.04988E-54	-0.741818262	-0.6418059	-0.74181826	-0.64180589

	[1]	[2]	[3]
	Moody's	Risk	
	Baa Utility	Premium	ROE
	Yield		
Current 6-month average of Moody's Baa Utility Yield	5.80%	4.59%	10.39%

Notes:

[1] Source: Bloomberg Professional

[2] Equals $0.086019 + (-0.691812 \times \text{Column [6]})$

[3] Equals Column [1] + Column [2]

BOND YIELD PLUS RISK PREMIUM ANALYSIS - FERC ROE DECISIONS

Utility	Docket	[1] Base Authorized ROE	[2] 6-Month Daily Baa Yield Avg	[3] Risk Premium
		ROE	Baa Yield Avg	Risk Premium
Baltimore Gas & Elec.	ER05-515	10.80%	6.07%	4.73%
Baltimore Gas & Elec.	ER05-515	11.30%	6.07%	5.23%
Westar Energy Inc.	ER05-925	10.80%	6.37%	4.43%
San Diego Gas & Elec.	ER07-284	11.35%	6.14%	5.21%
Idaho Power Co.	ER06-787	10.70%	6.15%	4.55%
Wisconsin Elec. Pwr. Co.	ER06-1320	11.00%	6.15%	4.85%
Commonwealth Edison Co.	ER07-583	11.00%	6.41%	4.59%
Duequesne	ER06-1549	10.90%	6.41%	4.49%
Virginia Elec. & Power Co.	ER08-92	10.90%	6.43%	4.47%
Atlantic Path 15	ER08-374	10.65%	6.44%	4.21%
Startrans IO, LLC	ER08-413	10.65%	6.44%	4.21%
Westar Energy Inc.	ER08-396	10.80%	6.44%	4.36%
Pepco Holdings, Inc.	ER08-686	11.30%	6.41%	4.89%
Trans-Allegheny	ER07-562	11.20%	6.42%	4.78%
Arizona Public Service Co.	ER07-1142	10.75%	6.54%	4.21%
Virginia Elec. & Power Co.	ER08-1207	10.90%	6.63%	4.27%
Duquesne Light Co.	ER08-1402	10.90%	6.69%	4.21%
Pepco Holdings, Inc.	ER08-1423	10.80%	6.69%	4.11%
Black Hills Power Co.	ER08-1584	10.80%	6.69%	4.11%
Tallgrass / Prairie Wind	ER09-35/36	10.80%	6.80%	4.00%
Public Service Elec. & Gas	ER09-249	11.18%	6.86%	4.32%
ITC Great Plains	ER09-548	10.66%	6.94%	3.72%
Pioneer Transmission	ER09-75	10.54%	6.94%	3.60%
So. Cal Edison (b)	ER09-187	10.04%	6.94%	3.10%
So. Cal Edison (a)	ER08-375	10.55%	7.57%	2.98%
Baltimore Gas & Elec.	ER09-745	11.30%	7.77%	3.53%
AEP - SPP Zone	ER07-1069	10.70%	7.93%	2.77%
Green Power Express	ER09-681	10.78%	7.93%	2.85%
Oklahoma Gas & Elec.	ER08-281	10.60%	8.11%	2.49%
PPL Elec. Utilities Corp.	ER08-1457	11.00%	8.11%	2.89%
PPL Elec. Utilities Corp.	ER08-1457	11.14%	8.11%	3.03%
Kentucky Utilities Co.	ER08-1588	11.00%	8.11%	2.89%
Niagara Mohawk Pwr. Co.	ER08-552	11.00%	7.61%	3.39%
National Grid Generation LLC	ER09-628	10.75%	7.38%	3.37%
Southwestern Public Service Co.	ER08-313	10.77%	7.38%	3.39%
So. Cal Edison (c)	ER10-160	10.33%	7.07%	3.26%
AEP - PJM Zone	ER08-1329	10.99%	6.20%	4.79%
Kansas City Power & Light Co.	ER10-230	10.60%	6.02%	4.58%
AEP Transcos - PJM	ER10-355	10.99%	6.02%	4.97%
AEP Transcos - SPP	ER10-355	10.70%	6.02%	4.68%
So. Cal Edison	ER11-1952	10.30%	5.90%	4.40%
Atlantic Grid Operations	EL11-13	10.09%	5.81%	4.28%
Duke Energy Carolinas	ER11-2895	10.20%	5.81%	4.39%
Northern Pass Transmission	ER11-2377	10.40%	5.79%	4.61%
PSCo	ER12-2300	10.25%	5.79%	4.46%
Northern States Power Co. (MN)	ER10-1377	10.40%	5.94%	4.46%
Northern States Power Co.	ER10-992	10.20%	6.00%	4.20%
South Carolina Elec. & Gas	ER10-516	10.55%	6.00%	4.55%
RITELine	ER11-4069	9.93%	5.98%	3.95%
PJM & PSE&G	ER12-296	11.18%	5.71%	5.47%
PATH	ER08-386	10.40%	5.56%	4.84%
Entergy Arkansas	ER11-2560	10.20%	5.21%	4.99%
Public Service Co. of Colorado	ER11-2853	10.10%	5.08%	5.02%
Public Service Co. of Colorado	ER11-2853	10.40%	5.08%	5.32%
Cleco Power LLC	ER12-1378	10.50%	4.74%	5.76%
Transource Missouri	ER12-2554	9.80%	4.65%	5.15%
Puget Sound Energy	ER12-778	9.80%	4.65%	5.15%
Puget Sound Energy - PSANI	ER12-778	10.30%	4.65%	5.65%
PacifiCorp	ER11-3643	9.80%	4.62%	5.18%
Maine Public Service Co.	ER12-1650	9.75%	4.62%	5.13%
So. Cal Edison	ER11-3697	9.30%	4.81%	4.49%
San Diego Gas & Electric	ER13-941	9.55%	5.22%	4.33%
Public Service Co. of Colorado	ER12-1589	9.72%	4.76%	4.96%
Duke Energy Ohio	ER12-91	10.88%	4.73%	6.15%
Niagara Mohawk Power Corp.	EL12-101	9.80%	4.66%	5.14%
Public Service Company of New Mexico	ER13-685	10.00%	4.63%	5.37%
MidAmerican Central Calif. Transco	ER14-1661	9.80%	4.58%	5.22%

BOND YIELD PLUS RISK PREMIUM ANALYSIS - FERC ROE DECISIONS

Utility	Docket	[1] Base Authorized ROE	[2] 6-Month Daily Baa Yield Avg	[3] Risk Premium
		ROE	Baa Yield Avg	Risk Premium
American Transmission Systems, Inc.	ER15-303	9.88%	4.58%	5.30%
American Transmission Systems, Inc.	ER15-303	10.56%	4.58%	5.98%
Westar Energy	EL14-93	9.80%	4.58%	5.22%
Duke Energy Florida	EL12-39	10.00%	4.65%	5.35%
Southwestern Public Service Co.	ER14-192	10.00%	4.79%	5.21%
Kentucky Utilities Co.	ER13-2428	10.25%	4.79%	5.46%
XEST Xcel Energy Southwest Trans. Co. (Gen)	ER14-2751	10.20%	5.07%	5.13%
Baltimore G&E / Pepco Holdings, Inc.	EL15-27	10.00%	5.23%	4.77%
New York Transco LLC	ER15-572	9.50%	5.23%	4.27%
Kanstar Transmission, LLC	ER15-2237	9.80%	5.41%	4.39%
Transource West Virginia, LLC	ER15-2114	10.00%	5.41%	4.59%
ATX Southwest, LLC	ER15-1809	9.90%	5.46%	4.44%
Transource Kansas, LLC	ER15-958	9.80%	5.29%	4.51%
NorthWestern Corp.	ER15-2069	9.65%	4.55%	5.10%
NextEra Energy Transmission West	ER15-2239	9.70%	4.41%	5.29%
TransCanyon DCR, LLC	ER15-1682	9.80%	4.55%	5.25%
Northeast Transmission Development	ER16-453	9.85%	4.41%	5.44%
Duke Energy Carolinas	EL16-30	10.00%	4.55%	5.45%
New York Transco, LLC	ER15-572	9.65%	4.48%	5.17%
Rockland Electric Co.	ER17-856	9.50%	4.48%	5.02%
Emera Maine	ER15-1429	9.60%	4.40%	5.20%
Transource Pennsylvania/Maryland, LLC	ER17-419	9.90%	4.52%	5.38%
NextEra Energy Trans. Southwest LLC	ER16-2720	9.80%	4.23%	5.57%
NextEra Energy Trans. MidAtlantic, LLC	ER16-2716	9.60%	4.28%	5.32%
Mid-Atlantic Interstate Transmission	ER17-211	9.80%	4.42%	5.38%
GridLiance West Transco LLC	ER17-706	9.60%	4.23%	5.37%
NextEra Energy Trans. New York LLC	ER16-2719	9.65%	4.28%	5.37%
DesertLink, LLC	ER17-135	9.80%	4.28%	5.52%
AEP East Cos.	EL17-13	9.85%	4.23%	5.62%
Alabama Power Co.	ER19-1427	10.60%	4.88%	5.72%
AEP West Cos	ER19-1396	10.00%	4.88%	5.12%
Southwestern Electric Power Co	ER18-1225	10.10%	4.67%	5.43%
Gulf Power Co.	ER18-1953	10.25%	4.60%	5.65%
Oklahoma G&E	EL18-58	10.00%	4.88%	5.12%
Southern California Edison	ER18-169-002	9.70%	4.80%	4.90%
PECO	ER17-1519	9.85%	4.47%	5.38%
San Diego Gas & Electric	ER19-221	10.10%	4.00%	6.10%
Cheyenne Light, Fuel & Power	ER19-697-001	9.90%	3.70%	6.20%
Southern California Edison	ER19-1553	9.80%	3.56%	6.24%
Pacific Gas & Electric Co.	ER19-13	9.95%	3.27%	6.68%
NorthWestern Corp.	ER19-1756	9.65%	3.20%	6.45%
Dayton Power & Light Co.	ER20-1150	9.85%	3.13%	6.72%
Jersey Central Power & Light Co.	ER20-227	9.70%	3.20%	6.50%
Duke Energy Progress	ER21-1319	9.85%	3.30%	6.55%
Public Service Elec. & Gas Co.	ER21-2450	9.90%	3.48%	6.42%
TransCanyon Western Development, LLC	ER21-1065	9.90%	3.45%	6.45%
Morongo Transmission LLC	ER21-669	9.30%	3.45%	5.85%
PPL Elec. Utilities Corp.	EL20-48	9.90%	3.45%	6.45%
PPL Elec. Utilities Corp.	EL20-48	9.95%	3.45%	6.50%
PPL Elec. Utilities Corp.	EL20-48	10.00%	3.45%	6.55%
Tucson Electric Power Co.	ER19-2019	9.79%	3.24%	6.55%
Pacific Gas & Electric Co.	ER20-2878	10.25%	3.62%	6.63%
Duke Energy Progress	ER22-2125	10.00%	4.46%	5.54%
Entergy Arkansas	ER13-1508	10.37%	4.71%	5.66%
Constellation Mystic Power	ER18-1639-010	9.19%	4.67%	4.52%
DATC Path 15	ER17-998	10.86%	4.86%	6.00%
Pacific Gas & Electric Co.	ER16-2320	9.26%	4.23%	5.03%
Portland General Electric Co.	ER22-233	10.00%	5.39%	4.61%
South FirstEnergy Operating Cos.	ER21-253	9.95%	5.66%	4.29%

Notes:

[1] Source: Westlaw

[2] Source: Bloomberg Professional, bond yields are the average of each trading day in the year

[3] Equals Column [1] – Column [2]

SUMMARY RESULTS

Model	Lower Bound	Median	Upper Bound
DCF	7.35%	10.21%	11.60%
CAPM	10.38%	11.75%	13.03%
Measure of Central Tendency Base ROE		10.98%	
Upper / Lower Bounds	8.87%		12.32%

Model	Lower Bound	Median	Upper Bound
DCF	7.35%	10.21%	11.60%
CAPM	10.38%	11.75%	13.03%
Risk Premium	8.66%	10.39%	12.11%
Measure of Central Tendency Base ROE		10.78%	
Upper / Lower Bounds	8.80%		12.25%