BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

DIRECT TESTIMONY OF

ANN E. BULKLEY

ON BEHALF OF EVERGY METRO, INC., EVERGY KANSAS CENTRAL, INC. AND EVERGY KANSAS SOUTH, INC.

IN THE MATTER OF THE APPLICATION OF EVERGY KANSAS METRO, INC., EVERGY KANSAS SOUTH, INC. AND EKC, INC. TO MAKE CERTAIN CHANGES IN THEIR CHARGES FOR ELECTRIC SERVICE PURSUANT TO K.S.A. 66-117.

Docket No. 23-EKCE-775-RTS

April 25, 2023

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I. INTRODUCTION AND QUALIFICATIONS

Q: Please state your name, by whom you are employed, and your business address.

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

Q: On whose behalf are you submitting this testimony?

A: I am submitting this direct testimony before the State Corporation Commission of the State of Kansas ("Commission") on behalf of Evergy Kansas Central, Inc., Evergy Kansas South, Inc., and Evergy Metro, Inc., wholly-owned subsidiaries of Evergy, Inc. Evergy Kansas Central, Inc. and Evergy Kansas South, Inc., are referred to collectively herein as "EKC", and Evergy Metro, Inc.'s Kansas operations are referred to herein as Evergy Kansas Metro ("EKM"). I will refer to EKM and EKC collectively as "the Companies".

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

A. I hold a Bachelor's degree in Economics and Finance from Simmons College and a Master's degree in Economics from Boston University, with more than 25 years of experience consulting to the energy industry. I have provided testimony regarding financial matters, including the cost of capital, 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. A summary of my professional background and a listing of the testimony that I have filed in other proceedings is presented in **Attachment A.**

II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY

Q: What is the purpose of your direct testimony?

A: The purpose of my direct testimony is to present evidence and provide an opinion regarding the reasonableness of the Companies' requested return on equity ("ROE") for the Companies' electric utility operations in Kansas and to provide an assessment of the proposed capital structure to be used for ratemaking purposes.

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

A: Yes. My analyses and recommendations are supported by the data presented in **Exhibits AEB-1 through AEB-14**, which have been prepared by me or under my direction.

Q: Please provide a brief overview of the analyses that led to your ROE recommendation.

A: I have estimated the Companies' cost of equity by applying several traditional estimation methodologies to a proxy group of comparable utilities, including the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and the Risk Premium approach. My recommendation also takes into consideration: (1) the regulatory environment in which the Companies operate; (2) the Companies' capital expenditure requirements; and (3) the Companies' planned investments in renewable generation assets compared to its current generation portfolio. Finally, I consider the Companies' proposed capital structure as compared to the capital structures of the proxy companies. While I did not make any specific adjustments to my cost of equity estimates for any of these factors, I did consider them in the aggregate when determining the reasonableness of where the Companies' requested ROE falls within the range of the analytical results.

Q: How is the remainder of your direct testimony organized?

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

- Section III provides a summary of my analyses and conclusions.
- Section IV reviews the regulatory principles pertinent to the development of the cost of capital.
- Section V discusses current and projected capital market conditions and the effect of those conditions on the Companies' cost of equity.
- Section VI summarizes recently authorized ROEs in other jurisdictions.
- Section VII explains my selection of proxy group of electric utilities.
- Section VIII describes my analyses and the analytical basis for my recommendation of the appropriate ROE for the Companies.
- Section IX provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for the Companies in this case.
- Section X discusses the capital structure of the Companies as compared with the proxy group.
- Section XI presents my conclusions and recommendations for the market cost of equity.

III. SUMMARY OF ANALYSIS AND CONCLUSIONS

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

A: My analyses and recommendations considered the following:

- The United States Supreme Court's *Hope* and *Bluefield* decisions[1] established the standards for determining a fair and reasonable authorized ROE for public utilities, including consistency of the allowed return with the returns of other businesses having similar risk, adequacy of the return to provide access to capital and support credit quality, and the requirement that the result lead to just and reasonable rates.
- The effect of current and projected capital market conditions on investors' return requirements.
- The results of several analytical approaches that provide estimates of the Companies' cost of equity. Because the Companies' required ROE should be a forward-looking estimate over the period during which the rates will be in effect, these analyses rely on forward-looking inputs and assumptions (*e.g.*, projected analyst growth rates in the DCF model, forecasted risk-free rate and market risk premium in the CAPM analysis).
- Although the proxy group companies are generally comparable to EKC and EKM, each company is unique, and no two companies have the exact same business and financial risk profiles. Accordingly, I considered the Companies' regulatory, business, and financial risks relative to the proxy group in determining where the

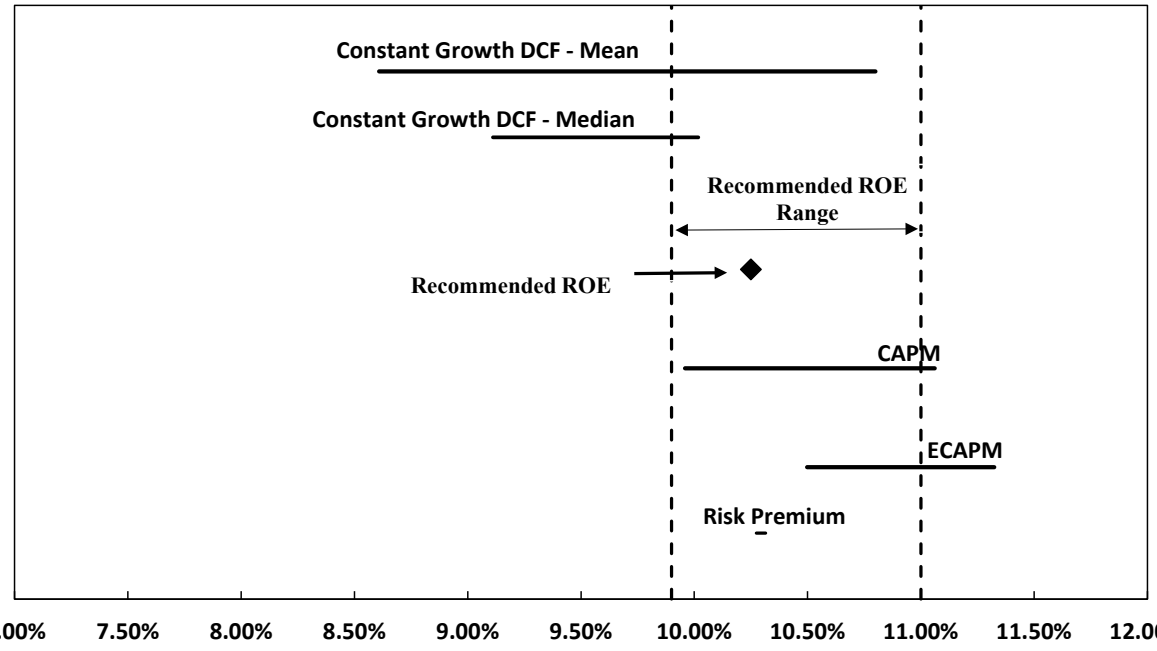
[1] *Federal Power Commission v. Hope Natural Gas Co*., 320 U.S. 591 (1944) ("*Hope*"); *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) ("*Bluefield*").

Companies' ROE should fall within the reasonable range of analytical results to appropriately account for any residual differences in risk.

Q: What are the results of the models that you have used to estimate the cost of equity for the Companies?

A: Figure 1 summarizes the range of results produced by the DCF, CAPM, ECAPM and Risk Premium analyses based on data through to the end of March 2023.

Figure 1: Summary of Cost of Equity Analytical Results



As shown in Figure 1, (and in **Exhibit AEB-1**), the range of results produced by the COE estimation models is wide. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results varies considerably across methodologies.

Q: How are prospective capital market conditions expected to affect the results of the cost of equity for the Companies during the period in which the rates established in this proceeding will be in effect?

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

- Inflation is expected to persist over the near-term, which increases the operating risk of the utility during the period in which rates will be in effect.
- Long-term interest rates have increased substantially in the past year and are expected to remain relatively high at least over the next year in response to inflation.
- Since utility dividend yields are now less attractive than the risk-free rates of government bonds, and interest rates are expected to remain near current levels over the next year, and since utility stock prices are inversely related to changes in interest rates, it is likely that utility share prices will decline.
- Rating agencies have responded to the risks of the utility sector, with Moody's Investors Service ("Moody's") most recently indicating its outlook for the industry in 2023 is "negative", citing increasing interest rates, inflation and high natural gas prices, all of which create pressure for customer affordability and prompt rate recovery.
- Similarly, equity analysts have noted the increased risk for the utility sector as a result of rising interest rates and expect the sector to underperform over the near-term.

- Consequently, the results of the DCF model, which relies on current utility share prices, is likely to understate the cost of equity during the period that the Companies rates will be in effect.

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

Q: What is your conclusion regarding the appropriate authorized ROE for the Companies in this proceeding?

A: Considering the analytical results presented in Figure 1, current and prospective capital market conditions, as well as the level of regulatory, business, and financial risk faced by the Companies' electric operations in Kansas relative to the proxy group, I believe a range of returns from 9.90 to 11.00 percent is reasonable. Within that range, the Companies are requesting a return of 10.25 percent, which is reasonable, if not conservative.

Q: Is the Companies' requested capital structure reasonable and appropriate?

A: The Companies' proposed equity ratios of 52.00 percent for EKM and 52.0376 percent for EKC are within the range of equity ratios for the proxy group, and generally at the average equity ratio for the group. Further, the Companies' proposed equity ratio is reasonable considering that credit rating agencies have identified the outlook for the utility sector as "negative" due to the negative effect on the cash flows and credit metrics associated with increasing interest rates, inflation and commodity costs, and the pressure that those factors place on customer affordability and utilities' prompt rate recovery.

IV. REGULATORY PRINCIPLES

Q: Please describe the guiding principles to be used in establishing the cost of capital for a regulatory utility.

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

Q: Has the Commission provided similar guidance in establishing the appropriate ROE?

A: Yes, it has. In Docket No. 15-WSEE-115-RTS for Westar Energy, Inc. and Kansas Gas and Electric Company, the Commission recognized the Supreme Court's authority in *Hope* and *Bluefield* regarding a "fair rate of return":

> In addition to Kansas' own statutes and case law on the subject, the U.S. Supreme Court has established certain principles for the Commission to follow when reviewing rate change applications. Bluefield Waterworks & Imp. Co. v. Pub. Serv. Comm 'n of W Va., 262 U.S. 679 (1923), and Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944), provide what this Commission has referred to as the "capital attraction standard." …These standards taken together stand for the general idea that the return provided to a utility's investors should (1) be consistent with other businesses having similar risks and

[2] *Bluefield*, 262 U.S. at 692-93; *Hope*, 320 U.S. at 603.

(2) the adequacy of the return for servicing debt and paying dividends be able to support a utility's credit quality, access to capital, and financial integrity.[3]

This guidance is consistent with the principle that an allowed rate of return must be sufficient to enable regulated entities, such as the Companies, to attract capital on reasonable terms.

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

A: No. As the court noted in *Bluefield*, a proper rate of return not only assures "confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit [but also] enable[s the utility] to raise the money necessary for the proper discharge of its public duties."[4] As the Court went on to explain in *Hope*, "[t]he rate-making process … involves balancing of the investor and consumer interests."[5]

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

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

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[3] Kansas Corporation Commission, Docket No. 15-WSEE-115-RTS, Order, September 24, 2015, at 25-26.

[4] *Bluefield*, 262 U.S. at 679, 693.

[5] *Hope*, 320 U.S. at 591, 603.

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

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

Q: Is the regulatory framework, including the authorized ROE and equity ratio, important to the financial community?

A: Yes. The regulatory framework is one of the most important factors in debt and equity investors' assessments of risk. Specifically, regarding debt investors, credit rating agencies consider the authorized ROE and equity ratio for regulated utilities to be very important for two reasons: (1) they help determine the cash flows and credit metrics of the regulated utility; and (2) they provide an indication of the degree of regulatory support for credit quality in the jurisdiction. To the extent that the authorized returns in a jurisdiction are lower than the returns that have been authorized more broadly, credit rating agencies will consider this in the overall risk assessment of the regulatory jurisdiction in which the company operates. Not only do credit ratings affect the overall cost of borrowing they also act as a signal to equity investors about the risk of investing in the equity of a company.

Q. What are your conclusions regarding the regulatory principles to be used in establishing the cost of capital in this proceeding?

A: The ratemaking process is premised on the principle that, in order for investors and companies to commit the capital needed to provide safe and reliable utility services, a utility must have a reasonable opportunity to recover the return of, and the market-required return on, its invested capital. Accordingly, the Commission's order in this proceeding should establish rates that provide the Companies with a reasonable opportunity to earn a ROE that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure its financial integrity; and (3) commensurate with returns on investments in enterprises with similar risk. It is important for the ROE authorized in this proceeding to take into consideration current and projected capital market conditions, as well as investors' expectations and requirements for both risks and returns. Because utility operations are capital-intensive, regulatory decisions should enable the utility to attract capital at reasonable terms under a variety of economic and financial market conditions. Providing the opportunity to earn a market-based cost of capital supports the financial integrity of the Companies, which is in the interest of both customers and shareholders.

V. CAPITAL MARKET CONDITIONS

Q: Why is it important to analyze capital market conditions?

A: The models used to estimate the cost of equity rely on market data that are either specific to the proxy group, in the case of the DCF model, or to the expectations of market risk, in the case of the CAPM. The results of the cost of equity estimation models can be affected by prevailing market conditions at the time the analysis is performed. While the ROE established in a rate proceeding is intended to be forward-looking, the analyst uses current

and projected market data, specifically stock prices, dividends, growth rates and interest rates, in the cost of equity estimation models to estimate the investor-required return for the subject company.

As a result, it is important to consider the effect of the market conditions on these models when determining an appropriate range for the ROE and the recommended ROE for ratemaking purposes for a future period. If investors do not expect current market conditions to be sustained in the future, it is possible that the cost of equity estimation models will not provide an accurate estimate of investors' required return during that rate period. Therefore, it is very important to consider projected market data to estimate the return for that forward-looking period.

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

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

Q: What effect do current and prospective market conditions have on the cost of equity for the Companies?

A: As is discussed in more detail in the remainder of this section, the combination of persistently high inflation and the Federal Reserve's changes in monetary policy contribute to an expectation of increased market risk and an increase in the cost of the investor-required return. It is essential that these factors be considered in setting the forward-

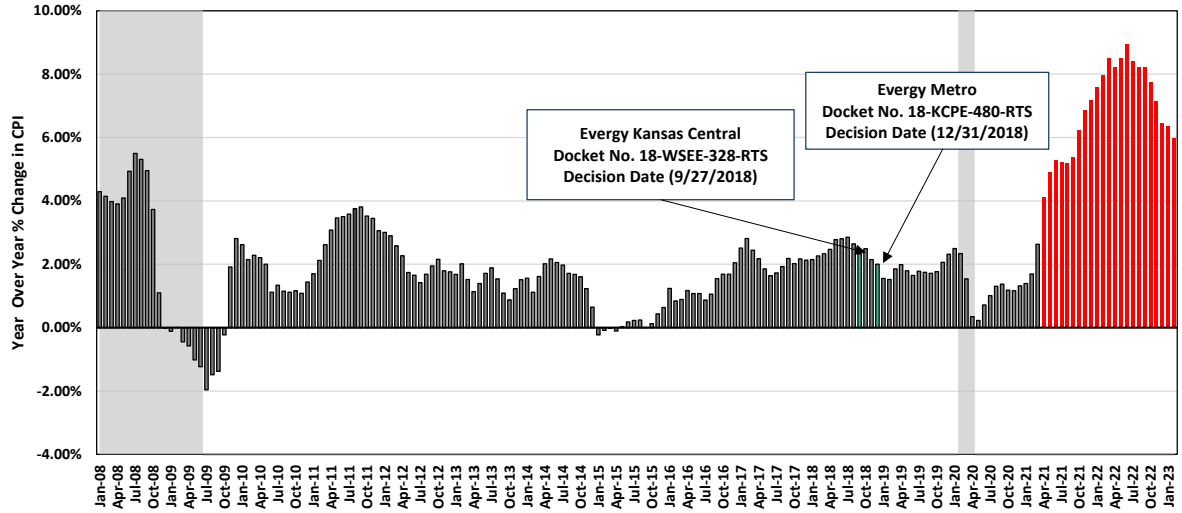
looking ROE. Inflation has recently been at some of the highest levels seen in approximately 40 years, and while inflation has declined from these recent peaks, it remains relatively high. Interest rates, which have increased significantly from pandemic-related lows seen in 2020, are expected to continue to remain relatively high in direct response to the Federal Reserve's use of monetary policy to combat inflation. Since there is a strong historical inverse correlation between interest rates and the share prices of utility stocks (*i.e.,* share prices of utility stocks typically fall when interest rates rise), it is reasonable to expect that investors' required return for utility companies will also increase. Therefore, cost of equity estimates based solely on current market conditions will understate the cost of equity required by investors during the future period that the Companies' rates determined in this proceeding will be in effect.

A. Inflationary Expectations in Current and Projected Capital Market Conditions

Q: Has inflation increased significantly over the past year?

A: Yes. As shown in Figure 2, the year-over-year ("YOY") change in the Consumer Price Index ("CPI") published by the Bureau of Labor Statistics has increased steadily since the beginning of 2021, rising from 1.37 percent in January 2021 to a high of 9.0 percent in June 2022, which was the largest 12-month increase since 1981 and significantly greater than any level seen since January 2008. As shown in Figure 2, since that time, while inflation has declined in response to the Federal Reserve's monetary policy, inflation continues to remain elevated.

Figure 2: YOY Percent Change in the Consumer Price Index, January 2008 – February 2023[6]



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

A: The Federal Reserve has indicated that it expects inflation will remain elevated above its target level over at least the next year and that it will continue to increase short-term interest rates to reduce inflation. For example, Federal Reserve Chair Powell at the Federal Open Market Committee ("FOMC") meeting in February 2023 anticipated further increases in the federal funds rate, and observed that while inflation is off of its recent highs, it remains significantly above the Federal Reserve's long-term target:

> We continue to anticipate that ongoing increases will be appropriate in order to attain a stance of monetary policy that is sufficiently restrictive to return inflation to 2 percent over time.
>
> …..
>
> Inflation remains well above our longer-run goal of 2 percent. Over the 12 months ending in December, total PCE prices rose 5.0 percent; excluding the volatile food and energy categories, core PCE prices rose 4.4 percent. The inflation data received over the past three months show a welcome reduction in the monthly pace of increases. And while recent developments are encouraging, we will need substantially more evidence to be confident that inflation is on a sustained downward path.
>
> …..

[6] Bureau of Labor Statistics, shaded area indicates a recession.

> With today's action, we have raised interest rates by 4-1/2 percentage points over the past year. We continue to anticipate that ongoing increases in the target range for the federal funds rate will be appropriate in order to attain a stance of monetary policy that is sufficiently restrictive to return inflation to 2 percent over time.
>
> …..
>
> At the December meeting, we all wrote down our best estimates of what we thought the ultimate level would be [of the federal funds rate], and that's obviously back in December. And the median for that was between five and five and a quarter percent. At the March meeting, we're going to update those assessments. We did not update them today. We did, however, continue to say that we believe ongoing rate hikes will be appropriate to attain a sufficiently restrictive stance of policy to bring inflation back down to 2 percent. We think we've covered a lot of ground, and financial conditions have certainly tightened. I would say we still think there's work to do there. We haven't made a decision on exactly where that will be. I think, you know, we're going to be looking carefully at the incoming data between now and the March meeting and then the May meeting. I don't feel a lot of certainty about where that will be. It could certainly be higher than we're writing down right now. If we come to the view that we need to write down to -- you know, to move rates up beyond what we said in December we would certainly do that. At the same time, if the data come in, in the other direction then we'll -- you know, we'll make data-dependent decisions at coming meetings, of course.[7]

B. <u>The Use of Monetary Policy to Address Inflation</u>

Q: What policy actions has the Federal Reserve enacted to respond to increased inflation?

A: The dramatic increase in inflation has prompted the Federal Reserve to pursue an aggressive normalization of monetary policy, removing the accommodative policy programs used to mitigate the economic effects of COVID-19. As of the FOMC meeting on February 1, 2023, the Federal Reserve has taken the following actions:

- Completed its taper of Treasury bond and mortgage-backed securities purchases;[8]

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[7] Transcript, Chair Powell Press Conference, February 1, 2023; clarification added.

[8] Federal Reserve Bank of New York, https://www.newyorkfed.org/markets/domestic-market-operations/monetary-policy-implementation/treasury-securities/treasury-securities-operational-details#monthly-details.

- Increased the target federal funds rate beginning in March 2022 through a series of increases from a target range of 0.00 to 0.25 percent to a target range of 4.50 percent to 4.75 percent;[9]
- Anticipates ongoing increases in the target range will be appropriate to achieve its goals of maximum employment at the inflation rate of 2.00 percent over the long-run;[10]
- Began reducing its holdings of Treasury and mortgage-backed securities on June 1, 2022.[11] The Federal Reserve is reducing the size of its balance sheet by only reinvesting principal payments on owned securities after the total amount of payments received exceeds a defined cap. For Treasury securities, the cap is set at $30 billion per month for the first three months and $60 billion per month after the first three months. The cap for mortgage-backed securities is set at $17.5 billion per month for the first three months and $35 billion per month thereafter.[12]

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

Q: What effect will inflation and the Federal Reserve's normalization of monetary policy have on long-term interest rates?

A: Inflation and the Federal Reserve's normalization of monetary policy are expected to result in long-term interest rates remaining relatively high over at least the next year.

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[9] Federal Reserve. Press Releases, March 16, 2022; Transcript. Chair Powell Press Conference, February 1, 2023.

[10] Transcript. Chair Powell Press Conference, February 1, 2023.

[11] Federal Reserve. Press Release, May 4, 2022.

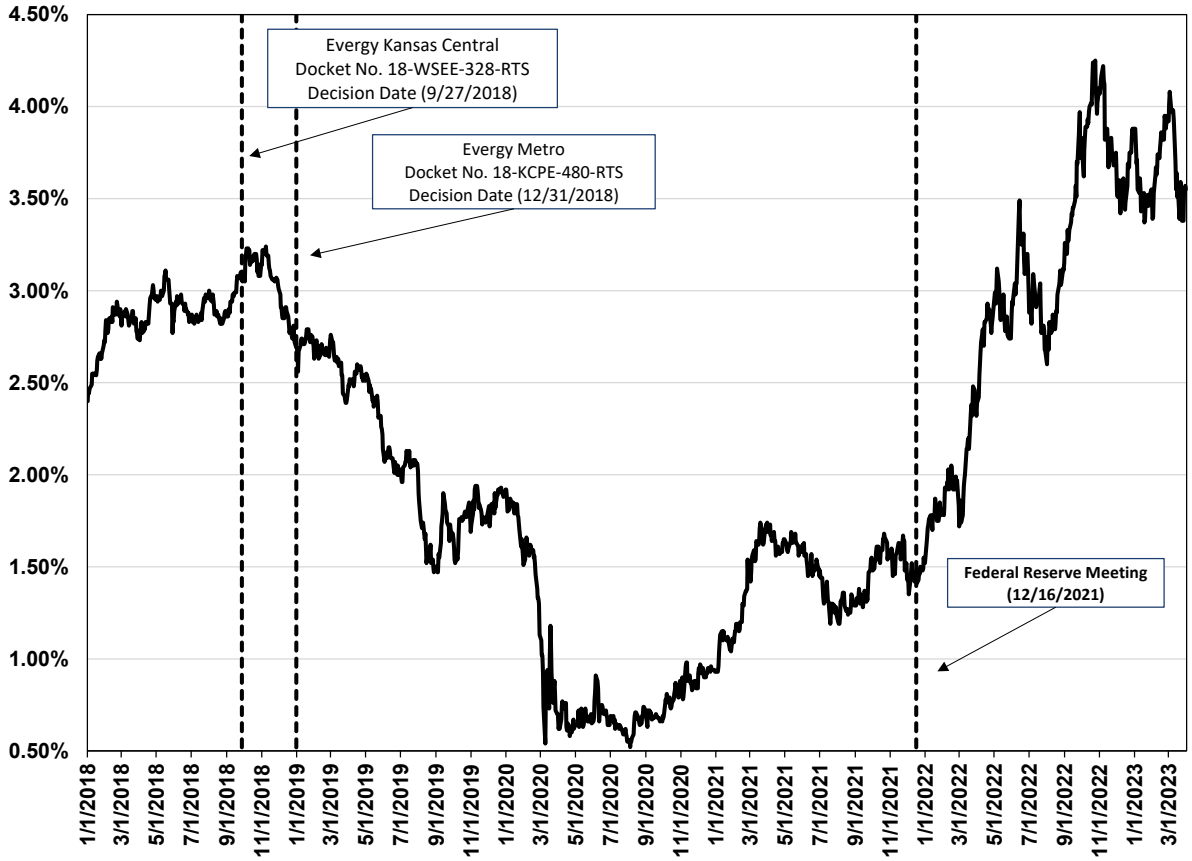
[12] Federal Reserve. "Plans for Reducing the Size of the Federal Reserve's Balance Sheet." Press Release, May 4, 2022.

Specifically, inflation reduces the purchasing power of the future interest payments an investor expects to receive over the duration of the bond. This risk increases the longer the duration of the bond. As a result, if investors expect inflation to remain relatively high, they will require higher yields to compensate for the increased risk of inflation, which means interest rates will also remain relatively high.

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

A: Yes. At the FOMC meetings throughout 2022 and thus far into 2023, the Federal Reserve has continued to note its concerns over the sustained increased levels of inflation and has continued to accelerate the process of normalizing monetary policy to combat inflation. As shown in Figure 3, since the Federal Reserve's December 2021 meeting, the yield on 10-year Treasury bond has more than doubled, increasing from 1.47 percent on December 15, 2021, to 3.48 percent on March 31, 2023. The increase is due to the Federal Reserve's announcements at each of the meetings since December 2021 and the continued elevated levels of inflation.

Figure 3: 10-Year Treasury Bond Yield, February 2018 through March 2023[13]



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

A: Leading equity analysts have noted that they expect the yields on long-term government bonds to remain elevated through at least the end of 2023. According to the most recent *Blue Chip Financial Forecasts* report, the consensus estimate of the average yield on the 10-year Treasury bond is approximately 3.50 percent through the first quarter of 2024.[14]

[13] S&P Capital IQ Pro.

[14] *Blue Chip Financial Forecasts*, Vol. 42, No. 4, March 31, 2023.

Q: Do recent changes in Gross Domestic Product ("GDP") affect the current outlook for inflation and interest rates?

A: No. While FOMC participants have recently reduced their projections for economic activity for real GDP growth to 0.5 percent in 2023,[15] which is well below the median estimate for the longer-run normal GDP growth rate, the Fed has highlighted that the labor market continues to be extremely tight, and in fact, the unemployment rate reached 3.4 percent in January 2023, the lowest it has been in over 50 years.[16] Therefore, with a tight labor market and persistently high inflation, the Fed has indicated its need to continue a restrictive monetary policy to moderate demand to better align it with supply.[17]

Q: How have market conditions changed since the last rate cases for the Companies?

A: As shown in Figure 4 when the Commission authorized an ROE of 9.30 percent in EKC's and EKM's 2018 rate proceedings, interest rates (as measured by the 30-year Treasury bond yield) were in the range of 3.09 percent to 3.18 percent and inflation was in the range of 1.92 percent to 2.36 percent. Further, the average beta for the proxy group companies was 0.59, which was substantially below the historical average. However, since those last rate proceedings of the Companies, long-term interest rates have increased over 60 basis points, and as discussed, inflation is also substantially higher. The proxy group average beta has also increased to 0.87, which is above the ten-year historical average of 0.74.

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[15] FOMC. Summary of Economic Projections. December 14, 2022.

[16] Mutikani, Lucia. "U.S. reports blowout job growth; unemployment lowest since 1969." Reuters, February 3, 2023.

[17] Transcript. Chair Powell, Press Conference, February 1, 2023.

Figure 4: Change in Market Conditions Since the Last Rate Cases of EKM and EKC[18]

Docket	Decision Date	Target Federal Funds Rate	30-Day Average Of 30-Year Treasury Bond Yield	Inflation Rate	Proxy Group Beta	Authorized ROE
18-WSEE-328-RTS (EK)	9/27/2018	2.00%-2.50%%	3.09%	2.36%	0.59	9.30%
18-KCPE-480-RTS (EM)	12/31/2018	2.25%-2.50%	3.18%	1.92%	0.59	9.30%
Current	3/31/2023	4.75%-5.00%%	3.81%	5.99%	0.87	

D. Expected Performance of Utility Stocks and the Investor-Required Return on Utility Investments

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

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

[18] St. Louis Federal Reserve Bank; Bureau of Labor Statistics.

with bond yields (*i.e.*, increases in bond yields resulted in the decline of utility share prices).[19]

Q: How do equity analysts expect the utilities sector to perform in an increasing interest rate environment?

A. Equity analysts project that utilities will underperform the broader market given high inflation and the recent increases in interest rates. Fidelity classifies the utility sector as underweight,[20] and Keybanc Capital Markets analyst Sophie Karp recently noted she had a negative view of the sector in 2023 and expects a decline in the relative valuation of the utilities sector as compared to the S&P 500:

> The utility sector's relative outperformance came on the back of the pre-recessionary environment in the U.S. in 2022, analyst Karp said. She noted that the sector now traded at a 2.8 times premium to the S&P 500 Index, which is relatively wide by historical standards.
>
> *She said the utility sector is relatively overvalued and will see a mean reversion in 2023*, adding that the last time such a premium over the S&P 500 Index happened was in 2004.
>
> *"We are therefore negative on the sector overall going into 2023 and our OW picks grow fewer*," Karp said,
>
> *There has been a surprising deterioration of the regulatory environment across multiple jurisdictions, including the historically stronger ones*, she noted. Some regulatory developments, according to the analyst, are driven by the regulator's desire to moderate the impact on customer bills. "Given that power and commodity prices remain elevated, we expect to continue seeing regulators getting 'creative' with assumptions and rate mechanisms to achieve that goal," she added.
>
> Karp said she would focus on rate affordability, as inflationary pressures will likely be a factor for the foreseeable future.

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[19] Lee, Justina. "Wall Street Is Rethinking the Treasury Threat to Big Tech Stocks." Bloomberg.com, March 11, 2021.

[20] Fidelity. "First Quarter 2023 Investment Research Update." February 8, 2023.

> "As we turn to 2023, we believe that the sector will find it difficult to defend this relative valuation position, particularly as macro headwinds persist and begin to take a toll on utility earnings," she added.[21]

Additionally, *The Wall Street Journal* recently attributed the 14 percent decline in the S&P Utilities Index between September and October 2022 to the recent increase in long-term treasury yields:

> A big draw of utility stocks has become less attractive as interest rates have climbed. Utility stocks are known for their sizable dividends, offering investors a regular stream of income. Companies in the S&P 500 utilities sector offer a dividend yield of 3.3%, among the highest payout percentages in the index, according to FactSet.
>
> But the outsize dividends of utility stocks are no match for climbing bond yields. The yield on the benchmark 10-year Treasury note finished above 4% on Monday for a second consecutive session. Friday marked the 10-year yield's first close above the 4% level since 2008 and 11 straight weeks of gains. Treasurys are viewed as essentially risk-free if held to maturity.
>
> "The 10-year is repricing everything. I've got something that's even safer and yields even more," said Kevin Barry, chief investment officer at Summit Financial, comparing Treasurys and utility stocks.[22]

Similarly, Barron's recently noted that the decline in share prices can be attributed to the relatively high valuations and low dividend yields of utilities as compared to other asset classes such as Treasuries.[23] According to Barron's, even after the recent decline in share prices, the Utilities Select ETF was yielding 2.85 percent, which is a yield that will not "lure in buyers when the ultrasafe 10-year Treasury note yields close to 4%."[24] Therefore, Barron's currently recommends not buying utility stocks.

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[21] Market Insider. "After A 'Good Run' For Utilities In 2022, Analyst Says 'Trade Is Over – For Now,' But Retains Bullish Bias On These Stocks", January 17, 2023.

[22] Miao, Hannah. "Utility Stock stumble as treasury yields climb." *The Wall Street Journal*, October 18, 2022.

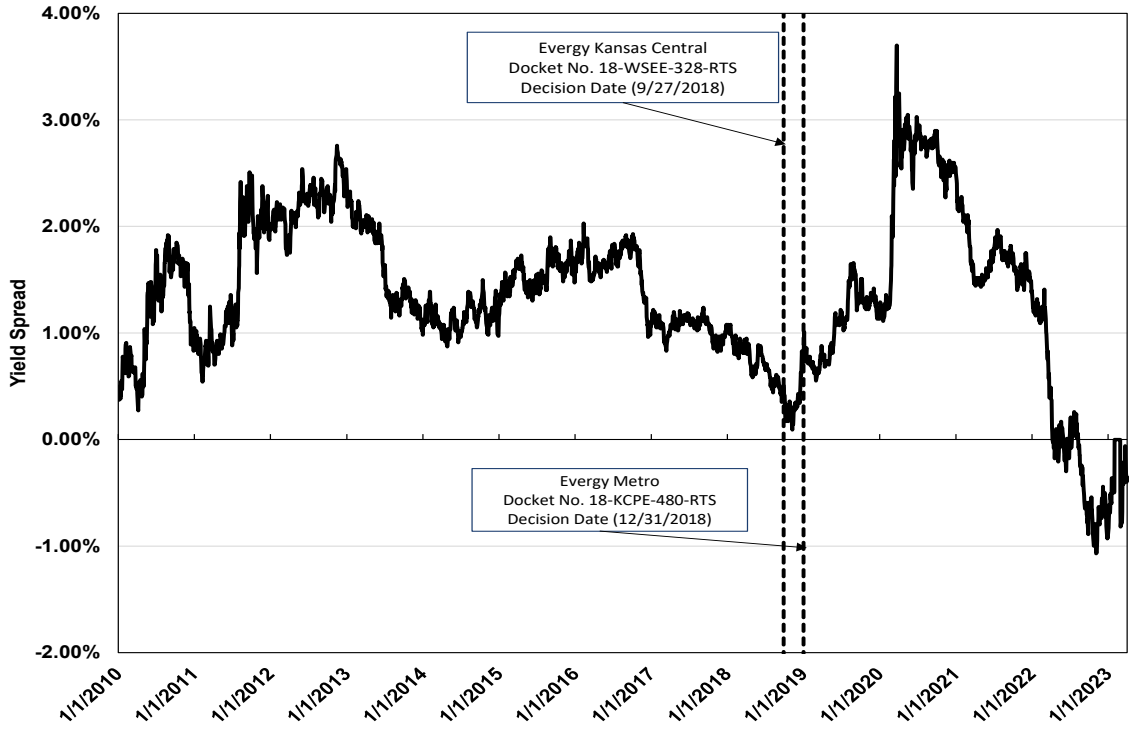
[23] Sonenshine, Jacob. "Utilities Stocks Have Fallen off a Cliff. They Just Got Downgraded, Too." Barron's, October 17, 2022.

[24] *Id*.

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

A: While interest rates have increased substantially over the past year, the valuations of utilities have remained elevated and have not fully reflected the effect of the recent increase in interest rates. To illustrate this point, I examined the difference between the dividend yields of utility stocks and the yields on long-term government bonds (*i.e.*, the "yield spread"). I selected the dividend yield on the S&P Utilities Index as the measure of the dividend yields for the utility sector and the yield on the 10-year Treasury bond as the estimate of the yield on long-term government bonds. As shown in Figure 5, the yield spread as of January 31, 2023 was negative 0.49 percent, meaning that the yield on the 10-year Treasury bond exceeds the dividend yield for the S&P Utilities Index. Furthermore, the current negative yield spread is well below the long-term average yield spread since 2010 of 1.34 percent. Given that the yield spread is currently well below the long-term average, as well as the expectation that interest rates will remain relatively high through at least through the next year, it is reasonable to conclude that the utility sector will most likely underperform over the near-term. This is because investors that purchased utility stocks as an alternative to the lower yields on long-term government bonds would otherwise be inclined to rotate back into government bonds, particularly as the yields on long-term government bonds remain elevated, thus resulting in a decrease in the share prices of utilities.

Figure 5: Spread between the S&P Utilities Index Dividend Yield and the 10-year Treasury bond Yield, January 2010 – March 2023[25]



Q. What is the significance of the inverse relationship between interest rates and utility share prices in the current market?

A.: If interest rates remain relatively high as expected, then the share prices of utilities, which have been strong in 2022 relative to the market, would be expected to decline. If the prices of utility stocks decline, then the DCF model, which relies on historical averages of share prices to calculate the dividend yield, is likely to understate the dividend yield and thus the cost of equity.

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

E. Conclusion

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

A: Through 2023, investors expect long-term interest rates to remain relatively high in response to continued elevated levels of inflation and the Federal Reserve's normalization of monetary policy. Because the share prices of utilities are inversely correlated to interest rates, and government bond yields are already substantially greater than utility stock dividend yields, the share prices of utilities will likely decline, which is the reason a number of equity analysts have classified the utility sector as either underperform or underweight. The expected underperformance of utilities means that DCF models using recent historical data likely underestimate investors' required return over the period that rates will be in effect. Therefore, this expected change in market conditions supports consideration of the higher end of the range of cost of equity results produced by the DCF models. Moreover, prospective market conditions warrant consideration of forward-looking cost of equity estimation models such as the CAPM and ECAPM, which may better reflect expected market conditions.

VI. RECENTLY AUTHORIZED ROEs

Q: Have recently authorized ROEs been considered as an important data point in setting the ROE in rate proceedings in Kansas?

A: Yes. In the Evergy Companies' 2018 rate proceeding Staff considered the results from major rate case decisions for the six-month period prior to the preparation of his direct testimony.

Q: Are recent authorized ROEs a useful indicator of investor expectations?

A: Yes, but it is important to consider the ROE and the relative market conditions at the time that the decision was in place. As discussed in section V of my Direct Testimony, interest rates increased significantly throughout 2022, affecting the cost of equity. Therefore, while it is reasonable to use recently authorized ROEs over a very recent historical period, that is consistent with current market conditions, it would not be appropriate to review historical ROEs that were authorized under different market conditions.

Q: Have you conducted such an analysis?

Yes. Figure 6 below summarizes the recently authorized ROEs in fully litigated vertically integrated electric utility rate proceedings in the fourth quarter of 2022 and the first quarter of 2023. As shown in this figure, the average authorized ROE for the fourth quarter of 2022 was 9.87 percent and the average as of the first quarter of 2023 was 9.72 percent.

Figure 6: Recently Authorized ROEs for Vertically Integrated Electric Utilities

Company	*Parent Company Ticker*	*Docket*	*Date*	*Return on Equity (%)*
Kingsport Power Company	AEP	D-21-00107	10/25/2022	10.00%
Pacific Gas and Electric Co.	PCG	A-21-08-015	11/3/2022	10.25%
Southern California Edison Co.	EIX	A-21-08-013	11/3/2022	10.30%
San Diego Gas & Electric Co.	SRE	A-21-08-014 (Elec)	11/3/2022	10.20%
DTE Electric Co.	DTE	C-U-20836	11/18/2022	9.90%
Pacific Gas and Electric Co.	PCG	A-22-04-008	12/15/2022	10.00%
San Diego Gas & Electric Co.	SRE	A-22-04-012	12/15/2022	9.95%
Southern California Edison Co.	EIX	A-22-04-009	12/15/2022	10.05%
Georgia Power Co.	SO	D-44280	12/20/2022	10.50%
Sierra Pacific Power Co.	BRK.A	D-22-06014	12/27/2022	9.56%
Empire District Electric Co.	AQN	Ca-PUD202100163	12/29/2022	9.30%
PacifiCorp	BRK.A	D-UE-399	12/16/2022	9.50%
Puget Sound Energy Inc.		D-UE-220066	12/22/2022	9.40%
Wisconsin Electric Power Co.	WEC	D-5-UR-110 (WEP-Elec)	12/29/2022	9.80%
Wisconsin Public Service Corp.	WEC	D-6690-UR-127 (Elec)	12/22/2022	9.80%
Consumers Energy Co.	CMS	C-U-21224	1/19/2023	9.90%
Minnesota Power Entrprs Inc.	ALE	D-E-015/GR-21-335	1/23/2023	9.65%
Cheyenne Light Fuel Power Co.	BKH	D-20003-214-ER-22	1/26/2023	9.75%
Southwestern Electric Power Co	AEP	D-U-35441	2/17/2023	9.50%
Duke Energy Progress LLC	DUK	D-2022-254-E	2/9/2023	9.60%
Upper Peninsula Power Co.		C-U-21286	3/24/2023	9.90%
Q4 2022 Average				9.87%
Q1 2023 Average				9.72%

VII. PROXY GROUP SELECTION

Q: Please provide a summary profile of the Evergy Companies.

A: Evergy Metro, Inc., of which EKM is a part, and EKC are wholly-owned subsidiaries of Evergy. EKM is a regulated electric utility that provides generation, transmission and distribution of electricity to approximately 571,500 customers in eastern Kansas and

western Missouri.[26] As of December 31, 2022, EKM's net utility electric plant in Kansas was approximately $3.043 billion.[27] EKM currently has an investment-grade long term rating from S&P of A (Outlook: Negative) and from Moody's of Baa1 (Outlook: Stable).[28] EKC is a regulated electric utility that provides generation, transmission and distribution of electricity to approximately 730,800 customers in central and eastern Kansas.[29] As of December 31, 2022, EKC's net utility electric plant in Kansas was approximately $6.793 billion.[30] EKC currently has an investment-grade long-term rating from S&P of A- (Outlook: Negative) and from Moody's of Baa1 (Outlook: Stable).[31] The Companies' parent, Evergy, cumulatively serves approximately 1,640,800 customers in Kansas and Missouri, with EKM and EKC comprising approximately 60% of Evergy's total customers.

Q: Why have you used a group of proxy companies to estimate the cost of equity for the Companies?

A: One of the purposes of this proceeding is to estimate the cost of equity for electric utility companies that are not publicly traded. Because the cost of equity is a market-based concept and because the Companies' operations do not make up the entirety of a publicly traded entity, it is necessary to establish a group of companies that are both publicly traded and comparable to the Companies in certain fundamental business and financial respects to serve as their "proxy" in the cost of equity estimation process.

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[26] Evergy, Inc. Form 10-K 2021 Annual Report, at 15.

[27] Provided by the Companies.

[28] S&P and Moody's Ratings, accessed February 7, 2023.

[29] Evergy, Inc. Form 10-K 2021 Annual Report, at 15.

[30] Provided by the Companies.

[31] S&P and Moody's Ratings accessed February 7, 2023.

Even if the Companies' electric utility operations in Kansas did constitute the entirety of a publicly-traded entity, it is possible that transitory events could bias its market value over a given period of time. A significant benefit of using a proxy group is that it moderates the effects of unusual events that may be associated with any one company. The companies included in the proxy group all possess a set of operating and risk characteristics that are substantially comparable to the Companies', and thus provide a reasonable basis to derive and estimate an appropriate cost of equity for the Companies.

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

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

- pay consistent quarterly cash dividends, since companies that do not cannot be analyzed using the constant growth DCF model;
- have investment grade long-term issuer ratings from both S&P and Moody's;
- are covered by more than one utility industry analyst;
- have positive long-term earnings growth forecasts from at least two equity analysts;
- own generation assets included in rate base;
- derive at least 40 percent of sales from company-owned generation;
- derive at least 60 percent of the company's total operating income from regulated operations;
- derive at least 60 percent of the company's total regulated operating income from regulated electric operations; and
- were not party to a merger or transformative transaction during the analytical period considered.

Q: Did you exclude any other companies from the proxy group?

A: Yes. I also excluded Hawaiian Electric Industries, Inc. ("HE") on the basis that its operations are concentrated on the islands of Hawaii, and therefore, the company faces geographic concentration risk for both its regulated and substantial unregulated operations not applicable to the other utilities considered. As HE noted in the company's 2021 Form10-K:

> The Company is subject to the risks associated with the geographic concentration of its businesses and current lack of interconnections that could result in service interruptions at the Utilities or higher default rates on loans held by ASB [American Savings Bank].[32]

The increased risk of service interruptions resulting from HE's geographic location that could result in revenue loss and increased costs is a risk unique to HE and would not apply to utilities located on the U.S. mainland. Furthermore, HE's unregulated operations, which represent approximately 33 percent of the company's operation income in 2021 are concentrated in the banking sector through the ownership of American Savings Bank ("ASB").[33] ASB also only operates on Hawaii; thus, all of the company's consumer and commercial loans are to customers on Hawaii. If Hawaii were to face an adverse economic or political event, ASB could face severe financial effects given the company's geographic concentration in Hawaii.[34] As a result, I have excluded HE from my proxy group considering HE's unique geographical risks.

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[32] Hawaii Electric Industries, Inc., 2021 Form 10-K, at 23.

[33] *Id*., at 86.

[34] *Id*., at 20.

Q: What is the composition of your proxy group?

A: The screening criteria discussed above is shown in **Exhibit AEB-2** and results in a proxy group consisting of the companies shown in Figure 7 below:

Figure 7: Proxy Group

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avista Corporation	AVA
CMS Energy Corporation	CMS
Dominion Resources, Inc.	D
Duke Energy Corporation	DUK
Entergy Corporation	ETR
IDACORP, Inc.	IDA
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE
Otter Tail Corporation	OTTR
Portland General Electric Company	POR
Southern Company	SO
Xcel Energy Inc.	XEL

Q: Why is it appropriate to recognize the risks of owning generation in developing the proxy group?

A: As discussed, EKM and EKC are vertically-integrated electric utilities, and the overall purpose of developing a set of screening criteria is to select a proxy group of companies that align with the financial and operational characteristics of the Companies and that

investors would view as comparable to the Companies. Thus, I have applied a screening criterion to remove companies that do not own substantial amounts of generation and therefore, may not be as comparable to the Companies. According to Moody's, generation ownership causes vertically-integrated electric utilities to have higher business risk than either electric transmission and distribution companies, or natural gas distribution or transportation companies. For example, Moody's states that:

> Generation utilities and vertically integrated utilities generally have a higher level of business risk because they are engaged in power generation, so we apply the Standard Grid. We view power generation as the highest-risk component of the electric utility business, as generation plants are typically the most expensive part of a utility's infrastructure (representing asset concentration risk) and are subject to the greatest risks in both construction and operation, including the risk that incurred costs will either not be recovered in rates or recovered with material delays.[35]

Q: Is there additional evidence that vertically-integrated electric utilities have different risk profiles than transmission and distribution-only utilities?

A: Yes. Many states across the U.S. have either set goals or mandated standards for increasing the amount of renewable generation and decreasing carbon emissions. Furthermore, many utilities across the U.S. have voluntarily developed clean energy commitments with long-term goals such as net-zero emissions and 100 percent renewable generation. Thus, vertically-integrated electric utilities will be transforming their generation fleets over the next few decades to achieve these goals and mandates. For example, Evergy has a goal to achieve net-zero carbon emissions by 2045 with an interim goal of 70 percent reduction in carbon emissions from 2005 levels by 2030.[36] As I discuss in more detail later herein,

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[35] Moody's Investors Service. Rating Methodology: Regulated Electric and Gas Utilities, April 2022, at 21.

[36] Evergy, Inc. Form 10-K 2021 Annual Report, at 10.

Evergy plans to achieve these goals by retiring approximately 1,900 MW of fossil fuel generation (*i.e.*, fueled by coal, oil, and natural gas) and adding approximately 3,500 MW of renewable generation (*i.e.*, solar and wind) over the next ten years.

Thus, the long-term transition of the generation fleets of vertically-integrated electric utilities will require significant investment in renewable generation as well as the retirement of many coal- and natural gas-fired generation assets. While transmission and distribution-only ("T&D") utilities will also need to invest in their transmission and distribution systems to facilitate the transition to clean energy generation, T&D utilities will not face the risk associated with fossil fuel generation retirements and the need to build new renewable generation. Therefore, the risks confronted by a vertically-integrated electric utility are quite different from the risks confronted by a T&D utility over the near and long term. As a result, I have applied a generation screening criterion to ensure that a significant portion of the total sales of each of the proxy group companies are supplied with power from generation assets that they own, which is similar to EKM and EKC.

VIII. COST OF EQUITY ESTIMATION

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

A: The overall rate of return for a regulated utility is the weighted average cost of capital, in which the cost rates of the individual sources of capital are weighted by their respective book values. The ROE is the cost of common equity capital in the utility's capital structure for ratemaking purposes. While the costs of debt and preferred stock can be directly observed, the cost of equity is market-based and, therefore, must be estimated based on observable market data.

Q: How is the required cost of equity determined?

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

Q: What methods did you use to determine your recommended ROE in this proceeding?

A: I considered the results of the constant growth DCF model, the CAPM, the ECAPM, and the Bond Yield Plus Risk Premium analysis. As discussed in more detail below, a reasonable ROE estimate appropriately considers alternative methodologies and the reasonableness of their individual and collective results.

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

A: Yes. Because the cost of equity is not directly observable, it must be estimated based on both quantitative and qualitative information. When faced with the task of estimating the cost of equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed. Several models have been developed to estimate the cost of equity, and I use multiple approaches to estimate the cost of equity. As a practical matter, however, all the models available for estimating the cost of equity are subject to limiting assumptions or other methodological constraints. Consequently, many well-regarded finance texts recommend using multiple approaches when estimating the cost of

equity. For example, Copeland, Koller, and Murrin[37] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[38] recommend the CAPM, DCF, and Bond Yield Plus Risk Premium approaches.

Q: Do current market conditions support the use of more than one analytical approach?

A: Yes. As I discussed above, interest rates have increased substantially over the past year and are expected to remain elevated over at least the next year from the lows seen during the COVID-19 pandemic. The benefit of using multiple models is that each model relies on different assumptions, certain of which may better reflect current and projected market conditions at different times. As discussed previously, the CAPM, ECAPM, and Bond Yield Plus Risk Premium analysis offer some balance through the use of projected interest rates since the effect of changes in interest rates, particularly the recent increase in interest rates, may not be captured as well in the DCF model at this time. Therefore, it is important to use multiple analytical approaches to ensure that the cost of equity results reflect market conditions that are expected during the period that the Companies' rates will be in effect.

Q: Has the Commission previously recognized that it is important to consider the results of multiple cost of equity models?

A: Yes. In its order in Docket No. 10-KCPE-415-RTS, the Commission determined the authorized ROE for EKM based on both the DCF and the CAPM analyses presented by the witnesses in the proceeding. Specifically, the Commission noted that:

> The last main capital issue raises the question of whether CAPM is appropriate to include in setting the ROE. For us, this is not a difficult question, and we find that in this case, under the economic conditions that exist and under which all parties have labored, CAPM should be included. We also conclude, as a

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

[38] Brigham, Eugene and Louis Gapenski. Financial Management: Theory and Practice. Orlando, Dryden Press, 1994, at 341.

> matter of law, that we are afforded broad discretion in setting the ROE, and interpret that discretion to extend beyond a rigid formulaic approach. Therefore, after reviewing the evidence presented by all three parties on the CAPM question, we are most persuaded by the testimony offered by Crane and Gatewood. Using both CAPM and DCF generates an analysis that encompasses the current economic climate.[39]

Furthermore, the Commission has noted in subsequent orders that it has relied on the evidence provided by each of the ROE witnesses in the case in the determination of the ROE.[40]

A. Constant Growth DCF Model

Q: Please describe the DCF approach.

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

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

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

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

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[39] Kansas Corporation Commission, Docket No. 10-KCPE-415-RTS, Order: 1) Addressing Prudence; 2) Approving Application, in Part; & 3) Ruling on Pending Requests, November 22, 2010, at 43.

[40] *See, e.g.,* Kansas Corporation Commission, Docket No. 12-KCPE-764-RTS, Order, December 13, 2012, at 11; Kansas Corporation Commission, Docket No. 15-KCPE-116-RTS, Order, September 10, 2015, at 16; and Kansas Corporation Commission, Docket No. 19-ATMG-525-RTS, Order, February 24, 2020, at 8.

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

Q: What assumptions are required for the constant growth DCF model?

A: The constant growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions are not objectively valid, considered judgment and/or specific adjustments should be applied to the results.

Q: What market data do you use to calculate the dividend yield in your constant growth DCF model?

A: The dividend yield in my constant growth DCF model is based on the proxy group companies' current annualized dividend and average closing stock prices over the most recent 30, 90, and 180 trading days ended March 31, 2023.

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

A: I use an average of recent trading days to calculate the term P_0 in the DCF model to reflect current market data while also ensuring that the result of the model is not skewed by anomalous events that may affect stock prices on any given trading day.

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

A: Yes. Because utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth rate for purposes of calculating the expected

dividend yield component of the DCF model. This adjustment ensures that the expected first year dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the aggregated dividends to be paid during that time.

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

A: In its constant growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth estimate in perpetuity. To reduce the long-term growth rate to a single measure, one must assume that the payout ratio remains constant and that earnings per share, dividends per share and book value per share all grow at the same constant rate. Over the long run, however, dividend growth can only be sustained by earnings growth. Therefore, it is important to consider a variety of sources in arriving at a single projected long-term earnings growth rate for the constant growth DCF model.

Q: Which sources of long-term earnings growth rates did you use in your DCF analysis?

A: I incorporate three sources of long-term earnings per share ("EPS") growth rates: (1) Zacks Investment Research; (2) Yahoo! Finance; and (3) *Value Line*.

Q: Why are EPS growth rates the appropriate growth rates to be relied on in the DCF model?

A: Earnings are the fundamental driver of a company's ability to pay dividends; therefore, projected EPS growth is the appropriate measure of a company's long-term growth. In contrast, changes in a company's dividend payments are based on management decisions related to cash management and other factors. For example, a company may decide to retain earnings rather than pay out a portion of those earnings to shareholders through dividends.

Therefore, dividend growth rates are less likely than earnings growth rates to reflect accurately investor perceptions of a company's growth prospects.

Q: Have EPS growth rates been relied upon in the DCF in prior Kansas rate proceedings?

A: Yes. Staff Witness Gatewood relied on EPS growth rates in his DCF analysis in the Companies' 2018 rate case proceeding.[41]

Q: How did you calculate the range of results for the constant growth DCF model?

A: I calculated a low-end result for my DCF model using the minimum growth rate of the three sources (*i.e.*, the lowest of the Zacks, Yahoo Finance, and *Value Line* projected earnings growth rates) for each of the proxy group companies. I used a similar approach to calculate a high-end result, using the maximum growth rate of the three sources for each proxy group company. Lastly, I also calculated results using the average growth rate from all three sources for each proxy group company.

Q: What are the results of your constant growth DCF analyses?

A: Figure 8 (see also **Exhibit AEB-3**) summarizes the results of my DCF analysis. As shown in Figure 8, the mean and median DCF results using the average growth rates range from 9.50 percent to 9.85 percent, and the mean and median results using the maximum growth rates range from 9.98 percent to 10.84 percent. While I also summarize the DCF results using the minimum growth rates, given the expected underperformance of utility stocks going forward and thus the likelihood that the DCF model is understating the cost of equity, I do not believe it is appropriate to consider these DCF results at this time.

[41] Docket No. 18-KCPE- 480-RTS, Direct Testimony of Adam Gatewood at 36.

Figure 8: Summary of Constant Growth DCF Results

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Mean Results:			
30-Day Avg. Stock Price	8.65%	9.85%	10.84%
90-Day Avg. Stock Price	8.58%	9.78%	10.77%
180-Day Avg. Stock Price	8.59%	9.79%	10.78%
Average	8.61%	9.80%	10.80%
Median Results:			
30-Day Avg. Stock Price	9.20%	9.62%	10.07%
90-Day Avg. Stock Price	9.09%	9.56%	10.01%
180-Day Avg. Stock Price	9.04%	9.50%	9.98%
Average	9.11%	9.56%	10.02%

Q: Have regulatory commissions acknowledged that the DCF model might understate the cost of equity given the current capital market conditions of high inflation and increased interest rates?

A: Yes. For example, in its May 2022 decision establishing the cost of equity for Aqua Pennsylvania, Inc., the Pennsylvania Public Utility Commission concluded that the current capital market conditions of high inflation and increased interest rates has resulted in the DCF model understating the utility cost of equity, and that weight should be placed on risk premium models, such as the CAPM, in the determination of the ROE:

> To help control rising inflation, the Federal Open Market Committee has signaled that it is ending its policies designed to maintain low interest rates. Aqua Exc. at 9. Because the DCF model does not directly account for interest rates, consequently, it is slow to respond to interest rate changes. However, I&E's CAPM model uses forecasted yields on ten-year Treasury bonds, and accordingly, its methodology captures forward looking changes in interest rates.
>
> Therefore, our methodology for determining Aqua's ROE shall utilize both I&E's DCF and CAPM methodologies. As noted above, the Commission recognizes the importance of informed judgment and information provided by other ROE models. In the 2012 PPL Order, the Commission considered PPL's CAPM and RP methods, tempered by informed judgment, instead of DCF-only results. We conclude that methodologies other than the DCF can be used as a

> check upon the reasonableness of the DCF derived ROE calculation. Historically, we have relied primarily upon the DCF methodology in arriving at ROE determinations and have utilized the results of the CAPM as a check upon the reasonableness of the DCF derived equity return. As such, where evidence based on other methods suggests that the DCF-only results may understate the utility's ROE, we will consider those other methods, to some degree, in determining the appropriate range of reasonableness for our equity return determination. In light of the above, we shall determine an appropriate ROE for Aqua using informed judgement based on I&E's DCF and CAPM methodologies.[42]
>
> We have previously determined, above, that we shall utilize I&E's DCF and CAPM methodologies. I&E's DCF and CAPM produce a range of reasonableness for the ROE in this proceeding from 8.90% [DCF] to 9.89% [CAPM]. Based upon our informed judgment, which includes consideration of a variety of factors, including increasing inflation leading to increases in interest rates and capital costs since the rate filing, we determine that a base ROE of 9.75% is reasonable and appropriate for Aqua.[43]

Q: Did you rely on the use of a two-stage DCF model?

A: No, I did not. Utilities are considered a mature industry, as such it is not necessary to adjust the growth rate to reflect a longer-term steady state. Therefore, I have relied on the constant growth version of the DCF model.

Q: Are you aware that the Federal Energy Regulatory Commission ("FERC") relies on a two-stage DCF model that averages earnings per share growth rates with nominal GDP growth?

A: Yes, I am. However, it is important to note that in Opinion No. 569-A, the FERC recognized that the growth rate of electric utilities have declined and are now closer to the current GDP growth rate projections than those from the 1990s when the FERC adopted a two-step DCF methodology that weighted GDP growth as one-third of the growth rate in

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[42] Pennsylvania Public Utility Commission, Docket Nos. R-2021-3027385 and R-2021-3027386, Opinion and Order, May 12, 2022, pp. 154–155.

[43] *Id*., pp. 177–178.

the DCF. As a result, the FERC reduced the weighting on GDP growth to 20 percent of the total growth rate in that proceeding. This change in the emphasis on GDP growth was affirmed in FERC Opinion 575.[44]

Q: What are your conclusions about the results of the DCF models?

A: As discussed previously, one primary assumption of the DCF models is a constant price-to-earnings ratio, and that assumption is heavily influenced by the market price of utility stocks. Since utility stocks are expected to underperform the broader market over the near-term as interest rates remain elevated and yields on long-term government bonds exceed utility dividend yields, it is important to consider the results of the DCF models with caution. Therefore, while I have given weight to the results of the constant growth DCF model, my recommendation also gives weight to the results of other cost of equity estimation models.

B. CAPM Analysis

Q: Please briefly describe the CAPM.

A: The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable or "systematic" risk of that security. Systematic risk is the risk inherent in the entire market or market segment, which cannot be diversified away using a portfolio of assets. Unsystematic risk is the risk of a specific company that can, theoretically, be mitigated through portfolio diversification.

[44] FERC Opinion No. 569-A 171 FERC 61,154 at PP 57-58. See also FERC Opinion No 575 at P 131.

The CAPM is defined by four components:

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

Where:

K_e = the required market ROE;

β = beta coefficient of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market.

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

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

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

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

A: I rely on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year Treasury bonds, which is 3.81 percent;[45] (2) the average projected 30-year Treasury bond yield for the second quarter of 2023 through the second quarter of 2024,

[45] Bloomberg Professional as of March 31, 2023.

which is 3.78 percent;[46] and (3) the average projected 30-year Treasury bond yield for 2024 through 2028, which is 3.90 percent.[47]

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

A: As shown in **Exhibit AEB-4**, I use the beta coefficients for the proxy group companies as reported by Bloomberg and *Value Line*. The beta coefficients reported by Bloomberg are calculated using ten years of weekly returns relative to the S&P 500 Index. The beta coefficients reported by *Value Line* are calculated using five years of weekly returns relative to the NYSE Composite Index. Additionally, as shown in **Exhibit AEB-5**, I consider another CAPM analysis that relies on the long-term average beta coefficient for the companies in my proxy group, which is calculated as an average of the *Value Line* beta coefficients for the companies in my proxy group from 2013 through 2022.

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

A: I estimate the market risk premium as the difference between the implied expected equity market return and the risk-free rate. As shown in Attachment AEB-6, the expected market return is calculated using the constant growth DCF model discussed earlier in my testimony for the companies in the S&P 500 Index. Based on an estimated market capitalization-weighted dividend yield of 1.76 percent and a weighted long-term growth rate of 10.26 percent, the estimated required market return for the S&P 500 Index as of March 31, 2023, is 12.11 percent. Based on the three risk-free rates considered, the market risk premium ranges from 8.21 percent to 8.33 percent.

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[46] *Blue Chip Financial Forecasts*, Vol. 42, No. 4, March 31, 2023, at 2.
[47] *Blue Chip Financial Forecasts*, Vol. 41, No. 12, December 2, 2022, at 14.

Q: You calculate the market risk premium as the difference between the market return and the income return on government bonds. Is it appropriate to use the income return on government bonds as opposed to the total return on government bonds?

A: Yes. Morningstar (now Kroll), one of the publishers of the historical market risk premium data, discussed this in its publication *Stocks, Bonds, Bills and Inflation,* which has been relied upon by cost of capital witnesses in regulatory proceedings for decades. As noted by Morningstar:

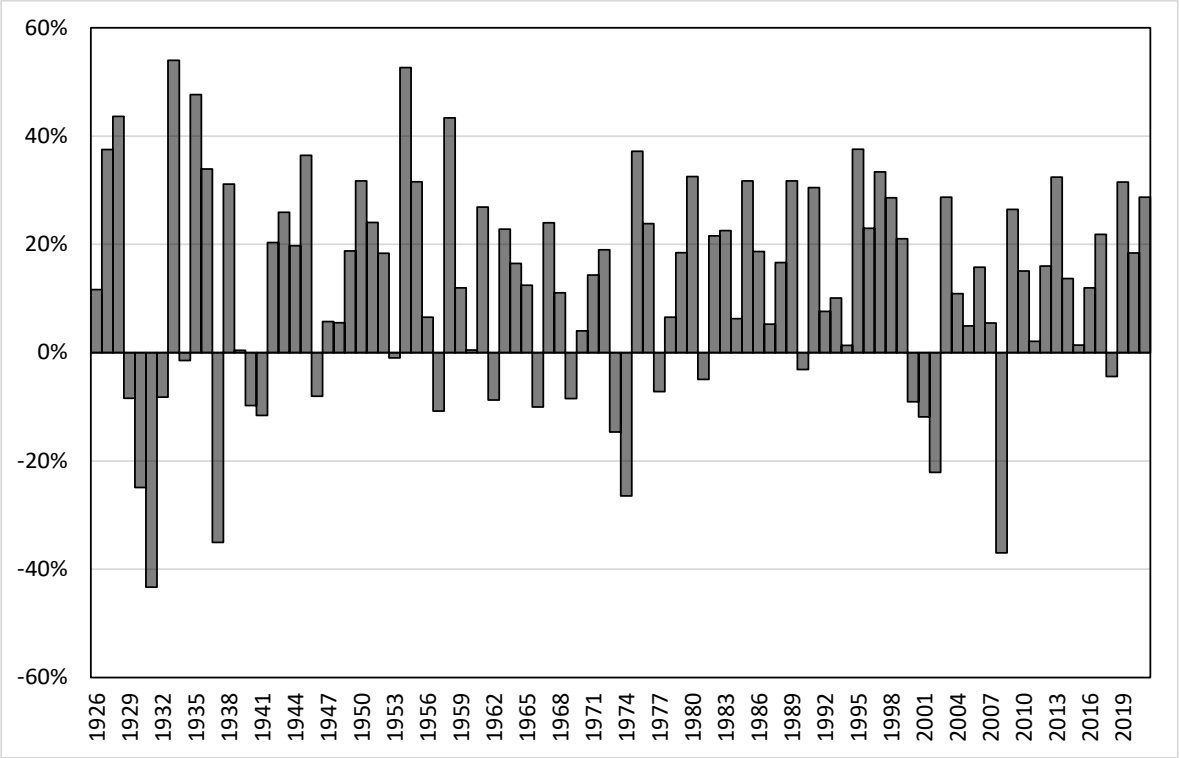
> Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate horizon Treasury security, rather than the total return, is used in the calculation. The total return is comprised of three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow or, in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in react to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.[48]

Q: How does the current expected market return of 12.50 percent compare to observed historical market returns?

A: As shown in Figure 9, given the range of annual equity returns that have been observed over the past century, a current expected market return of 12.11 percent is not unreasonable. As shown, in 50 out of the past 96 years (or roughly 52 percent of observations), the realized equity market return was 12.11 percent or greater.

[48] Morningstar, Inc. 2010, Ibbotson SBBI 2010 Valuation Yearbook at 55.

Figure 9: Realized U.S. Equity Market Returns (1926-2021)[49]



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

A: Yes. I have also considered the results of an ECAPM analysis in estimating the cost of equity for the Companies.[50] The ECAPM calculates the product of the adjusted beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium without any effect from the beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

[49] Depicts total annual returns on large company stocks, as reported in the 2022 *Kroll* SBBI Yearbook.

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

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

Where:

k_e = the required market ROE

β = adjusted beta coefficient of an individual security

r_f = the risk-free rate of return

r_m = the required return on the market as a whole

In essence, the ECAPM addresses the tendency of the "traditional" CAPM to underestimate the cost of equity for companies with low beta coefficients such as regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted betas in the traditional CAPM; rather, it recognizes the results of academic research indicating that the risk-return relationship is different (in essence, flatter) than estimated by the CAPM, and that the CAPM underestimates the "alpha," or the constant return term.[51]

As with the CAPM, my application of the ECAPM uses the forward-looking market risk premium estimates, the three yields on 30-year Treasury securities noted earlier as the risk-free rate, and the current Bloomberg, current *Value Line*, and long-term *Value Line* beta coefficients.

Q: What are the results of your CAPM analyses?

A: As shown in Figure 10 (see also **Exhibit AEB-4**), my traditional CAPM analysis produces a range of returns from 9.96 percent to 11.06 percent. The ECAPM analysis results range from 10.50 percent to 11.32 percent.

[51] *Id*., at 191.

Figure 10: CAPM and ECAPM Results

	Current 30-Day Avg 30-Year Treasury Yield	Near-Term Projected 30-Year Treasury Yield	Longer-Term Projected 30-Year Treasury Yield
CAPM:			
Current *Value Line* Beta	11.05%	11.05%	11.06%
Current Bloomberg Beta	10.49%	10.48%	10.50%
Long-term Avg. *Value Line* Beta	9.97%	9.96%	9.99%
ECAPM:			
Current *Value Line* Beta	11.31%	11.31%	11.32%
Current Bloomberg Beta	10.89%	10.89%	10.91%
Long-term Avg. *Value Line* Beta	10.50%	10.50%	10.52%

C. Bond Yield Plus Risk Premium Analysis

Q: Please describe the Bond Yield Plus Risk Premium approach.

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

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

A: Yes. It is important to recognize both academic literature and market evidence indicating that the equity risk premium (as used in this approach) is inversely related to the level of interest rates (*i.e.*, as interest rates increase, the equity risk premium decreases, and vice

versa). Consequently, it is important to develop an analysis that: (1) reflects the inverse relationship between interest rates and the equity risk premium; and (2) relies on recent and expected market conditions. Such an analysis can be developed based on a regression of the risk premium as a function of Treasury bond yields. When the authorized ROEs for electric utilities serve as the measure of required equity returns and the yield on the long-term Treasury bond is defined as the relevant measure of interest rates, the risk premium is the difference between those two points.[52]

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

A: Yes. Investors are aware of authorized ROEs in other jurisdictions, and they consider those authorizations as a benchmark for a reasonable level of equity returns for utilities of comparable risk operating in other jurisdictions. Because my Bond Yield Plus Risk Premium analysis is based on authorized ROEs for utility companies relative to corresponding Treasury yields, it provides relevant information to assess the return expectations of investors in the current interest rate environment.

Q: What did your Bond Yield Plus Risk Premium analysis reveal?

A: As shown in Figure 11 below, from 1992 through March 31, 2023, there was a strong negative relationship between risk premia and interest rates. To estimate that relationship, I conducted a regression analysis using the following equation:

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

$$RP = a + bT \quad [6]$$

Where:

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

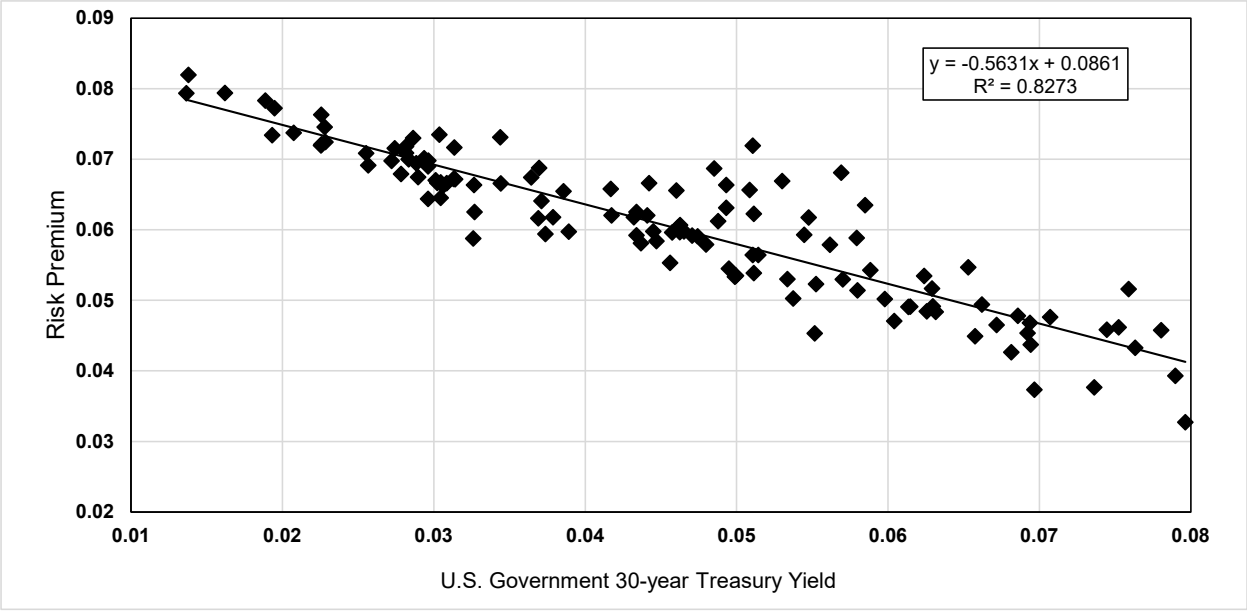
a = intercept term

b = slope term

T = 30-year Treasury bond yield

Data regarding authorized ROEs were derived from all electric distribution rate cases from 1992 through March 2023 as reported by Regulatory Research Associates ("RRA").[53] This equation's coefficients were statistically significant at the 99.00 percent level.

Figure 11: Risk Premium Regression Analysis



As shown on **Exhibit AEB-7**, based on the current 30-day average of the 30-year U.S. Treasury bond yield, the risk premium would be 6.47 percent, resulting in an estimated cost of equity of 10.27 percent. Based on the near-term (Q2 2023– Q2 2024) projections

[53] This analysis began with over 1,400 cases and was screened to eliminate limited issue rider cases, transmission-only cases, and cases that were silent with respect to the authorized ROE. After applying those screening criteria, the analysis was based on data from over 700 cases.

of the 30-year U.S. Treasury bond yield, the risk premium would be 6.43 percent, resulting in an estimated cost of equity of 10.31 percent. Based on longer-term (2024-2028) projections of the 30-year U.S. Treasury bond yield, the risk premium would be 6.41 percent, resulting in an estimated cost of equity of 10.31 percent.

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

A. I have considered the results of the Bond Yield Risk Premium analysis in setting my recommended ROE for the Companies. As noted above, investors consider the authorized ROE determination by a regulator when assessing the risk of that company as compared to utilities of comparable risk operating in other jurisdictions.

IX. REGULATORY AND BUSINESS RISKS

Q: Taken alone, do the results from the cost of equity estimation models for the proxy group provide an appropriate estimate of the cost of equity for the Companies?

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

A. Capital Expenditures

Q: Please summarize the Companies' capital expenditure requirements.

A; As of December 31, 2022, EKM had net utility plant of approximately $3.270 billion, and EKM currently projects capital expenditures for 2023 through 2027 of approximately

$1.528 billion.[54] Therefore, EKM's projected capital expenditures represent approximately 46.73 percent of its net utility plant as of December 31, 2022. Over the same time period, EKC had net utility plant of $9.514 billion and capital expenditures for 2023 through 2027 of approximately $6.077 billion.[55] Therefore, EKC's projected capital expenditures represent approximately 63.87 percent of their net utility plant as of December 31, 2022.

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

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

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

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

> When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable

[54] Data provided by the Companies.

[55] Data provided by the Companies.

> for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were extraordinary measures for use in unusual circumstances, but when construction costs are rising, cash flow support could be crucial to maintain credit quality through the spending program. Even more favorable are those jurisdictions that present an opportunity for a higher return on capital projects as an incentive to investors.[56]

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

Q: How do the Companies' capital expenditure requirements compare to those of the proxy group companies?

A: As shown on **Exhibit AEB-8**, I calculated the ratio of expected capital expenditures to net utility plant for each of the companies and each of the companies in the proxy group by dividing each company's projected capital expenditures for 2023-2027 by its total net utility plant as of December 31, 2022. As shown therein, EKM's ratio of capital expenditures as a percentage of net utility plant is slightly below the median for the proxy group. EKC's capital expenditures are at the high end of the range as compared with the proxy group.

B. Regulatory Risk

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

A: The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have the opportunity to recover the return of, and the market-required return on, invested capital. Regulatory authorities recognize that because utility operations are capital

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

intensive, regulatory decisions should enable the utility to attract capital at reasonable terms, and doing so balances the long-term interests of investors and customers. To achieve this balance, the Companies must be able to finance their operations assuming a reasonable opportunity to earn an appropriate return on invested capital to maintain an acceptable financial profile. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' risk assessments.

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

In addition, equity investors require that the authorized return be adequate to provide a risk-comparable return on the equity portion of the utility's capital investments. Because equity investors are the residual claimants on the utility's cash flows (which is to say that the equity return is subordinate to interest payments), they are particularly concerned with the strength of regulatory support and its effect on future cash flows

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

A. Both Moody's and S&P consider the overall regulatory framework in establishing credit ratings. Specifically, Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity, and key financial metrics. Of these criteria, regulatory framework and the ability to recover costs and earn returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.[57]

S&P also identifies the regulatory framework as an important factor in credit ratings for regulated utilities, stating: "One significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions in which a utility operates."[58] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[59]

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

A: The regulatory environment can significantly affect both access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted

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[57] Moody's Investors Service. Rating Methodology: Regulated Electric and Gas Utilities. June 23, 2017, at 4.
[58] Standard & Poor's Global Ratings. Ratings Direct. U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others. June 25, 2018, at 2.
[59] *Id*., at 1.

by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations."[60] Moody's has further highlighted the relevance of a stable and predictable regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation."[61]

Q: Have you conducted any analysis of the risk associated with the regulatory framework in Kansas relative to the jurisdictions in which the utility operating subsidiaries of the companies in your proxy group operate?

A: Yes. I have evaluated the regulatory framework in Kansas on three factors that are important in terms of providing a regulated utility a reasonable opportunity to earn its authorized ROE: (1) test year convention (*i.e.*, forecast vs. historical); (2) use of revenue decoupling mechanisms or other clauses that mitigate volumetric risk and stabilize revenue; and (3) prevalence of capital cost recovery between rate cases. The results of this regulatory risk assessment are shown in **Exhibit AEB-9** and are summarized as follows:

Test Year Convention: The Companies currently use a historical test year, and approximately 51 percent of the utility operating subsidiaries of the companies in the proxy group use fully or partially forecasted test years.

Revenue Stabilization / Volumetric Risk: Neither Evergy Central nor Evergy Metro currently have protection against volumetric risk in Kansas. In comparison,

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[60] Moody's Investors Service. Rating Methodology: Regulated Electric and Gas Utilities. June 23, 2017, at 6.
[61] *Id*.

approximately 57 percent of the operating utility subsidiaries of the proxy group companies have some form of revenue stabilization.

Capital Cost Recovery: Evergy Central and Evergy Metro have a rate rider that provides for the recovery of transmission capital costs in Kansas. While this mechanism helps reduce regulatory lag, this mechanism only addresses 35 percent of EKC's capital expenditures and 15 percent of EKM's capital expenditures. Approximately 79 percent of the operating utility companies of the proxy group have some form of capital cost recovery mechanism in place that allows them to recover capital investments that are placed into service between rate cases.

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

A: Yes. I have conducted two additional analyses to compare the regulatory framework of Kansas to the jurisdictions in which the utility operating subsidiaries of the proxy group operate. Specifically, I considered two different rankings: (1) the Regulatory Research Associates ("RRA") ranking of regulatory jurisdictions, which is presented in **Exhibit AEB-9**; and (2) S&P's ranking of the credit supportiveness of regulatory jurisdictions, which is presented in **Exhibit AEB-10.**

Q: Please explain how you used the RRA ratings to compare the regulatory jurisdictions of the utility operating subsidiaries of the proxy companies relative to the Companies?

A: RRA assigns a ranking for each regulatory jurisdiction between "Above Average/1" to "Below Average/3," with nine total rankings between these categories. I applied a similar numeric ranking system to the RRA rankings with "Above Average/1" assigned the highest

ranking ("1") and "Below Average/3" assigned the lowest ranking ("9"). As shown on **Exhibit AEB-10**, the Companies' jurisdictional ranking is "7" or "Below Average / 1", which is over two notches below the proxy group's average numeric ranking of "4.55" from RRA, which is between "Average / 1" and "Average / 2."

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

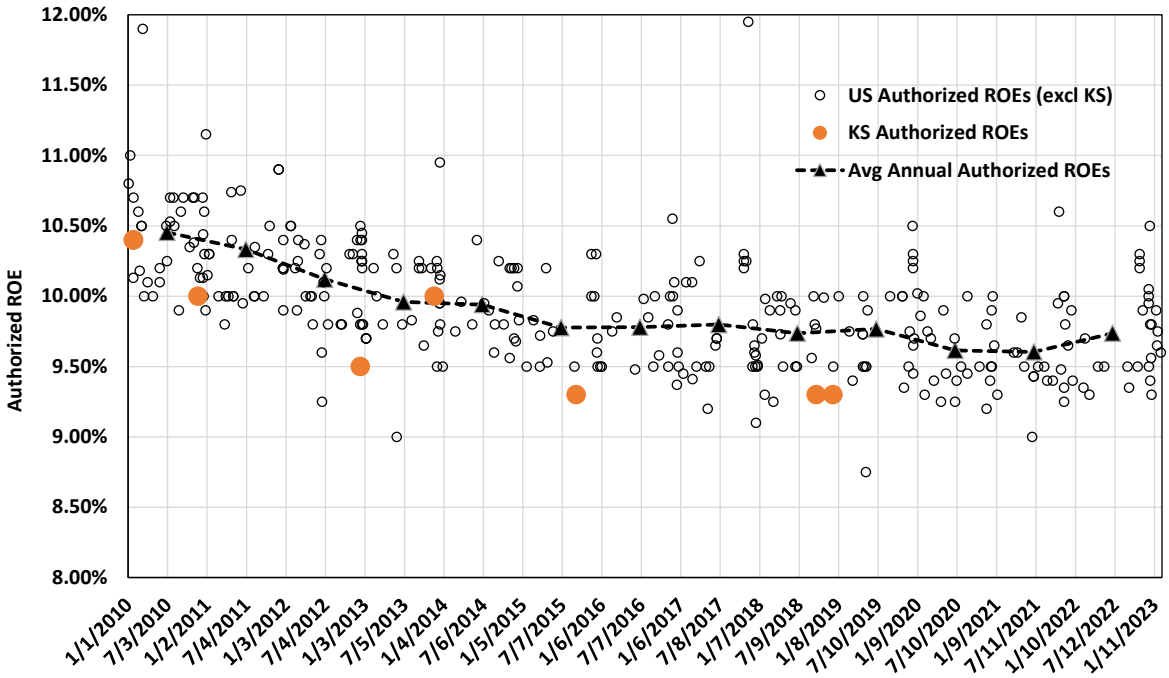
A For credit supportiveness, S&P classifies each regulatory jurisdiction into five categories that range from "Credit Supportive" to "Most Credit Supportive." My analysis of the credit supportiveness of the regulatory jurisdictions in which the proxy companies operate relative to the Companies' regulatory jurisdiction is similar to the analysis of the RRA overall regulatory ranking just discussed. Specifically, I assign a numerical ranking to each of S&P's categories, from Most Credit Supportive ("1") to Credit Supportive ("5"). As shown in **Exhibit AEB-11**, the proxy group average ranking is 2.41, which would be classified between "Very Credit Supportive" and "Highly Credit Supportive," while the Companies' rank is slightly higher at "Highly Credit Supportive" ("2"), which suggests that investors perceive regulation for the Companies as consistent with, albeit slightly above average, relative to the proxy group.

Q: How do the returns that have been authorized in Kansas compare with the authorized returns in other jurisdictions?

A: While nearly all the result of settlement agreements approved by the Commission, as shown in Figure 12, the authorized returns for vertically-integrated electric utilities in Kansas have been below the average authorized ROEs for vertically-integrated electric utilities across the United States. This can pose a problem because, as noted previously, utility subsidiaries must compete for discretionary capital within their own corporate

structures, which must in turn compete for capital with other utilities and businesses. Placing the Companies at the low end of authorized ROEs outside of Kansas over the longer term could negatively affect the Companies' access to discretionary capital.

Figure 12: Comparison of Kansas and US Authorized ROEs for Vertically-Integrated Electric Utilities



Q: How are credit rating agencies currently viewing the utility sector?

A: Credit rating agencies have indicated that the industry overall has increased risk, has responded with close scrutiny of the financial coverage ratios of the sector, and has a negative outlook on the industry overall for 2023. Therefore, it is critically important to consider these factors and to recognize that the investor-required cost of equity would be higher today than at the time of Commission decisions in the recent past. As previously,

current market conditions demonstrate greater risk than at the time the Commission authorized returns in the recent past.

Q: What is your conclusion regarding the regulatory framework in Kansas as compared with the jurisdictions in which the proxy group companies operate?

A: The regulatory framework in which a regulated utility provides service is one of the most important consideration for debt and equity investors. Based on my analysis, I conclude that the regulatory risk for EKC is higher than the proxy group, and EKM is slightly above the average for the proxy group, which reflects the limited Kansas's regulatory framework has somewhat greater risk than the jurisdictions in which the utility operating subsidiaries of the proxy group companies provide service. This reflects the Companies' use of a historical test year and limited revenue stabilization and capital cost recovery between rate cases, and the RRA's ranking relative to other jurisdictions.

X. CAPITAL STRUCTURE

Q: Is the capital structure an important consideration in the determination of the appropriate ROE for the Companies?

A: Yes. It is a fundamental tenet of finance that the greater the amount of financial risk borne by common shareholders, the greater the return required by shareholders in order to be compensated for the added financial risk imparted by the greater use of senior debt financing. In other words, assuming all else equal, the greater the debt ratio, the greater the risk to equity investors, and thus the greater the return required by equity investors. This is because the claim of equity holders on the cash flows of the Companies is secondary to debt holders, meaning the greater the debt service requirement, the less cash flow is available for common equity holders.

In this proceeding, a proxy group of comparable companies is being used to determine the Companies' ROEs. The returns that are required by investors for the proxy companies take into consideration the risk related to the capitalization of those companies. Thus, to the extent that the capital structure authorized for the Companies was to deviate significantly from the range established by the proxy group used to determine the ROE, that risk difference must be reflected in the equity return.

Q: Should the choice of capital structure change the overall weighted average cost of capital?

A: No. The capital structure and the return on debt and equity are not severable and therefore must be evaluated as a set of assumptions. It is important to recognize that the changes in the capital structure will affect the cost rates of the components of the capital structure. The use of more or less leverage (debt) in the capital structure affects the overall risk profile of the company. The return on debt and equity are investors' required returns for the risk associated with the repayment of the investment (equity or debt). Debt has priority repayment over equity, and therefore has a lower overall cost. The amount of debt that is included in the capital structure can however affect the overall cost of debt. Higher leverage will likely result in higher debt costs, as the risk associated with repayment increases with the increase in the required payments on debt instruments. Further, fixed payments, all else equal, reduce key credit metrics that affect credit ratings and the cost of debt. Therefore, the cost of debt will change with the amount of debt relied upon.

The investor required return on equity will also change as the capitalization of a company changes. Equity bears the residual repayment risk; it is the last investor to be repaid in the event of bankruptcy of a company. Therefore, the greater the leverage, the more of the

investments that have priority repayment before equity, the higher the investor-required return on the equity investment.

Q: What are the approaches that are most often considered by utility commissions when setting a regulated utility's capital structure for ratemaking purposes?

A: The approaches most often considered by regulatory commissions when setting a utility's capital structure are as follows:

- The operating company's actual (or projected) capital structure per the financial books and records of the company when such capital structure is reflective of the way the company is operated and it is generally consistent with industry norms.
- A hypothetical capital structure, especially if there are concerns that the actual per books capital structure is not reflective of the optimal capital structure for the company, and may be based on the capital structures of comparable companies (*e.g.*, set within the range of the proxy group) or determined by the regulatory commission based on other risk factors; and,
- The parent company's consolidated capital structure, which occurs most often when the operating company represents the vast majority of the parent holding company's operations, and therefore the financing for the operating company and the holding company are similar.

Q: Do the fundamental principles of regulation provide for the use of the actual capital structure?

A: Yes. The use of the operating utility's actual capital structure for ratemaking purposes is consistent with the stand-alone principle of ratemaking, which is a well-established regulatory principle providing that the rate of return (both return on equity and capital structure) for a regulated utility should be set as if the utility were seeking to attract capital in financial markets based on its own individual merits and risk profile. The stand-alone ratemaking principle states that rates should be established for each jurisdiction on an

independent basis. Therefore, this principle leads to the use of the actual capital structure as the default capital structure, as long as that capital structure is reasonable by reference to industry standards or a proxy group of firms with comparable risk.

Q: Have any regulatory commissions specifically identified when each of these capital structures should be applied?

A: Yes. The FERC has established standards for when to use each type of capital structure. The FERC's preference is to rely on the actual capital structure of the utility, as long as that capital structure is within industry norms. If the utility does not provide its own financing, the FERC will next rely on the capital structure of the entity that finances the company, as long as that capital structure is reasonable. If the financing entity's capital structure is anomalous, when compared to the proxy group companies, or other capital structures for utilities of similar operations, the FERC may employ a hypothetical capital structure. [62]

Q. You stated that leverage affects the metrics that are reviewed by the rating agencies. Have the credit rating agencies highlighted pressures on utilities' cash flows that should be considered in setting the Company's capital structure?

A: Yes. The credit rating agencies have recently highlighted challenges that are placing pressure on the outlook for utilities and noted that they should be considered in setting the Companies' capital structures.

For example, Moody's 2023 outlook for the regulated gas and electric utilities sector was "negative" based on ongoing challenges of inflation, increasing interest rates

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[62] *High Island Offshore System, L.L.C.* 110 FERC, ¶ 61,043, P134. See also *Enbridge*, 100 FERC ¶ 61,260 at P 173, *Michigan Gas Storage Co*., 87 FERC ¶ 61,038 at 61,157-61 (1999); *Transcontinental Gas Pipe Line Corp*., Opinion No. 414-A, 84 FERC ¶ 61,084 at 61,415 (Transco), reh'g denied, Opinion No. 414-B, 85 FERC ¶ 61,323 (1998), petition for review denied, *North Carolina Utilities Commission* v. FERC, 203 F.3d 53 (D.C. Cir. 2000) (per curiam).

and higher natural gas prices. Moody's noted that these challenges increase the pressure on customer affordability, and thus face heightened public scrutiny and the ability of utilities to promptly recover their costs. Moody's concluded that regulated utilities' financial metrics are already under pressure with little cushion, and that sustained capital spending is likely as utilities continue progress towards emissions reductions and net-zero goals. Moody's noted that the outlook could return to stable if regulatory support remains intact, natural gas prices are at a level where utilities are able to recover their fuel and purchased power costs without delay beyond 12 months, overall inflation moderates, interest rates stabilize and/or utilities' aggregate funds from operations-to-debt ratio remains between 14% to 15%.[63]

Fitch Ratings ("Fitch") also highlights similar factors as Moody's as challenging utilities' outlook for 2023, stating that the sector faces mounting cost pressures due to "elevated commodity prices, inflationary headwinds and rising interest costs," and that some offset in managing these headwinds include "higher authorized ROEs and the use of tools such as securitization of under-recovered fuel balances."[64]

Likewise, S&P continues to maintain a negative outlook for the utility industry,[65] noting that since downgrades outpaced upgrades for a third consecutive year in 2022 with a median investor-owned utility credit rating of "BBB+".[66]

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[63] Moody's Investors Service, Outlook, "2023 outlook negative due to higher natural gas prices, inflation and rising interest rates," November 10, 2022; Moody's Investors Service, Outlook, Sector In-Depth, "Inflation, high natural gas prices complicate prospects for supportive rate increases," November 11, 2022.

[64] Fitch Ratings, "North American Utilities, Power & Gas Outlook 2023," December 7, 2022, at 1-2.

[65] S&P Global Ratings, "Regulated Utilities: Credit quality has weakened and credit risks are rising," July 14, 2022.

[66] S&P Global Ratings. Industry Top Trends, "North American Regulated Utilities: The industries outlook remains negative." January 23, 2023.

Further, S&P expects the industry to have negative discretionary cash flow as a result of significant capital spending and consistent dividends.[67] Therefore, the utility industry will need ongoing access to capital markets to fund the capital expenditures. However, S&P notes that inflation, rising interests rates and decreasing equity prices may "hamper" consistent access to capital markets and result in additional pressure on cash flows.[68] Moreover, S&P indicates that if inflation risks persist over the near-term and customer bills increase, regulatory credit support could decrease resulting in weaker financial metrics for the industry:

> Over the past decade the industry's financial measures have weakened from a combination of rising capital spending, regulatory lag, and lower authorized return on equity (ROE). The industry's return on capital was about 6% a decade ago and today is closer to 4%. More recently, we have seen instances where not only is the authorized ROE lowered but also the equity ratio is lowered. These results have weakened the industry's financial measures, pressuring credit quality. Under our base case of moderating inflationary risks during 2023, we expect the industry's credit measures to generally remain flat. However, if inflationary risks persist, it may further pressure the customer bill, potentially decreasing the level of regulatory credit support, weakening the industry's financial performance.[69]

The credit ratings agencies' continued concerns over the negative effects of inflation and increased capital expenditures underscore the importance of maintaining adequate cash flow metrics for the Companies in the context of this proceeding.

Q: What capital structures are the Companies proposing?

A: EKM is proposing a capital structure composed of 52 percent equity and 48 percent long-term debt. Similarly, EKC is proposing a capital structure composed of 52.0376 percent

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[67] *Id*.
[68] *Id*.
[69] *Id*.

equity and 47.9624 percent long-term debt. The proposed capital structures reflects the Companies' projected capital structures as of June 30, 2023.

Q: Is it appropriate that the Companies' capital structures reflect their actual capital structure as opposed to their parent company's capital structure or a hypothetical capital structure for ratemaking purposes?

A: Yes, for a number of reasons it is appropriate that the Companies' capital structures reflect their actual capital structures for ratemaking purposes.

First, as discussed in Mr. Andrews's testimony the Non-Unanimous Settlement Agreement ("Settlement Agreement") regarding the merger between Westar Energy, Inc. and Great Plains Energy Inc. ("Merger Order") approved by the Commission requires that Evergy and the Companies maintain separate capital structures and separate debt. The Merger Order noted that a key term of the Settlement Agreement was that, "Holdco, KCPL&L, and Westar will maintain separate capital structure and separate debt." The financial and ring-fencing commitments made by Evergy and the Companies in the Settlement Agreement are discussed in more detail in the testimony of Company witness Kirkland Andrews. As noted by Mr. Andrews, both of the Companies maintain separate capital structures and issue their own debt as required by the Settlement Agreement.

Second, both Companies have their own credit ratings and issue their own debt. As noted previously, EKM currently has an investment-grade long-term rating from S&P of A (Outlook: Negative) and from Moody's of Baa1 (Outlook: Stable).[70] EKC currently has an investment-grade long-term rating from S&P of A- (Outlook: Negative) and from

[70] S&P and Moody's Ratings, accessed February 7, 2023.

Moody's of Baa1 (Outlook: Stable).[71] Therefore, the Companies are reasonably financially independent of their parent company.

Based on all of these factors, it is appropriate to use the Companies' actual capital structures for purposes of setting rates in this proceeding.

Q: Is there a basis for applying Evergy's capital structure or purposes of setting the Companies rates in this proceeding?

A: No. There is no basis to utilize the parent's capital structure as the ratemaking capital structure for the Companies. If the consolidated capital structure of Evergy were to be applied as the Companies' capital structures for ratemaking purposes, doing so would directly contradict the clearly stated intention to separate the Companies from Evergy in terms of capital structure and debt obligations as set forth in the Settlement Agreement and as required by the Commission.

Q: Is there any basis to rely on a hypothetical capital structure for the Companies?

A: No. As discussed previously, the stand-alone ratemaking principle suggests that the actual capital structure of the company should be relied upon, as long as the capital structure is reasonable. Further, the Companies' actual capital structures are consistent with those of the utility operating subsidiaries of the proxy group, there is also no reason to apply a hypothetical capital structure for ratemaking purposes.

Q: Did you conduct any analysis to determine the reasonableness of the Companies' projected actual capital structures?

A: Yes. In order to determine the reasonableness of the Companies' projected capital structures, I compared the Companies' proposals to the actual capital structures of the

[71] S&P and Moody's Ratings accessed February 7, 2023.

utility operating subsidiaries of the companies in the proxy group. Since the ROE is set based on the return that is derived from the risk-comparable proxy group, it is reasonable to look to the average capital structure for the proxy group to benchmark the capital structures proposed by the Companies.

Q: How did you conduct this analysis?

A: I calculated the average proportion of common equity, long-term debt, and preferred equity for the most recent two years for each of the companies in the proxy group at the operating subsidiary level.[72] As shown in **Exhibit AEB-12**, the average common equity ratio for the operating subsidiaries of the proxy group companies was 52.58 percent (representing a range from 45.35 percent to 60.92 percent). The Companies' proposed equity ratios are generally consistent with the mean of the equity ratios for the utility operating subsidiaries of the proxy group companies. Therefore, I consider their proposals reasonable.

Q: Have you reviewed the Companies' proposed cost of debt?

A: Yes. I have. **Exhibit AEB-13** summarizes the long-term debt issued for EKC and EKM. As shown in this exhibit, I have compared the interest rates for each issuance to the yield on the Moody's A rated utility bond index and the yield on the Moody's Baa Utility bond index on the settlement date for each issuance. I then calculated the weighted average cost of the actual issuances, as compared to the weighted average cost if the issuances had been placed at the Moody's A rated utility bond yield ad the Moody's Baa utility bond yield at the time of issuance.

[72] Long-term debt includes the current portion of long-term debt, assuming that the current portion would be refinanced with debt at maturity.

Q: What are your conclusions regarding the Companies' costs of long-term debt?

A: As shown in **Exhibit AEB-13**, the results of this analysis demonstrate that the debt issued by EKC and EKM has been below the yield on the Moody's A and Baa rated utility bond indexes. Therefore, I conclude that the weighted average cost of long-term debt issued for EKM and EKC are reasonable.

XI. CONCLUSIONS AND RECOMMENDATIONS

Q: What is your conclusion with respect to the Companies' proposed capital structures?

A: The Companies' proposed capital structures are within the range established by the proxy group companies. Taking into consideration the impact of current and projected market conditions on the cash flows of utilities as raised by the credit rating agencies, I conclude that the Companies' proposal is reasonable and should be adopted for ratemaking purposes.

Q: What is your conclusion regarding a fair ROE for the Companies?

A: Figure 13 summarizes the results of my cost of equity analyses. Based on the quantitative and qualitative analyses presented in my direct testimony, and the business and financial risks of the Companies as compared to the proxy group, the Companies' requested ROE of 10.25 percent is reasonable.

Figure 13: Summary of Analytical Results

Constant Growth DCF			
	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Mean Results:			
30-Day Avg. Stock Price	8.65%	9.85%	10.84%
90-Day Avg. Stock Price	8.58%	9.78%	10.77%
180-Day Avg. Stock Price	8.59%	9.79%	10.78%
Average	8.61%	9.80%	10.80%
Median Results:			
30-Day Avg. Stock Price	9.20%	9.62%	10.07%
90-Day Avg. Stock Price	9.09%	9.56%	10.01%
180-Day Avg. Stock Price	9.04%	9.50%	9.98%
Average	9.11%	9.56%	10.02%

CAPM / ECAPM / Bond Yield Risk Premium			
	Current 30-Day Avg 30-Year Treasury Yield	Near-Term Projected 30-Year Treasury Yield	Longer-Term Projected 30-Year Treasury Yield
CAPM:			
Current *Value Line* Beta	11.05%	11.05%	11.06%
Current Bloomberg Beta	10.49%	10.48%	10.50%
Long-term Avg. *Value Line* Beta	9.97%	9.96%	9.99%
ECAPM:			
Current *Value Line* Beta	11.31%	11.31%	11.32%
Current Bloomberg Beta	10.89%	10.89%	10.91%
Long-term Avg. *Value Line* Beta	10.50%	10.50%	10.52%
Bond Yield Risk Premium:	10.28%	10.26%	10.32%

Q: What is your conclusion about the Companies' overall proposed weighted average cost of capital?

A: I have reviewed the capital structures as compared to the proxy group and determined that the proposed capitalization of the companies is reasonable as compared with the proxy group. In addition, I have evaluated the Companies' cost of debt as compared with the Moody's A and Baa rated utility bond indexes and determined that the issuances made at each Company were within the range established by these indexes and are therefore reasonable. Finally, the Companies' requested ROE is within the range and slightly lower than my recommended ROE. Therefore, I conclude that the weighted average cost of capital proposed by each of the companies is reasonable and appropriate.

Q: Does this conclude your direct testimony?

A: Yes, it does.

Ann E. Bulkley

PRINCIPAL

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With more than 25 years of experience in the energy industry, Ms. Bulkley specializes in regulatory economics for the electric and natural gas sectors, including rate of return, cost of equity, and capital structure issues.

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

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

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

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

AREAS OF EXPERTISE

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

EDUCATION

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

PROFESSIONAL EXPERIENCE

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

SELECTED CONSULTING EXPERIENCE & EXPERT TESTIMONY

REGULATORY ANALYSIS AND RATEMAKING

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

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

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

COST OF CAPITAL

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

RATEMAKING

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

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

VALUATION

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

Representative projects/clients have included:

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

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

STRATEGIC AND FINANCIAL ADVISORY SERVICES

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

Representative projects include:

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

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arizona Corporation Commission				
UNS Electric	11/22	UNS Electric	Docket No. E-04204A-15-0251	Return on Equity
Tucson Electric Power Company	6/22	Tucson Electric Power Company	Docket No. G-01933A-22-0107	Return on Equity
Southwest Gas Corporation	12/21	Southwest Gas Corporation	Docket No. G-01551A-21-0368	Return on Equity
Arizona Public Service Company	10/19	Arizona Public Service Company	Docket No. E-01345A-19-0236	Return on Equity
Tucson Electric Power Company	04/19	Tucson Electric Power Company	Docket No. E-01933A-19-0028	Return on Equity
Tucson Electric Power Company	11/15	Tucson Electric Power Company	Docket No. E-01933A-15-0322	Return on Equity
UNS Electric	05/15	UNS Electric	Docket No. E-04204A-15-0142	Return on Equity
UNS Electric	12/12	UNS Electric	Docket No. E-04204A-12-0504	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arkansas Public Service Commission				
Oklahoma Gas and Electric Co	10/21	Oklahoma Gas and Electric Co	Docket No. D-18-046-FR	Return on Equity
Arkansas Oklahoma Gas Corporation	10/13	Arkansas Oklahoma Gas Corporation	Docket No. 13-078-U	Return on Equity
California Public Utilities Commission				
PacifiCorp, d/b/a Pacific Power	5/22	PacifiCorp, d/b/a Pacific Power	Docket No. A-22-05-006	Return on Equity
San Jose Water Company	05/21	San Jose Water Company	A2105004	Return on Equity
Colorado Public Utilities Commission				
Public Service Company of Colorado	11/22	Public Service Company of Colorado	Docket No. 22AL-0530E	Return on Equity
Public Service Company of Colorado	01/22	Public Service Company of Colorado	Docket No. 22AL-0046G	Return on Equity
Public Service Company of Colorado	07/21	Public Service Company of Colorado	21AL-0317E	Return on Equity
Public Service Company of Colorado	02/20	Public Service Company of Colorado	20AL-0049G	Return on Equity
Public Service Company of Colorado	05/19	Public Service Company of Colorado	19AL-0268E	Return on Equity
Public Service Company of Colorado	01/19	Public Service Company of Colorado	19AL-0063ST	Return on Equity
Atmos Energy Corporation	05/15	Atmos Energy Corporation	Docket No. 15AL-0299G	Return on Equity
Atmos Energy Corporation	04/14	Atmos Energy Corporation	Docket No. 14AL-0300G	Return on Equity
Atmos Energy Corporation	05/13	Atmos Energy Corporation	Docket No. 13AL-0496G	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Connecticut Public Utilities Regulatory Authority				
United Illuminating	09/22	United Illuminating	Docket No. 22-08-08	Return on Equity
United Illuminating	05/21	United Illuminating	Docket No. 17-12-03RE11	Return on Equity
Connecticut Water Company	01/21	Connecticut Water Company	Docket No. 20-12-30	Return on Equity
Connecticut Natural Gas Corporation	06/18	Connecticut Natural Gas Corporation	Docket No. 18-05-16	Return on Equity
Yankee Gas Services Co. d/b/a Eversource Energy	06/18	Yankee Gas Services Co. d/b/a Eversource Energy	Docket No. 18-05-10	Return on Equity
The Southern Connecticut Gas Company	06/17	The Southern Connecticut Gas Company	Docket No. 17-05-42	Return on Equity
The United Illuminating Company	07/16	The United Illuminating Company	Docket No. 16-06-04	Return on Equity
Federal Energy Regulatory Commission				
Sea Robin Pipeline	12/22	Sea Robin Pipeline	Docket No. RP22-___	Return on Equity
Northern Natural Gas Company	07/22	Northern Natural Gas Company	Docket No. RP22-___	Return on Equity
Transwestern Pipeline Company, LLC	07/22	Transwestern Pipeline Company, LLC	Docket No. RP22-___	Return on Equity
Florida Gas Transmission	02/21	Florida Gas Transmission	Docket No. RP21-441	Return on Equity
TransCanyon	01/21	TransCanyon	Docket No. ER21-1065	Return on Equity
Duke Energy	12/20	Duke Energy	Docket No. EL21-9-000	Return on Equity
Wisconsin Electric Power Company	08/20	Wisconsin Electric Power Company	Docket No. EL20-57-000	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Panhandle Eastern Pipe Line Company, LP	10/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-78-000 RP19-78-001	Return on Equity
Panhandle Eastern Pipe Line Company, LP	08/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-1523	Return on Equity
Sea Robin Pipeline Company LLC	11/18	Sea Robin Pipeline Company LLC	Docket# RP19-352-000	Return on Equity
Tallgrass Interstate Gas Transmission	10/15	Tallgrass Interstate Gas Transmission	RP16-137	Return on Equity
Idaho Public Utilities Commission				
Intermountain Gas Co	12/22	Intermountain Gas Co	C-INT-G-22-07	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	05/21	PacifiCorp d/b/a Rocky Mountain Power	Case No. PAC-E-21-07	Return on Equity
Illinois Commerce Commission				
Peoples Gas Light & Coke Company	01/23	Peoples Gas Light & Coke Company	D-23-0069	Return on Equity
North Shore Gas Company	01/23	North Shore Gas Company	D-23-0068	Return on Equity
Illinois American Water	02/22	Illinois American Water	Docket No. 22-0210	Return on Equity
North Shore Gas Company	02/21	North Shore Gas Company	No. 20-0810	Return on Equity
Indiana Utility Regulatory Commission				
Indiana Michigan Power Co.	07/21	Indiana Michigan Power Co.	IURC Cause No. 45576	Return on Equity
Indiana Gas Company Inc.	12/20	Indiana Gas Company Inc.	IURC Cause No. 45468	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Southern Indiana Gas and Electric Company	10/20	Southern Indiana Gas and Electric Company	IURC Cause No. 45447	Return on Equity
Indiana and Michigan American Water Company	09/18	Indiana and Michigan American Water Company	IURC Cause No. 45142	Return on Equity
Indianapolis Power and Light Company	12/17	Indianapolis Power and Light Company	Cause No. 45029	Fair Value
Northern Indiana Public Service Company	09/17	Northern Indiana Public Service Company	Cause No. 44988	Fair Value
Indianapolis Power and Light Company	12/16	Indianapolis Power and Light Company	Cause No.44893	Fair Value
Northern Indiana Public Service Company	10/15	Northern Indiana Public Service Company	Cause No. 44688	Fair Value
Indianapolis Power and Light Company	09/15	Indianapolis Power and Light Company	Cause No. 44576 Cause No. 44602	Fair Value
Kokomo Gas and Fuel Company	09/10	Kokomo Gas and Fuel Company	Cause No. 43942	Fair Value
Northern Indiana Fuel and Light Company, Inc.	09/10	Northern Indiana Fuel and Light Company, Inc.	Cause No. 43943	Fair Value
Iowa Department of Commerce Utilities Board				
MidAmerican Energy Company	01/22	MidAmerican Energy Company	Docket No. RPU-2022-0001	Return on Equity
Iowa-American Water Company	08/20	Iowa-American Water Company	Docket No. RPU-2020-0001	Return on Equity
Kansas Corporation Commission				
Atmos Energy Corporation	08/15	Atmos Energy Corporation	Docket No. 16-ATMG-079-RTS	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Kentucky Public Service Commission				
Kentucky American Water Company	11/18	Kentucky American Water Company	Docket No. 2018-00358	Return on Equity
Maine Public Utilities Commission				
Central Maine Power	08/22	Central Maine Power	Docket No. 2022-00152	Return on Equity
Central Maine Power	10/18	Central Maine Power	Docket No. 2018-194	Return on Equity
Maryland Public Service Commission				
Maryland American Water Company	06/18	Maryland American Water Company	Case No. 9487	Return on Equity
Massachusetts Appellate Tax Board				
Hopkinton LNG Corporation	03/20	Hopkinton LNG Corporation	Docket No.	Valuation of LNG Facility
FirstLight Hydro Generating Company	06/17	FirstLight Hydro Generating Company	Docket No. F-325471 Docket No. F-325472 Docket No. F-325473 Docket No. F-325474	Valuation of Electric Generation Assets
Massachusetts Department of Public Utilities				
National Grid USA	11/20	Boston Gas Company	DPU 20-120	Return on Equity
Berkshire Gas Company	05/18	Berkshire Gas Company	DPU 18-40	Return on Equity
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Michigan Public Service Commission				
Michigan Gas Utilities Corporation	03/21	Michigan Gas Utilities Corporation	Case No. U-20718	Return on Equity
Wisconsin Electric Power Company	12/11	Wisconsin Electric Power Company	Case No. U-16830	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Michigan Tax Tribunal				
New Covert Generating Co., LLC.	03/18	The Township of New Covert Michigan	MTT Docket No. 000248TT and 16-001888-TT	Valuation of Electric Generation Assets
Covert Township	07/14	New Covert Generating Co., LLC.	Docket No. 399578	Valuation of Electric Generation Assets
Minnesota Public Utilities Commission				
Minnesota Energy Resources Corporation	11/22	Minnesota Energy Resources Corporation	Docket No. G011/GR-22-504	Return on Equity
CenterPoint Energy Resources	11/21	CenterPoint Energy Resources	D-G-008/GR-21-435	Return on Equity
Allete, Inc. d/b/a Minnesota Power	11/21	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-21-630	Return on Equity
Otter Tail Power Company	11/20	Otter Tail Power Company	E017/GR-20-719	Return on Equity
Allete, Inc. d/b/a Minnesota Power	11/19	Allete, Inc. d/b/a Minnesota Power	E015/GR-19-442	Return on Equity
CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	10/19	CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	G-008/GR-19-524	Return on Equity
Great Plains Natural Gas Co.	09/19	Great Plains Natural Gas Co.	Docket No. G004/GR-19-511	Return on Equity
Minnesota Energy Resources Corporation	10/17	Minnesota Energy Resources Corporation	Docket No. G011/GR-17-563	Return on Equity
Missouri Public Service Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Ameren Missouri	08/22	Ameren Missouri	File No. ER-2022-0337	Return on Equity
Missouri American Water Company	07/22	Missouri American Water Company	Case No. WR-2022-0303 Case No. SR-2022-0304	Return on Equity
Evergy Missouri West	1/22	Evergy Missouri West	File No. ER-2022-0130	Return on Equity
Evergy Missouri Metro	1/22	Evergy Missouri Metro	File No. ER-2022-0129	Return on Equity
Ameren Missouri	03/21	Ameren Missouri	Docket No. ER-2021-0240 Docket No. GR-2021-0241	Return on Equity
Missouri American Water Company	06/20	Missouri American Water Company	Case No. WR-2020-0344 Case No. SR-2020-0345	Return on Equity
Missouri American Water Company	06/17	Missouri American Water Company	Case No. WR-17-0285 Case No. SR-17-0286	Return on Equity
Montana Public Service Commission				
Montana-Dakota Utilities Co.	06/20	Montana-Dakota Utilities Co.	D2022.11.099	Return on Equity
Montana-Dakota Utilities Co.	06/20	Montana-Dakota Utilities Co.	D2020.06.076	Return on Equity
Montana-Dakota Utilities Co.	09/18	Montana-Dakota Utilities Co.	D2018.9.60	Return on Equity
New Hampshire - Board of Tax and Land Appeals				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Public Service Company of New Hampshire d/b/a Eversource Energy	11/19 12/19	Public Service Company of New Hampshire d/b/a Eversource Energy	Master Docket No. 28873-14-15-16-17PT	Valuation of Utility Property and Generating Assets
New Hampshire Public Utilities Commission				
Public Service Company of New Hampshire	05/19	Public Service Company of New Hampshire	DE-19-057	Return on Equity
New Hampshire-Merrimack County Superior Court				
Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	04/18	Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	220-2012-CV-1100	Valuation of Utility Property
New Hampshire-Rockingham Superior Court				
Eversource Energy	05/18	Public Service Commission of New Hampshire	218-2016-CV-00899 218-2017-CV-00917	Valuation of Utility Property
New Jersey Board of Public Utilities				
New Jersey American Water Company, Inc.	01/22	New Jersey American Water Company, Inc.	WR22010019	Return on Equity
Public Service Electric and Gas Company	10/20	Public Service Electric and Gas Company	EO18101115	Return on Equity
New Jersey American Water Company, Inc.	12/19	New Jersey American Water Company, Inc.	WR19121516	Return on Equity
Public Service Electric and Gas Company	04/19	Public Service Electric and Gas Company	EO18060629 GO18060630	Return on Equity
Public Service Electric and Gas Company	02/18	Public Service Electric and Gas Company	GR17070776	Return on Equity
Public Service Electric and Gas Company	01/18	Public Service Electric and Gas Company	ER18010029 GR18010030	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
New Mexico Public Regulation Commission				
Southwestern Public Service Company	07/19	Southwestern Public Service Company	19-00170-UT	Return on Equity
Southwestern Public Service Company	10/17	Southwestern Public Service Company	Case No. 17-00255-UT	Return on Equity
Southwestern Public Service Company	12/16	Southwestern Public Service Company	Case No. 16-00269-UT	Return on Equity
Southwestern Public Service Company	10/15	Southwestern Public Service Company	Case No. 15-00296-UT	Return on Equity
Southwestern Public Service Company	06/15	Southwestern Public Service Company	Case No. 15-00139-UT	Return on Equity
New York State Department of Public Service				
New York State Electric and Gas Company Rochester Gas and Electric	05/22	New York State Electric and Gas Company Rochester Gas and Electric	22-E-0317 22-G-0318 22-E-0319 22-G-0320	Return on Equity
Corning Natural Gas Corporation	07/21	Corning Natural Gas Corporation	Case No. 21-G-0394	Return on Equity
Central Hudson Gas and Electric Corporation	08/20	Central Hudson Gas and Electric Corporation	Electric 20-E-0428 Gas 20-G-0429	Return on Equity
Niagara Mohawk Power Corporation	07/20	National Grid USA	Case No. 20-E-0380 20-G-0381	Return on Equity
Corning Natural Gas Corporation	02/20	Corning Natural Gas Corporation	Case No. 20-G-0101	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/19	New York State Electric and Gas Company Rochester Gas and Electric	19-E-0378 19-G-0379 19-E-0380 19-G-0381	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	04/19	Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	19-G-0309 19-G-0310	Return on Equity
Central Hudson Gas and Electric Corporation	07/17	Central Hudson Gas and Electric Corporation	Electric 17-E-0459 Gas 17-G-0460	Return on Equity
Niagara Mohawk Power Corporation	04/17	National Grid USA	Case No. 17-E-0238 17-G-0239	Return on Equity
Corning Natural Gas Corporation	06/16	Corning Natural Gas Corporation	Case No. 16-G-0369	Return on Equity
National Fuel Gas Company	04/16	National Fuel Gas Company	Case No. 16-G-0257	Return on Equity
KeySpan Energy Delivery	01/16	KeySpan Energy Delivery	Case No. 15-G-0058 Case No. 15-G-0059	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/15	New York State Electric and Gas Company Rochester Gas and Electric	Case No. 15-E-0283 Case No. 15-G-0284 Case No. 15-E-0285 Case No. 15-G-0286	Return on Equity
North Dakota Public Service Commission				
Montana-Dakota Utilities Co.	05/22	Montana-Dakota Utilities Co.	C-PU-22-194	Return on Equity
Montana-Dakota Utilities Co.	08/20	Montana-Dakota Utilities Co.	C-PU-20-379	Return on Equity
Northern States Power Company	12/12	Northern States Power Company	C-PU-12-813	Return on Equity
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity
Oklahoma Corporation Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Oklahoma Gas & Electric	12/21	Oklahoma Gas & Electric	Cause No. PUD 202100164	Return on Equity
Arkansas Oklahoma Gas Corporation	01/13	Arkansas Oklahoma Gas Corporation	Cause No. PUD 201200236	Return on Equity
Oregon Public Service Commission				
PacifiCorp d/b/a Pacific Power & Light	03/22	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-399	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	02/20	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-374	Return on Equity
Pennsylvania Public Utility Commission				
American Water Works Company Inc.	04/22	Pennsylvania-American Water Company	Docket No. R-2020-3031672 (water) Docket No. R-2020-3031673 (wastewater)	Return on Equity
American Water Works Company Inc.	04/20	Pennsylvania-American Water Company	Docket No. R-2020-3019369 (water) Docket No. R-2020-3019371 (wastewater)	Return on Equity
American Water Works Company Inc.	04/17	Pennsylvania-American Water Company	Docket No. R-2017-2595853	Return on Equity
South Dakota Public Utilities Commission				
MidAmerican Energy Company	05/22	MidAmerican Energy Company	D-NG22-005	Return on Equity
Northern States Power Company	06/14	Northern States Power Company	Docket No. EL14-058	Return on Equity
Texas Public Utility Commission				
Entergy Texas, Inc.	07/22	Entergy Texas, Inc.	D-53719	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Southwestern Public Service Commission	08/19	Southwestern Public Service Commission	Docket No. D-49831	Return on Equity
Southwestern Public Service Company	01/14	Southwestern Public Service Company	Docket No. 42004	Return on Equity
Utah Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	05/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20-035-04	Return on Equity
Virginia State Corporation Commission				
Virginia American Water Company, Inc.	11/21	Virginia American Water Company, Inc.	Docket No. PUR-2021-00255	Return on Equity
Virginia American Water Company, Inc.	11/18	Virginia American Water Company, Inc.	Docket No. PUR-2018-00175	Return on Equity
Washington Utilities Transportation Commission				
Cascade Natural Gas Corporation	06/20	Cascade Natural Gas Corporation	Docket No. UG-200568	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	12/19	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-191024	Return on Equity
Cascade Natural Gas Corporation	04/19	Cascade Natural Gas Corporation	Docket No. UG-190210	Return on Equity
West Virginia Public Service Commission				
West Virginia American Water Company	04/21	West Virginia American Water Company	Case No. 21-02369-W-42T	Return on Equity
West Virginia American Water Company	04/18	West Virginia American Water Company	Case No. 18-0573-W-42T Case No. 18-0576-S-42T	Return on Equity
Wisconsin Public Service Commission				
Wisconsin Electric Power Company and Wisconsin Gas LLC	04/22	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-110	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Wisconsin Public Service Corp.	04/22	Wisconsin Public Service Corp.	6690-UR-127	Return on Equity
Alliant Energy		Alliant Energy		Return on Equity
Wisconsin Electric Power Company and Wisconsin Gas LLC	03/19	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-109	Return on Equity
Wisconsin Public Service Corp.	03/19	Wisconsin Public Service Corp.	6690-UR-126	Return on Equity
Wyoming Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	03/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-578-ER-20	Return on Equity
Montana-Dakota Utilities Co.	05/19	Montana-Dakota Utilities Co.	30013-351-GR-19	Return on Equity

CERTIFICATIONS/ACCREDITATIONS

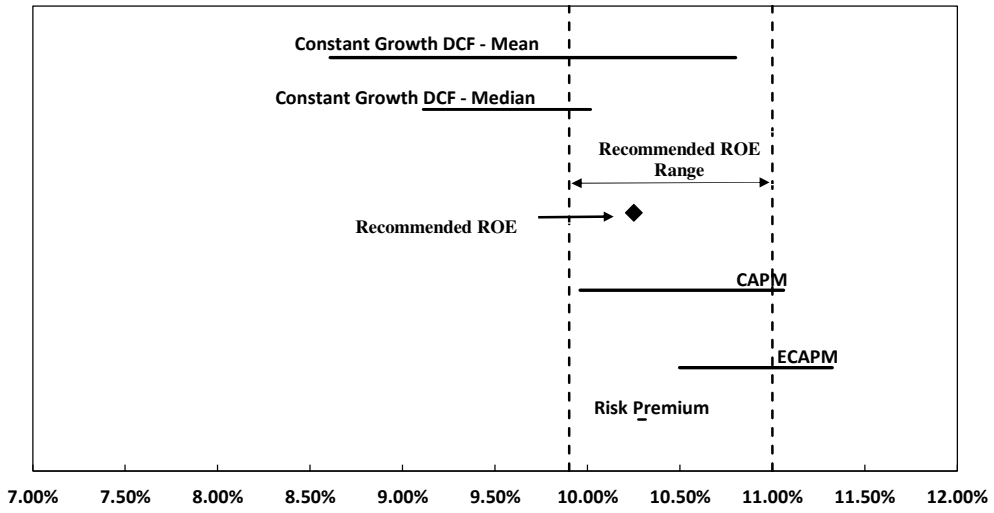
Certified General Appraiser, licensed in the Commonwealth of Massachusetts and the State of New Hampshire

SUMMARY OF COE ANALYTICAL RESULTS

	Constant Growth DCF		
	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Mean Results:			
30-Day Avg. Stock Price	8.65%	9.85%	10.84%
90-Day Avg. Stock Price	8.58%	9.78%	10.77%
180-Day Avg. Stock Price	8.59%	9.79%	10.78%
Average	8.61%	9.80%	10.80%
Median Results:			
30-Day Avg. Stock Price	9.20%	9.62%	10.07%
90-Day Avg. Stock Price	9.09%	9.56%	10.01%
180-Day Avg. Stock Price	9.04%	9.50%	9.98%
Average	9.11%	9.56%	10.02%

	CAPM / ECAPM / Bond Yield Risk Premium		
	Current 30-Day Avg 30-Year Treasury Yield	Near-Term Projected 30-Year Treasury Yield	Longer-Term Projected 30-Year Treasury Yield
CAPM:			
Current *Value Line* Beta	11.05%	11.05%	11.06%

	X	Y
Constant Growth Mean DCF	8.61%	8.0
	9.80%	8.0
	10.80%	8.0
Constant Growth Median DCF	9.11%	7.0
	9.56%	7.0
	10.02%	7.0
CAPM	9.96%	3.5
	11.06%	3.5
ECAPM	10.50%	2.0
	11.32%	2.0
Risk Premium	10.27%	1.0
	10.31%	1.0
Low End ROE Recommendation	9.90%	0.0
	9.90%	9.0
High End ROE Recommendation	11.00%	0.0
	11.00%	9.0
Recommended ROE	10.25%	5.0



PROXY GROUP SCREENING DATA AND RESULTS

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Dividends	S&P Credit Rating Between BBB- and AAA	Covered by More Than 1 Analyst	Positive Growth Rates from at least two sources (Value Line, Yahoo! First Call, and Zacks)	Generation Assets Included in Rate Base	% Company-Owned Generation > 40%	% Regulated Operating Income > 60%	% Regulated Electric Operating Income > 60%	Announced Merger
ALLETE, Inc.	ALE	Yes	BBB	Yes	Yes	Yes	41.54%	95.57%	97.40%	No
Alliant Energy Corporation	LNT	Yes	A-	Yes	Yes	Yes	70.97%	96.60%	91.18%	No
Ameren Corporation	AEE	Yes	BBB+	Yes	Yes	Yes	76.04%	100.00%	85.03%	No
American Electric Power Company, Inc.	AEP	Yes	A-	Yes	Yes	Yes	52.91%	95.43%	100.00%	No
Avista Corporation	AVA	Yes	BBB	Yes	Yes	Yes	59.38%	100.00%	76.10%	No
CMS Energy Corporation	CMS	Yes	BBB+	Yes	Yes	Yes	41.36%	98.76%	68.14%	No
Duke Energy Corporation	DUK	Yes	BBB+	Yes	Yes	Yes	82.34%	99.36%	90.89%	No
Entergy Corporation	ETR	Yes	BBB+	Yes	Yes	Yes	68.34%	100.00%	99.41%	No
IDACORP, Inc.	IDA	Yes	BBB	Yes	Yes	Yes	68.95%	99.84%	100.00%	No
NextEra Energy, Inc.	NEE	Yes	A-	Yes	Yes	Yes	96.85%	85.07%	100.00%	No
NorthWestern Corporation	NWE	Yes	BBB	Yes	Yes	Yes	56.48%	99.75%	84.22%	No
OGE Energy Corporation	OGE	Yes	BBB+	Yes	Yes	Yes	55.06%	100.00%	100.00%	No
Otter Tail Corporation	OTTR	Yes	BBB	Yes	Yes	Yes	55.70%	72.69%	100.00%	No
Portland General Electric Company	POR	Yes	BBB+	Yes	Yes	Yes	60.82%	100.00%	100.00%	No
Southern Company	SO	Yes	BBB+	Yes	Yes	Yes	77.81%	84.58%	80.48%	No
Xcel Energy Inc.	XEL	Yes	A-	Yes	Yes	Yes	57.64%	100.00%	86.47%	No

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional
[3] Source: Yahoo! Finance and Zacks
[4] Source: Yahoo! Finance, Value Line Investment Survey, and Zacks
[5] Source: S&P Capital IQ Pro
[6] Source: S&P Capital IQ Pro
[7] Source: Form 10-K's for 2021, 2020, and 2019
[8] Source: Form 10-K's for 2021, 2020, and 2019
[9] Source: S&P Capital IQ Pro Financial News Releases
[10] OTTR: 2021 Operating Income Data was excluded from the three year average since, as noted by Otter Tail, 2021 operating income was impacted by the plastics segment that is not expected to continue over the long-term term.

30-DAY CONSTANT GROWTH DCF

Company	Ticker	[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Value Line EPS Growth	[6] Yahoo! Finance EPS Growth	[7] Zacks EPS Growth	[8] Average Growth Rate	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.71	$62.25	4.35%	4.51%	6.00%	8.70%	7.30%	7.33%	10.48%	11.85%	13.24%
Alliant Energy Corporation	LNT	$1.81	$52.10	3.47%	3.58%	6.50%	5.55%	6.10%	6.05%	9.12%	9.63%	10.09%
Ameren Corporation	AEE	$2.52	$83.73	3.01%	3.11%	6.50%	6.70%	6.90%	6.70%	9.61%	9.81%	10.01%
American Electric Power Company, Inc.	AEP	$3.32	$89.54	3.71%	3.82%	6.00%	5.76%	6.10%	5.95%	9.57%	9.77%	9.92%
Avista Corporation	AVA	$1.84	$41.27	4.46%	4.56%	3.50%	5.20%	5.20%	4.63%	8.04%	9.20%	9.77%
CMS Energy Corporation	CMS	$1.95	$60.11	3.24%	3.37%	6.50%	8.00%	8.00%	7.50%	9.85%	10.87%	11.37%
Duke Energy Corporation	DUK	$4.02	$95.32	4.22%	4.33%	5.00%	5.30%	5.40%	5.23%	9.32%	9.56%	9.73%
Entergy Corporation	ETR	$4.28	$104.65	4.09%	4.18%	0.50%	6.60%	6.00%	4.37%	4.60%	8.55%	10.82%
IDACORP, Inc.	IDA	$3.16	$104.52	3.02%	3.08%	4.50%	3.00%	3.00%	3.50%	6.07%	6.58%	7.59%
NextEra Energy, Inc.	NEE	$1.87	$74.18	2.52%	2.65%	10.00%	11.00%	9.00%	10.00%	11.63%	12.65%	13.66%
NorthWestern Corporation	NWE	$2.56	$56.51	4.53%	4.60%	3.50%	4.50%	1.70%	3.23%	6.27%	7.84%	9.13%
OGE Energy Corporation	OGE	$1.66	$36.08	4.59%	4.78%	6.50%	Negative	10.20%	8.35%	11.24%	13.13%	15.02%
Otter Tail Corporation	OTTR	$1.75	$70.66	2.48%	2.56%	4.50%	9.00%	n/a	6.75%	7.03%	9.31%	11.59%
Portland General Electric Company	POR	$1.81	$47.26	3.83%	3.93%	5.00%	4.18%	6.10%	5.09%	8.09%	9.02%	10.05%
Southern Company	SO	$2.72	$66.16	4.11%	4.23%	6.50%	7.30%	4.00%	5.93%	8.19%	10.17%	11.56%
Xcel Energy Inc.	XEL	$2.08	$65.29	3.19%	3.29%	6.00%	6.40%	6.60%	6.33%	9.28%	9.62%	9.89%
Mean		$2.50	$69.35	3.68%	3.79%	5.44%	6.48%	6.11%	6.06%	8.65%	9.85%	10.84%
Median		$2.30	$65.72	3.77%	3.87%	6.00%	6.40%	6.10%	6.00%	9.20%	9.62%	10.07%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-day average as of March 31, 2023
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

90-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	$2.71	$62.91	4.31%	4.47%	6.00%	8.70%	7.30%	7.33%	10.44%	11.80%	13.20%
Alliant Energy Corporation	LNT	$1.81	$53.64	3.37%	3.48%	6.50%	5.55%	6.10%	6.05%	9.02%	9.53%	9.98%
Ameren Corporation	AEE	$2.52	$85.87	2.93%	3.03%	6.50%	6.70%	6.90%	6.70%	9.53%	9.73%	9.94%
American Electric Power Company, Inc.	AEP	$3.32	$92.26	3.60%	3.71%	6.00%	5.76%	6.10%	5.95%	9.46%	9.66%	9.81%
Avista Corporation	AVA	$1.84	$41.35	4.45%	4.55%	3.50%	5.20%	5.20%	4.63%	8.03%	9.19%	9.77%
CMS Energy Corporation	CMS	$1.95	$61.34	3.18%	3.30%	6.50%	8.00%	8.00%	7.50%	9.78%	10.80%	11.31%
Duke Energy Corporation	DUK	$4.02	$98.73	4.07%	4.18%	5.00%	5.30%	5.40%	5.23%	9.17%	9.41%	9.58%
Entergy Corporation	ETR	$4.28	$108.15	3.96%	4.04%	0.50%	6.60%	6.00%	4.37%	4.47%	8.41%	10.69%
IDACORP, Inc.	IDA	$3.16	$105.44	3.00%	3.05%	4.50%	3.00%	3.00%	3.50%	6.04%	6.55%	7.56%
NextEra Energy, Inc.	NEE	$1.87	$78.92	2.37%	2.49%	10.00%	11.00%	9.00%	10.00%	11.48%	12.49%	13.50%
NorthWestern Corporation	NWE	$2.56	$56.66	4.52%	4.59%	3.50%	4.50%	1.70%	3.23%	6.26%	7.82%	9.12%
OGE Energy Corporation	OGE	$1.66	$38.15	4.34%	4.52%	6.50%	Negative	10.20%	8.35%	10.98%	12.87%	14.76%
Otter Tail Corporation	OTTR	$1.75	$63.70	2.75%	2.84%	4.50%	9.00%	n/a	6.75%	7.31%	9.59%	11.87%
Portland General Electric Company	POR	$1.81	$47.48	3.81%	3.91%	5.00%	4.18%	6.10%	5.09%	8.07%	9.00%	10.03%
Southern Company	SO	$2.72	$67.39	4.04%	4.16%	6.50%	7.30%	4.00%	5.93%	8.12%	10.09%	11.48%
Xcel Energy Inc.	XEL	$2.08	$67.66	3.07%	3.17%	6.00%	6.40%	6.60%	6.33%	9.17%	9.50%	9.78%
Mean		$2.50	$70.60	3.61%	3.72%	5.44%	6.48%	6.11%	6.06%	8.58%	9.78%	10.77%
Median		$2.30	$65.54	3.71%	3.81%	6.00%	6.40%	6.10%	6.00%	9.09%	9.56%	10.01%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 90-day average as of March 31, 2023
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

180-DAY CONSTANT GROWTH DCF

Company	Ticker	[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Value Line EPS Growth	[6] Yahoo! Finance EPS Growth	[7] Zacks EPS Growth	[8] Average Growth Rate	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.71	$59.61	4.55%	4.71%	6.00%	8.70%	7.30%	7.33%	10.68%	12.05%	13.44%
Alliant Energy Corporation	LNT	$1.81	$54.98	3.29%	3.39%	6.50%	5.55%	6.10%	6.05%	8.93%	9.44%	9.90%
Ameren Corporation	AEE	$2.52	$85.90	2.93%	3.03%	6.50%	6.70%	6.90%	6.70%	9.53%	9.73%	9.94%
American Electric Power Company, Inc.	AEP	$3.32	$92.62	3.58%	3.69%	6.00%	5.76%	6.10%	5.95%	9.45%	9.64%	9.79%
Avista Corporation	AVA	$1.84	$40.35	4.56%	4.67%	3.50%	5.20%	5.20%	4.63%	8.14%	9.30%	9.88%
CMS Energy Corporation	CMS	$1.95	$61.79	3.16%	3.27%	6.50%	8.00%	8.00%	7.50%	9.76%	10.77%	11.28%
Duke Energy Corporation	DUK	$4.02	$98.99	4.06%	4.17%	5.00%	5.30%	5.40%	5.23%	9.16%	9.40%	9.57%
Entergy Corporation	ETR	$4.28	$108.67	3.94%	4.02%	0.50%	6.60%	6.00%	4.37%	4.45%	8.39%	10.67%
IDACORP, Inc.	IDA	$3.16	$104.92	3.01%	3.06%	4.50%	3.00%	3.00%	3.50%	6.06%	6.56%	7.58%
NextEra Energy, Inc.	NEE	$1.87	$80.19	2.33%	2.45%	10.00%	11.00%	9.00%	10.00%	11.44%	12.45%	13.46%
NorthWestern Corporation	NWE	$2.56	$54.32	4.71%	4.79%	3.50%	4.50%	1.70%	3.23%	6.45%	8.02%	9.32%
OGE Energy Corporation	OGE	$1.66	$38.20	4.34%	4.52%	6.50%	Negative	10.20%	8.35%	10.98%	12.87%	14.76%
Otter Tail Corporation	OTTR	$1.75	$65.49	2.67%	2.76%	4.50%	9.00%	n/a	6.75%	7.23%	9.51%	11.79%
Portland General Electric Company	POR	$1.81	$47.54	3.81%	3.90%	5.00%	4.18%	6.10%	5.09%	8.07%	9.00%	10.02%
Southern Company	SO	$2.72	$68.90	3.95%	4.07%	6.50%	7.30%	4.00%	5.93%	8.03%	10.00%	11.39%
Xcel Energy Inc.	XEL	$2.08	$67.99	3.06%	3.16%	6.00%	6.40%	6.60%	6.33%	9.15%	9.49%	9.76%
Mean		$2.50	$70.65	3.62%	3.73%	5.44%	6.48%	6.11%	6.06%	8.59%	9.79%	10.78%
Median		$2.30	$66.74	3.70%	3.80%	6.00%	6.40%	6.10%	6.00%	9.04%	9.50%	9.98%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 180-day average as of March 31, 2023
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

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

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

Company	Ticker	[1] Current 30-day average of 30-year U.S. Treasury bond yield	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	3.81%	0.90	12.11%	8.31%	11.28%	11.49%
Alliant Energy Corporation	LNT	3.81%	0.85	12.11%	8.31%	10.87%	11.18%
Ameren Corporation	AEE	3.81%	0.85	12.11%	8.31%	10.87%	11.18%
American Electric Power Company, Inc.	AEP	3.81%	0.75	12.11%	8.31%	10.04%	10.56%
Avista Corporation	AVA	3.81%	0.90	12.11%	8.31%	11.28%	11.49%
CMS Energy Corporation	CMS	3.81%	0.80	12.11%	8.31%	10.45%	10.87%
Duke Energy Corporation	DUK	3.81%	0.85	12.11%	8.31%	10.87%	11.18%
Entergy Corporation	ETR	3.81%	0.95	12.11%	8.31%	11.70%	11.80%
IDACORP, Inc.	IDA	3.81%	0.80	12.11%	8.31%	10.45%	10.87%
NextEra Energy, Inc.	NEE	3.81%	0.95	12.11%	8.31%	11.70%	11.80%
NorthWestern Corporation	NWE	3.81%	0.90	12.11%	8.31%	11.28%	11.49%
OGE Energy Corporation	OGE	3.81%	1.00	12.11%	8.31%	12.11%	12.11%
Otter Tail Corporation	OTTR	3.81%	0.90	12.11%	8.31%	11.28%	11.49%
Portland General Electric Company	POR	3.81%	0.85	12.11%	8.31%	10.87%	11.18%
Southern Company	SO	3.81%	0.90	12.11%	8.31%	11.28%	11.49%
Xcel Energy Inc.	XEL	3.81%	0.80	12.11%	8.31%	10.45%	10.87%
Mean			0.87			11.05%	11.31%
Median			0.88			11.07%	11.33%

Notes:
[1] Source: Bloomberg Professional, as of March 31, 2023
[2] Source: Value Line
[3] Source: Exhibit AEB-6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

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

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q2 2023 - Q2 2024)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	3.78%	0.90	12.11%	8.33%	11.28%	11.49%
Alliant Energy Corporation	LNT	3.78%	0.85	12.11%	8.33%	10.86%	11.18%
Ameren Corporation	AEE	3.78%	0.85	12.11%	8.33%	10.86%	11.18%
American Electric Power Company, Inc.	AEP	3.78%	0.75	12.11%	8.33%	10.03%	10.55%
Avista Corporation	AVA	3.78%	0.90	12.11%	8.33%	11.28%	11.49%
CMS Energy Corporation	CMS	3.78%	0.80	12.11%	8.33%	10.45%	10.86%
Duke Energy Corporation	DUK	3.78%	0.85	12.11%	8.33%	10.86%	11.18%
Entergy Corporation	ETR	3.78%	0.95	12.11%	8.33%	11.70%	11.80%
IDACORP, Inc.	IDA	3.78%	0.80	12.11%	8.33%	10.45%	10.86%
NextEra Energy, Inc.	NEE	3.78%	0.95	12.11%	8.33%	11.70%	11.80%
NorthWestern Corporation	NWE	3.78%	0.90	12.11%	8.33%	11.28%	11.49%
OGE Energy Corporation	OGE	3.78%	1.00	12.11%	8.33%	12.11%	12.11%
Otter Tail Corporation	OTTR	3.78%	0.90	12.11%	8.33%	11.28%	11.49%
Portland General Electric Company	POR	3.78%	0.85	12.11%	8.33%	10.86%	11.18%
Southern Company	SO	3.78%	0.90	12.11%	8.33%	11.28%	11.49%
Xcel Energy Inc.	XEL	3.78%	0.80	12.11%	8.33%	10.45%	10.86%
Mean						11.05%	11.31%
Median						11.07%	11.33%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 4, March 31, 2023, at 2
[2] Source: Value Line
[3] Source: Exhibit AEB-6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2024 - 2028)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.90%	0.90	12.11%	8.21%	11.29%	11.50%
Alliant Energy Corporation	LNT	3.90%	0.85	12.11%	8.21%	10.88%	11.19%
Ameren Corporation	AEE	3.90%	0.85	12.11%	8.21%	10.88%	11.19%
American Electric Power Company, Inc.	AEP	3.90%	0.75	12.11%	8.21%	10.06%	10.57%
Avista Corporation	AVA	3.90%	0.90	12.11%	8.21%	11.29%	11.50%
CMS Energy Corporation	CMS	3.90%	0.80	12.11%	8.21%	10.47%	10.88%
Duke Energy Corporation	DUK	3.90%	0.85	12.11%	8.21%	10.88%	11.19%
Entergy Corporation	ETR	3.90%	0.95	12.11%	8.21%	11.70%	11.80%
IDACORP, Inc.	IDA	3.90%	0.80	12.11%	8.21%	10.47%	10.88%
NextEra Energy, Inc.	NEE	3.90%	0.95	12.11%	8.21%	11.70%	11.80%
NorthWestern Corporation	NWE	3.90%	0.90	12.11%	8.21%	11.29%	11.50%
OGE Energy Corporation	OGE	3.90%	1.00	12.11%	8.21%	12.11%	12.11%
Otter Tail Corporation	OTTR	3.90%	0.90	12.11%	8.21%	11.29%	11.50%
Portland General Electric Company	POR	3.90%	0.85	12.11%	8.21%	10.88%	11.19%
Southern Company	SO	3.90%	0.90	12.11%	8.21%	11.29%	11.50%
Xcel Energy Inc.	XEL	3.90%	0.80	12.11%	8.21%	10.47%	10.88%
Mean						11.06%	11.32%
Median						11.09%	11.34%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 12, December 2, 2022, at 14
[2] Source: Value Line
[3] Source: Exhibit AEB-6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.81%	0.83	12.11%	8.31%	10.72%	11.06%
Alliant Energy Corporation	LNT	3.81%	0.80	12.11%	8.31%	10.43%	10.85%
Ameren Corporation	AEE	3.81%	0.76	12.11%	8.31%	10.11%	10.61%
American Electric Power Company, Inc.	AEP	3.81%	0.77	12.11%	8.31%	10.17%	10.66%
Avista Corporation	AVA	3.81%	0.76	12.11%	8.31%	10.09%	10.59%
CMS Energy Corporation	CMS	3.81%	0.76	12.11%	8.31%	10.09%	10.59%
Duke Energy Corporation	DUK	3.81%	0.72	12.11%	8.31%	9.83%	10.40%
Entergy Corporation	ETR	3.81%	0.86	12.11%	8.31%	10.93%	11.23%
IDACORP, Inc.	IDA	3.81%	0.80	12.11%	8.31%	10.49%	10.89%
NextEra Energy, Inc.	NEE	3.81%	0.82	12.11%	8.31%	10.63%	11.00%
NorthWestern Corporation	NWE	3.81%	0.86	12.11%	8.31%	10.97%	11.26%
OGE Energy Corporation	OGE	3.81%	0.93	12.11%	8.31%	11.52%	11.67%
Otter Tail Corporation	OTTR	3.81%	0.88	12.11%	8.31%	11.14%	11.38%
Portland General Electric Company	POR	3.81%	0.79	12.11%	8.31%	10.36%	10.80%
Southern Company	SO	3.81%	0.78	12.11%	8.31%	10.27%	10.73%
Xcel Energy Inc.	XEL	3.81%	0.75	12.11%	8.31%	10.03%	10.55%
Mean						10.49%	10.89%
Median						10.40%	10.83%

Notes:
[1] Source: Bloomberg Professional, as of March 31, 2023
[2] Source: Bloomberg Professional, based on 10-year weekly returns
[3] Source: Exhibit AEB-6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q2 2023 - Q2 2024)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.78%	0.83	12.11%	8.33%	10.71%	11.06%
Alliant Energy Corporation	LNT	3.78%	0.80	12.11%	8.33%	10.42%	10.85%
Ameren Corporation	AEE	3.78%	0.76	12.11%	8.33%	10.10%	10.60%
American Electric Power Company, Inc.	AEP	3.78%	0.77	12.11%	8.33%	10.17%	10.65%
Avista Corporation	AVA	3.78%	0.76	12.11%	8.33%	10.08%	10.59%
CMS Energy Corporation	CMS	3.78%	0.76	12.11%	8.33%	10.08%	10.59%
Duke Energy Corporation	DUK	3.78%	0.72	12.11%	8.33%	9.82%	10.39%
Entergy Corporation	ETR	3.78%	0.86	12.11%	8.33%	10.93%	11.22%
IDACORP, Inc.	IDA	3.78%	0.80	12.11%	8.33%	10.48%	10.89%
NextEra Energy, Inc.	NEE	3.78%	0.82	12.11%	8.33%	10.63%	11.00%
NorthWestern Corporation	NWE	3.78%	0.86	12.11%	8.33%	10.97%	11.26%
OGE Energy Corporation	OGE	3.78%	0.93	12.11%	8.33%	11.51%	11.66%
Otter Tail Corporation	OTTR	3.78%	0.88	12.11%	8.33%	11.13%	11.38%
Portland General Electric Company	POR	3.78%	0.79	12.11%	8.33%	10.36%	10.80%
Southern Company	SO	3.78%	0.78	12.11%	8.33%	10.26%	10.73%
Xcel Energy Inc.	XEL	3.78%	0.75	12.11%	8.33%	10.02%	10.54%
Mean						10.48%	10.89%
Median						10.39%	10.82%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 4, March 31, 2023, at 2
[2] Source: Bloomberg Professional, based on 10-year weekly returns
[3] Source: Exhibit AEB-6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2024 - 2028)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.90%	0.83	12.11%	8.21%	10.73%	11.08%
Alliant Energy Corporation	LNT	3.90%	0.80	12.11%	8.21%	10.45%	10.86%
Ameren Corporation	AEE	3.90%	0.76	12.11%	8.21%	10.13%	10.63%
American Electric Power Company, Inc.	AEP	3.90%	0.77	12.11%	8.21%	10.20%	10.68%
Avista Corporation	AVA	3.90%	0.76	12.11%	8.21%	10.11%	10.61%
CMS Energy Corporation	CMS	3.90%	0.76	12.11%	8.21%	10.11%	10.61%
Duke Energy Corporation	DUK	3.90%	0.72	12.11%	8.21%	9.85%	10.42%
Entergy Corporation	ETR	3.90%	0.86	12.11%	8.21%	10.94%	11.24%
IDACORP, Inc.	IDA	3.90%	0.80	12.11%	8.21%	10.51%	10.91%
NextEra Energy, Inc.	NEE	3.90%	0.82	12.11%	8.21%	10.65%	11.02%
NorthWestern Corporation	NWE	3.90%	0.86	12.11%	8.21%	10.99%	11.27%
OGE Energy Corporation	OGE	3.90%	0.93	12.11%	8.21%	11.52%	11.67%
Otter Tail Corporation	OTTR	3.90%	0.88	12.11%	8.21%	11.15%	11.39%
Portland General Electric Company	POR	3.90%	0.79	12.11%	8.21%	10.38%	10.82%
Southern Company	SO	3.90%	0.78	12.11%	8.21%	10.29%	10.75%
Xcel Energy Inc.	XEL	3.90%	0.75	12.11%	8.21%	10.05%	10.57%
Mean						10.50%	10.91%
Median						10.42%	10.84%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 12, December 2, 2022, at 14
[2] Source: Bloomberg Professional, based on 10-year weekly returns
[3] Source: Exhibit AEB-6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.81%	0.79	12.11%	8.31%	10.33%	10.77%
Alliant Energy Corporation	LNT	3.81%	0.75	12.11%	8.31%	10.04%	10.56%
Ameren Corporation	AEE	3.81%	0.73	12.11%	8.31%	9.83%	10.40%
American Electric Power Company, Inc.	AEP	3.81%	0.68	12.11%	8.31%	9.41%	10.09%
Avista Corporation	AVA	3.81%	0.79	12.11%	8.31%	10.33%	10.77%
CMS Energy Corporation	CMS	3.81%	0.69	12.11%	8.31%	9.54%	10.18%
Duke Energy Corporation	DUK	3.81%	0.67	12.11%	8.31%	9.33%	10.03%
Entergy Corporation	ETR	3.81%	0.75	12.11%	8.31%	9.99%	10.52%
IDACORP, Inc.	IDA	3.81%	0.73	12.11%	8.31%	9.87%	10.43%
NextEra Energy, Inc.	NEE	3.81%	0.73	12.11%	8.31%	9.87%	10.43%
NorthWestern Corporation	NWE	3.81%	0.75	12.11%	8.31%	9.99%	10.52%
OGE Energy Corporation	OGE	3.81%	0.93	12.11%	8.31%	11.53%	11.68%
Otter Tail Corporation	OTTR	3.81%	0.85	12.11%	8.31%	10.87%	11.18%
Portland General Electric Company	POR	3.81%	0.75	12.11%	8.31%	10.04%	10.56%
Southern Company	SO	3.81%	0.66	12.11%	8.31%	9.25%	9.96%
Xcel Energy Inc.	XEL	3.81%	0.66	12.11%	8.31%	9.25%	9.96%
Mean						9.97%	10.50%
Median						9.93%	10.48%

Notes:
[1] Source: Bloomberg Professional, as of March 31, 2023
[2] Source: Exhibit AEB-5
[3] Source: Exhibit AEB-6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q2 2023 - Q2 2024)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.78%	0.79	12.11%	8.33%	10.32%	10.77%
Alliant Energy Corporation	LNT	3.78%	0.75	12.11%	8.33%	10.03%	10.55%
Ameren Corporation	AEE	3.78%	0.73	12.11%	8.33%	9.82%	10.39%
American Electric Power Company, Inc.	AEP	3.78%	0.68	12.11%	8.33%	9.40%	10.08%
Avista Corporation	AVA	3.78%	0.79	12.11%	8.33%	10.32%	10.77%
CMS Energy Corporation	CMS	3.78%	0.69	12.11%	8.33%	9.53%	10.18%
Duke Energy Corporation	DUK	3.78%	0.67	12.11%	8.33%	9.32%	10.02%
Entergy Corporation	ETR	3.78%	0.75	12.11%	8.33%	9.99%	10.52%
IDACORP, Inc.	IDA	3.78%	0.73	12.11%	8.33%	9.86%	10.43%
NextEra Energy, Inc.	NEE	3.78%	0.73	12.11%	8.33%	9.86%	10.43%
NorthWestern Corporation	NWE	3.78%	0.75	12.11%	8.33%	9.99%	10.52%
OGE Energy Corporation	OGE	3.78%	0.93	12.11%	8.33%	11.53%	11.68%
Otter Tail Corporation	OTTR	3.78%	0.85	12.11%	8.33%	10.86%	11.18%
Portland General Electric Company	POR	3.78%	0.75	12.11%	8.33%	10.03%	10.55%
Southern Company	SO	3.78%	0.66	12.11%	8.33%	9.24%	9.96%
Xcel Energy Inc.	XEL	3.78%	0.66	12.11%	8.33%	9.24%	9.96%
Mean						9.96%	10.50%
Median						9.93%	10.47%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 4, March 31, 2023, at 2
[2] Source: Exhibit AEB-5
[3] Source: Exhibit AEB-6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2024 - 2028)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.90%	0.79	12.11%	8.21%	10.35%	10.79%
Alliant Energy Corporation	LNT	3.90%	0.75	12.11%	8.21%	10.06%	10.57%
Ameren Corporation	AEE	3.90%	0.73	12.11%	8.21%	9.85%	10.42%
American Electric Power Company, Inc.	AEP	3.90%	0.68	12.11%	8.21%	9.44%	10.11%
Avista Corporation	AVA	3.90%	0.79	12.11%	8.21%	10.35%	10.79%
CMS Energy Corporation	CMS	3.90%	0.69	12.11%	8.21%	9.57%	10.20%
Duke Energy Corporation	DUK	3.90%	0.67	12.11%	8.21%	9.36%	10.05%
Entergy Corporation	ETR	3.90%	0.75	12.11%	8.21%	10.02%	10.54%
IDACORP, Inc.	IDA	3.90%	0.73	12.11%	8.21%	9.90%	10.45%
NextEra Energy, Inc.	NEE	3.90%	0.73	12.11%	8.21%	9.90%	10.45%
NorthWestern Corporation	NWE	3.90%	0.75	12.11%	8.21%	10.02%	10.54%
OGE Energy Corporation	OGE	3.90%	0.93	12.11%	8.21%	11.54%	11.68%
Otter Tail Corporation	OTTR	3.90%	0.85	12.11%	8.21%	10.88%	11.19%
Portland General Electric Company	POR	3.90%	0.75	12.11%	8.21%	10.06%	10.57%
Southern Company	SO	3.90%	0.66	12.11%	8.21%	9.28%	9.99%
Xcel Energy Inc.	XEL	3.90%	0.66	12.11%	8.21%	9.28%	9.99%
Mean						9.99%	10.52%
Median						9.96%	10.50%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 12, December 2, 2022, at 14
[2] Source: Exhibit AEB-5
[3] Source: Exhibit AEB-6
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

HISTORICAL BETA - 2013 - 2022

Company	Ticker	[1] 12/31/2013	[2] 12/31/2014	[3] 12/31/2015	[4] 12/31/2016	[5] 12/31/2017	[6] 12/31/2018	[7] 12/31/2019	[8] 12/31/2020	[9] 12/31/2021	[10] 12/31/2022	[11] Average
ALLETE, Inc.	ALE	0.75	0.80	0.80	0.75	0.80	0.65	0.65	0.85	0.90	0.90	0.79
Alliant Energy Corporation	LNT	0.75	0.80	0.80	0.70	0.70	0.60	0.60	0.85	0.85	0.85	0.75
Ameren Corporation	AEE	0.80	0.75	0.75	0.65	0.70	0.55	0.55	0.85	0.80	0.85	0.73
American Electric Power Company, Inc.	AEP	0.70	0.70	0.70	0.65	0.65	0.55	0.55	0.75	0.75	0.75	0.68
Avista Corporation	AVA	0.75	0.80	0.80	0.70	0.75	0.65	0.60	0.95	0.95	0.90	0.79
CMS Energy Corporation	CMS	0.70	0.70	0.75	0.65	0.65	0.55	0.50	0.80	0.80	0.80	0.69
Duke Energy Corporation	DUK	0.65	0.60	0.65	0.60	0.60	0.50	0.50	0.85	0.85	0.85	0.67
Entergy Corporation	ETR	0.70	0.70	0.70	0.65	0.65	0.60	0.60	0.95	0.95	0.95	0.75
IDACORP, Inc.	IDA	0.75	0.80	0.80	0.75	0.70	0.55	0.55	0.80	0.80	0.80	0.73
NextEra Energy, Inc.	NEE	0.70	0.70	0.75	0.65	0.65	0.55	0.55	0.90	0.90	0.95	0.73
NorthWestern Corporation	NWE	0.70	0.70	0.70	0.70	0.70	0.55	0.60	0.95	0.95	0.90	0.75
OGE Energy Corporation	OGE	0.85	0.90	0.95	0.90	0.95	0.85	0.75	1.10	1.05	1.00	0.93
Otter Tail Corporation	OTTR	0.95	0.90	0.85	0.85	0.90	0.75	0.70	0.85	0.90	0.85	0.85
Portland General Electric Company	POR	0.75	0.80	0.80	0.70	0.70	0.60	0.55	0.85	0.90	0.85	0.75
Southern Company	SO	0.55	0.55	0.60	0.55	0.55	0.50	0.50	0.90	0.95	0.90	0.66
Xcel Energy Inc.	XEL	0.65	0.65	0.65	0.60	0.60	0.50	0.50	0.80	0.80	0.80	0.66
Mean		0.73	0.74	0.75	0.69	0.70	0.59	0.58	0.88	0.88	0.87	0.74

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

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

[1] Estimated Weighted Average Dividend Yield	1.76%
[2] Estimated Weighted Average Long-Term Growth Rate	10.26%
[3] S&P 500 Estimated Required Market Return	12.11%

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	325.99	93.89	30,607.39	0.11%	5.07%	0.01%	3.00%	0.00%
American Express Co	AXP	744.07	164.95	122,733.69	0.43%	1.45%	0.01%	10.00%	0.04%
Verizon Communications Inc	VZ	4,200.00	38.89	163,338.00	0.57%	6.71%	0.04%	2.50%	0.01%
Broadcom Inc	AVGO	416.92	641.54	267,473.42		2.87%		30.00%	
Boeing Co/The	BA	599.18	212.43	127,283.17					
Caterpillar Inc	CAT	516.35	228.84	118,160.39	0.42%	2.10%	0.01%	10.50%	0.04%
JPMorgan Chase & Co	JPM	2,943.36	130.31	383,548.59	1.35%	3.07%	0.04%	5.00%	0.07%
Chevron Corp	CVX	1,906.67	163.16	311,092.93		3.70%		45.00%	
Coca-Cola Co/The	KO	4,326.31	62.03	268,360.76	0.94%	2.97%	0.03%	8.00%	0.08%
AbbVie Inc	ABBV	1,769.40	159.37	281,989.28	0.99%	3.71%	0.04%	2.00%	0.02%
Walt Disney Co/The	DIS	1,826.83	100.13	182,919.99				86.00%	
FleetCor Technologies Inc	FLT	73.49	210.85	15,495.79	0.05%			10.50%	0.01%
Extra Space Storage Inc	EXR	134.99	162.93	21,993.11	0.08%	3.98%	0.00%	6.50%	0.01%
Exxon Mobil Corp	XOM	4,070.99	109.66	446,424.22		3.32%			
Phillips 66	PSX	460.91	101.38	46,727.36		4.14%			
General Electric Co	GE	1,090.28	95.60	104,231.05		0.33%		21.00%	
HP Inc	HPQ	985.33	29.35	28,919.38	0.10%	3.58%	0.00%	12.50%	0.01%
Home Depot Inc/The	HD	1,014.96	295.12	299,533.81	1.05%	2.83%	0.03%	9.00%	0.09%
Monolithic Power Systems Inc	MPWR	47.31	500.54	23,678.04		0.80%		21.00%	
International Business Machines Corp	IBM	907.11	131.09	118,912.53	0.42%	5.03%	0.02%	3.00%	0.01%
Johnson & Johnson	JNJ	2,604.29	155.00	403,664.33	1.42%	2.92%	0.04%	8.00%	0.11%
McDonald's Corp	MCD	731.50	279.61	204,533.88	0.72%	2.17%	0.02%	9.00%	0.06%
Merck & Co Inc	MRK	2,538.59	106.39	270,080.80	0.95%	2.74%	0.03%	8.50%	0.08%
3M Co	MMM	551.47	105.11	57,964.91	0.20%	5.71%	0.01%	7.50%	0.02%
American Water Works Co Inc	AWK	194.64	146.49	28,513.25	0.10%	1.79%	0.00%	3.00%	0.00%
Bank of America Corp	BAC	8,003.84	28.60	228,909.80	0.80%	3.08%	0.02%	8.50%	0.07%
Pfizer Inc	PFE	5,644.40	40.80	230,291.60	0.81%	4.02%	0.03%	2.00%	0.02%
Procter & Gamble Co/The	PG	2,359.14	148.69	350,781.12	1.23%	2.46%	0.03%	5.50%	0.07%
AT&T Inc	T	7,129.87	19.25	137,250.00	0.48%	5.77%	0.03%	1.00%	0.00%
Travelers Cos Inc/The	TRV	232.09	171.41	39,783.23	0.14%	2.17%	0.00%	7.50%	0.01%
Raytheon Technologies Corp	RTX	1,463.21	97.93	143,291.96	0.50%	2.25%	0.01%	14.00%	0.07%
Analog Devices Inc	ADI	505.85	197.22	99,764.13	0.35%	1.74%	0.01%	11.50%	0.04%
Walmart Inc	WMT	2,695.66	147.45	397,474.48	1.40%	1.55%	0.02%	7.50%	0.10%
Cisco Systems Inc	CSCO	4,095.82	52.28	214,109.15	0.75%	2.98%	0.02%	8.50%	0.06%
Intel Corp	INTC	4,137.00	32.67	135,155.79		1.53%			
General Motors Co	GM	1,394.64	36.68	51,155.29	0.18%	0.98%	0.00%	8.50%	0.02%
Microsoft Corp	MSFT	7,443.80	288.30	2,146,048.69	7.55%	0.94%	0.07%	15.00%	1.13%
Dollar General Corp	DG	219.11	210.46	46,113.47	0.16%	1.12%	0.00%	10.00%	0.02%
Cigna Group/The	CI	297.03	255.53	75,900.84	0.27%	1.93%	0.01%	10.00%	0.03%
Kinder Morgan Inc	KMI	2,248.00	17.51	39,362.53	0.14%	6.34%	0.01%	18.50%	0.03%
Citigroup Inc	C	1,946.47	46.89	91,269.74	0.32%	4.35%	0.01%	3.50%	0.01%
American International Group Inc	AIG	733.67	50.36	36,947.52	0.13%	2.54%	0.00%	6.50%	0.01%
Altria Group Inc	MO	1,785.56	44.62	79,671.87	0.28%	8.43%	0.02%	6.00%	0.02%
HCA Healthcare Inc	HCA	277.26	263.68	73,106.60	0.26%	0.91%	0.00%	12.50%	0.03%
International Paper Co	IP	349.37	36.06	12,598.14	0.04%	5.13%	0.00%	9.50%	0.00%
Hewlett Packard Enterprise Co	HPE	1,295.87	15.93	20,643.19	0.07%	3.01%	0.00%	7.50%	0.01%
Abbott Laboratories	ABT	1,737.95	101.26	175,984.41	0.62%	2.01%	0.01%	6.50%	0.04%
Aflac Inc	AFL	611.71	64.52	39,467.40	0.14%	2.60%	0.00%	8.00%	0.01%
Air Products and Chemicals Inc	APD	222.08	287.21	63,784.46	0.22%	2.44%	0.01%	11.50%	0.03%
Royal Caribbean Cruises Ltd	RCL	255.35	65.30	16,674.42					
Hess Corp	HES	306.18	132.34	40,519.86		1.32%			
Archer-Daniels-Midland Co	ADM	546.45	79.66	43,529.81	0.15%	2.26%	0.00%	13.00%	0.02%
Automatic Data Processing Inc	ADP	414.35	222.63	92,247.19	0.32%	2.25%	0.01%	10.00%	0.03%
Verisk Analytics Inc	VRSK	154.70	191.86	29,679.97	0.10%	0.71%	0.00%	13.00%	0.01%
AutoZone Inc	AZO	18.40	2,458.15	45,225.04	0.16%			14.50%	0.02%
Avery Dennison Corp	AVY	81.11	178.93	14,512.83	0.05%	1.68%	0.00%	9.50%	0.00%
Enphase Energy Inc	ENPH	136.50	210.28	28,702.59				24.50%	
MSCI Inc	MSCI	80.06	559.69	44,810.46	0.16%	0.99%	0.00%	12.50%	0.02%
Ball Corp	BALL	314.40	55.11	17,326.31		1.45%		21.50%	
Ceridian HCM Holding Inc	CDAY	152.70	73.22	11,180.47					
Carrier Global Corp	CARR	834.95	45.75	38,199.01		1.62%			
Bank of New York Mellon Corp/The	BK	808.45	45.44	36,735.74	0.13%	3.26%	0.00%	6.00%	0.01%
Otis Worldwide Corp	OTIS	414.87	84.40	35,014.94		1.37%			
Baxter International Inc	BAX	505.52	40.56	20,504.01	0.07%	2.86%	0.00%	7.00%	0.01%
Becton Dickinson & Co	BDX	283.90	247.54	70,277.10	0.25%	1.47%	0.00%	4.50%	0.01%
Berkshire Hathaway Inc	BRK/B	1,298.19	308.77	400,842.13	1.41%			6.00%	0.08%
Best Buy Co Inc	BBY	218.05	78.27	17,066.46	0.06%	4.70%	0.00%	4.00%	0.00%
Boston Scientific Corp	BSX	1,437.33	50.03	71,909.52	0.25%			15.50%	0.04%
Bristol-Myers Squibb Co	BMY	2,098.78	69.31	145,466.16		3.29%			
Brown-Forman Corp	BF/B	310.00	64.27	19,923.76	0.07%	1.28%	0.00%	14.50%	0.01%
Coterra Energy Inc	CTRA	765.50	24.54	18,785.47		9.29%			
Campbell Soup Co	CPB	299.48	54.98	16,465.19	0.06%	2.69%	0.00%	5.00%	0.00%
Hilton Worldwide Holdings Inc	HLT	266.45	140.87	37,534.95		0.43%			
Carnival Corp	CCL	1,113.48	10.15	11,301.82					
Qorvo Inc	QRVO	99.89	101.57	10,145.73	0.04%			14.50%	0.01%
UDR Inc	UDR	329.17	41.06	13,515.56	0.05%	4.09%	0.00%	17.00%	0.01%
Clorox Co/The	CLX	123.53	158.24	19,546.60	0.07%	2.98%	0.00%	7.00%	0.00%
Paycom Software Inc	PAYC	60.31	304.01	18,333.63				21.00%	
CMS Energy Corp	CMS	291.26	61.38	17,877.78	0.06%	3.18%	0.00%	6.50%	0.00%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Value Line Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Newell Brands Inc	NWL	413.60	12.44	5,145.18		7.40%			
Colgate-Palmolive Co	CL	832.14	75.15	62,535.17	0.22%	2.55%	0.01%	6.00%	0.01%
EPAM Systems Inc	EPAM	57.68	299.00	17,245.72				20.50%	
Comerica Inc	CMA	131.51	43.42	5,710.34	0.02%	6.54%	0.00%	8.50%	0.00%
Conagra Brands Inc	CAG	476.62	37.56	17,901.96	0.06%	3.51%	0.00%	3.50%	0.00%
Consolidated Edison Inc	ED	355.05	95.67	33,967.16	0.12%	3.39%	0.00%	4.50%	0.01%
Corning Inc	GLW	847.23	35.28	29,890.34	0.11%	3.17%	0.00%	17.50%	0.02%
Cummins Inc	CMI	141.54	238.88	33,811.08	0.12%	2.63%	0.00%	8.50%	0.01%
Caesars Entertainment Inc	CZR	215.18	48.81	10,502.98					
Danaher Corp	DHR	728.58	252.04	183,630.55	0.65%	0.43%	0.00%	16.00%	0.10%
Target Corp	TGT	460.36	165.63	76,250.09	0.27%	2.61%	0.01%	12.00%	0.03%
Deere & Co	DE	296.32	412.88	122,345.43	0.43%	1.21%	0.01%	12.50%	0.05%
Dominion Energy Inc	D	835.25	55.91	46,698.88	0.16%	4.78%	0.01%	4.00%	0.01%
Dover Corp	DOV	139.77	151.94	21,236.81	0.07%	1.33%	0.00%	9.00%	0.01%
Alliant Energy Corp	LNT	251.14	53.40	13,410.77	0.05%	3.39%	0.00%	6.00%	0.00%
Steel Dynamics Inc	STLD	171.58	113.06	19,398.61	0.07%	1.50%	0.00%	2.00%	0.00%
Duke Energy Corp	DUK	770.65	96.47	74,344.41	0.26%	4.17%	0.01%	5.00%	0.01%
Regency Centers Corp	REG	171.31	61.18	10,480.62	0.04%	4.25%	0.00%	10.50%	0.00%
Eaton Corp PLC	ETN	398.00	171.34	68,193.32	0.24%	2.01%	0.00%	12.00%	0.03%
Ecolab Inc	ECL	284.67	165.53	47,121.26	0.17%	1.28%	0.00%	6.00%	0.01%
PerkinElmer Inc	PKI	126.41	133.26	16,845.66	0.06%	0.21%	0.00%	4.00%	0.00%
Emerson Electric Co	EMR	571.40	87.14	49,791.80	0.18%	2.39%	0.00%	6.50%	0.01%
EOG Resources Inc	EOG	587.72	114.63	67,370.80		2.88%		26.00%	
Aon PLC	AON	205.14	315.29	64,679.22	0.23%	0.71%	0.00%	7.50%	0.02%
Entergy Corp	ETR	212.09	107.74	22,850.68	0.08%	3.97%	0.00%	0.50%	0.00%
Equifax Inc	EFX	123.23	202.84	24,995.36	0.09%	0.77%	0.00%	7.00%	0.01%
EQT Corp	EQT	360.36	31.91	11,499.09		1.88%			
IQVIA Holdings Inc	IQV	186.14	198.89	37,021.58	0.13%			14.50%	0.02%
Gartner Inc	IT	79.06	325.77	25,755.70	0.09%			17.50%	0.02%
FedEx Corp	FDX	251.35	228.49	57,431.42	0.20%	2.01%	0.00%	9.00%	0.02%
FMC Corp	FMC	125.14	122.13	15,283.59	0.05%	1.90%	0.00%	10.50%	0.01%
Brown & Brown Inc	BRO	283.70	57.42	16,289.94	0.06%	0.80%	0.00%	8.00%	0.00%
Ford Motor Co	F	3,915.33	12.60	49,333.16		4.76%		27.50%	
NextEra Energy Inc	NEE	1,987.50	77.08	153,196.11	0.54%	2.43%	0.01%	10.00%	0.05%
Franklin Resources Inc	BEN	500.36	26.94	13,479.64	0.05%	4.45%	0.00%	3.50%	0.00%
Garmin Ltd	GRMN	191.36	100.92	19,311.95	0.07%	2.89%	0.00%	5.00%	0.00%
Freeport-McMoRan Inc	FCX	1,430.69	40.91	58,529.69	0.21%	1.47%	0.00%	18.50%	0.04%
Dexcom Inc	DXCM	386.41	116.18	44,893.58					
General Dynamics Corp	GD	274.71	228.21	62,692.48	0.22%	2.31%	0.01%	9.50%	0.02%
General Mills Inc	GIS	587.35	85.46	50,195.27	0.18%	2.53%	0.00%	4.00%	0.01%
Genuine Parts Co	GPC	140.81	167.31	23,558.75	0.08%	2.27%	0.00%	10.50%	0.01%
Atmos Energy Corp	ATO	143.16	112.36	16,085.79	0.06%	2.63%	0.00%	7.00%	0.00%
WW Grainger Inc	GWW	50.26	688.81	34,621.66	0.12%	1.00%	0.00%	9.00%	0.01%
Halliburton Co	HAL	904.08	31.64	28,605.12		2.02%		32.50%	
L3Harris Technologies Inc	LHX	189.96	196.24	37,277.16	0.13%	2.32%	0.00%	17.00%	0.02%
Healthpeak Properties Inc	PEAK	546.99	21.97	12,017.44	0.04%	5.46%	0.00%	14.50%	0.01%
Insulet Corp	PODD	69.54	318.96	22,181.12					
Catalent Inc	CTLT	180.09	65.71	11,833.71				21.00%	
Fortive Corp	FTV	353.20	68.17	24,077.58	0.08%	0.41%	0.00%	12.00%	0.01%
Hershey Co/The	HSY	146.92	254.41	37,378.43	0.13%	1.63%	0.00%	9.00%	0.01%
Synchrony Financial	SYF	437.04	29.08	12,708.98	0.04%	3.16%	0.00%	9.50%	0.00%
Hormel Foods Corp	HRL	546.53	39.88	21,795.74	0.08%	2.76%	0.00%	7.50%	0.01%
Arthur J Gallagher & Co	AJG	214.08	191.31	40,954.69	0.14%	1.15%	0.00%	18.50%	0.03%
Mondelez International Inc	MDLZ	1,363.31	69.72	95,049.76	0.33%	2.21%	0.01%	7.50%	0.03%
CenterPoint Energy Inc	CNP	629.43	29.46	18,543.07	0.07%	2.58%	0.00%	6.50%	0.00%
Humana Inc	HUM	124.98	485.46	60,670.36	0.21%	0.73%	0.00%	12.50%	0.03%
Willis Towers Watson PLC	WTW	106.58	232.38	24,766.60	0.09%	1.45%	0.00%	8.50%	0.01%
Illinois Tool Works Inc	ITW	304.82	243.45	74,208.67	0.26%	2.15%	0.01%	11.00%	0.03%
CDW Corp/DE	CDW	135.59	194.89	26,425.52	0.09%	1.21%	0.00%	8.50%	0.01%
Trane Technologies PLC	TT	229.08	183.98	42,145.22		1.63%			
Interpublic Group of Cos Inc/The	IPG	385.11	37.24	14,341.42	0.05%	3.33%	0.00%	10.00%	0.01%
International Flavors & Fragrances Inc	IFF	255.07	91.96	23,455.96	0.08%	3.52%	0.00%	6.00%	0.00%
Generac Holdings Inc	GNRC	61.89	108.01	6,684.41	0.02%			19.00%	0.00%
NXP Semiconductors NV	NXPI	259.52	186.48	48,393.81	0.17%	2.18%	0.00%	11.00%	0.02%
Kellogg Co	K	342.67	66.96	22,945.05	0.08%	3.52%	0.00%	3.50%	0.00%
Broadridge Financial Solutions Inc	BR	117.69	146.57	17,250.26	0.06%	1.98%	0.00%	8.50%	0.01%
Kimberly-Clark Corp	KMB	337.45	134.22	45,293.08	0.16%	3.52%	0.01%	7.00%	0.01%
Kimco Realty Corp	KIM	618.46	19.53	12,078.54	0.04%	4.71%	0.00%	11.00%	0.00%
Oracle Corp	ORCL	2,699.80	92.92	250,865.60	0.88%	1.72%	0.02%	10.00%	0.09%
Kroger Co/The	KR	717.47	49.37	35,421.40	0.12%	2.11%	0.00%	6.50%	0.01%
Lennar Corp	LEN	252.47	105.11	26,536.70	0.09%	1.43%	0.00%	8.50%	0.01%
Eli Lilly & Co	LLY	950.30	343.42	326,350.65	1.15%	1.32%	0.02%	11.50%	0.13%
Bath & Body Works Inc	BBWI	228.77	36.58	8,368.26		2.19%		26.50%	
Charter Communications Inc	CHTR	152.65	357.61	54,589.52	0.19%			15.50%	0.03%
Lincoln National Corp	LNC	169.22	22.47	3,802.40		8.01%		30.50%	
Loews Corp	L	230.88	58.02	13,395.43	0.05%	0.43%	0.00%	18.50%	0.01%
Lowe's Cos Inc	LOW	596.36	199.97	119,253.31	0.42%	2.10%	0.01%	11.00%	0.05%
IDEX Corp	IEX	75.52	231.03	17,446.92	0.06%	1.04%	0.00%	11.00%	0.01%
Marsh & McLennan Cos Inc	MMC	494.57	166.55	82,370.80	0.29%	1.42%	0.00%	11.00%	0.03%
Masco Corp	MAS	225.20	49.72	11,197.09	0.04%	2.29%	0.00%	8.00%	0.00%
S&P Global Inc	SPGI	327.95	344.77	113,066.29	0.40%	1.04%	0.00%	6.50%	0.03%
Medtronic PLC	MDT	1,330.42	80.62	107,258.78	0.38%	3.37%	0.01%	7.50%	0.03%
Viatris Inc	VTRS	1,196.81	9.62	11,513.35		4.99%			
CVS Health Corp	CVS	1,284.11	74.31	95,422.36	0.34%	3.26%	0.01%	6.00%	0.02%
DuPont de Nemours Inc	DD	458.34	71.77	32,894.92	0.12%	2.01%	0.00%	10.00%	0.01%
Micron Technology Inc	MU	1,094.39	60.34	66,035.73	0.23%	0.76%	0.00%	9.50%	0.02%
Motorola Solutions Inc	MSI	167.47	286.13	47,917.33	0.17%	1.23%	0.00%	10.50%	0.02%
Cboe Global Markets Inc	CBOE	105.74	134.24	14,194.94	0.05%	1.49%	0.00%	10.00%	0.00%
Laboratory Corp of America Holdings	LH	88.50	229.42	20,303.90	0.07%	1.26%	0.00%	1.50%	0.00%
Newmont Corp	NEM	794.51	49.02	38,946.83	0.14%	3.26%	0.00%	8.00%	0.01%

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NIKE Inc	NKE	1,245.67	122.64	152,768.48		1.11%		24.00%	
NiSource Inc	NI	412.51	27.96	11,533.72	0.04%	3.58%	0.00%	9.50%	0.00%
Norfolk Southern Corp	NSC	227.78	212.00	48,289.78	0.17%	2.55%	0.00%	10.00%	0.02%
Principal Financial Group Inc	PFG	243.10	74.32	18,067.49	0.06%	3.44%	0.00%	6.50%	0.00%
Eversource Energy	ES	348.67	78.26	27,287.15	0.10%	3.45%	0.00%	6.50%	0.01%
Northrop Grumman Corp	NOC	152.09	461.72	70,221.61	0.25%	1.50%	0.00%	9.50%	0.02%
Wells Fargo & Co	WFC	3,777.09	37.38	141,187.55	0.50%	3.21%	0.02%	12.00%	0.06%
Nucor Corp	NUE	251.93	154.47	38,915.47	0.14%	1.32%	0.00%	9.50%	0.01%
Occidental Petroleum Corp	OXY	898.12	62.43	56,069.32		1.15%			
Omnicom Group Inc	OMC	201.41	94.34	19,000.93	0.07%	2.97%	0.00%	6.50%	0.00%
ONEOK Inc	OKE	447.22	63.54	28,416.42	0.10%	6.01%	0.01%	11.50%	0.01%
Raymond James Financial Inc	RJF	215.35	93.27	20,085.88	0.07%	1.80%	0.00%	15.00%	0.01%
PG&E Corp	PCG	1,988.47	16.17	32,153.48	0.11%			7.50%	0.01%
Parker-Hannifin Corp	PH	128.27	336.11	43,111.49	0.15%	1.58%	0.00%	15.50%	0.02%
Rollins Inc	ROL	492.74	37.53	18,492.68	0.07%	1.39%	0.00%	10.50%	0.01%
PPL Corp	PPL	736.68	27.79	20,472.28	0.07%	3.45%	0.00%	3.50%	0.00%
ConocoPhillips	COP	1,217.38	99.21	120,776.57	0.42%	0.60%	0.00%	20.00%	0.08%
PulteGroup Inc	PHM	224.31	58.28	13,072.85	0.05%	1.10%	0.00%	7.00%	0.00%
Pinnacle West Capital Corp	PNW	113.18	79.24	8,968.07	0.03%	4.37%	0.00%	0.50%	0.00%
PNC Financial Services Group Inc/The	PNC	399.75	127.10	50,808.61	0.18%	4.72%	0.01%	12.00%	0.02%
PPG Industries Inc	PPG	235.36	133.58	31,439.12	0.11%	1.86%	0.00%	4.00%	0.00%
Progressive Corp/The	PGR	585.37	143.06	83,742.46	0.29%	0.28%	0.00%	6.50%	0.02%
Public Service Enterprise Group Inc	PEG	498.77	62.45	31,148.19	0.11%	3.65%	0.00%	4.50%	0.00%
Robert Half International Inc	RHI	107.70	80.57	8,677.23	0.03%	2.38%	0.00%	9.50%	0.00%
Edison International	EIX	382.63	70.59	27,009.64	0.09%	4.18%	0.00%	16.00%	0.02%
Schlumberger NV	SLB	1,427.60	49.10	70,095.26		2.04%		28.50%	
Charles Schwab Corp/The	SCHW	1,791.45	52.38	93,836.05	0.33%	1.91%	0.01%	9.00%	0.03%
Sherwin-Williams Co/The	SHW	258.44	224.77	58,090.01	0.20%	1.08%	0.00%	7.00%	0.01%
West Pharmaceutical Services Inc	WST	74.14	346.47	25,685.90	0.09%	0.22%	0.00%	17.00%	0.02%
J M Smucker Co/The	SJM	106.64	157.37	16,781.31	0.06%	2.59%	0.00%	4.00%	0.00%
Snap-on Inc	SNA	53.13	246.89	13,117.02	0.05%	2.62%	0.00%	4.50%	0.00%
AMETEK Inc	AME	230.09	145.33	33,439.56	0.12%	0.69%	0.00%	10.00%	0.01%
Southern Co/The	SO	1,088.67	69.58	75,749.87	0.27%	3.91%	0.01%	6.50%	0.02%
Truist Financial Corp	TFC	1,328.14	34.10	45,289.57	0.16%	6.10%	0.01%	5.50%	0.01%
Southwest Airlines Co	LUV	594.29	32.54	19,338.10		2.21%			
W R Berkley Corp	WRB	263.45	62.26	16,402.15	0.06%	0.64%	0.00%	17.50%	0.01%
Stanley Black & Decker Inc	SWK	153.06	80.58	12,333.17	0.04%	3.97%	0.00%	6.00%	0.00%
Public Storage	PSA	175.80	302.14	53,114.70	0.19%	3.97%	0.01%	7.50%	0.01%
Arista Networks Inc	ANET	306.40	167.86	51,431.46	0.18%			10.00%	0.02%
Sysco Corp	SYY	507.60	77.23	39,202.26		2.54%		21.50%	
Corteva Inc	CTVA	712.61	60.31	42,977.21	0.15%	0.99%	0.00%	15.50%	0.02%
Texas Instruments Inc	TXN	907.34	186.01	168,774.69	0.59%	2.67%	0.02%	4.50%	0.03%
Textron Inc	TXT	203.66	70.63	14,384.51	0.05%	0.11%	0.00%	10.50%	0.01%
Thermo Fisher Scientific Inc	TMO	385.43	576.37	222,150.29	0.78%	0.24%	0.00%	11.00%	0.09%
TJX Cos Inc/The	TJX	1,152.57	78.36	90,315.31	0.32%	1.70%	0.01%	17.00%	0.05%
Globe Life Inc	GL	96.52	110.02	10,619.24	0.04%	0.82%	0.00%	8.50%	0.00%
Johnson Controls International plc	JCI	687.21	60.22	41,384.03	0.15%	2.39%	0.00%	12.50%	0.02%
Ulta Beauty Inc	ULTA	50.20	545.67	27,389.91	0.10%			16.50%	0.02%
Union Pacific Corp	UNP	611.87	201.26	123,145.56	0.43%	2.58%	0.01%	9.50%	0.04%
Keysight Technologies Inc	KEYS	178.14	161.48	28,765.89	0.10%			13.00%	0.01%
UnitedHealth Group Inc	UNH	932.85	472.59	440,854.16	1.55%	1.40%	0.02%	12.00%	0.19%
Marathon Oil Corp	MRO	629.65	23.96	15,086.51		1.67%			
Bio-Rad Laboratories Inc	BIO	24.52	479.02	11,746.53	0.04%			11.50%	0.00%
Ventas Inc	VTR	399.99	43.35	17,339.74		4.15%		23.50%	
VF Corp	VFC	388.66	22.91	8,904.13	0.03%	5.24%	0.00%	9.00%	0.00%
Vulcan Materials Co	VMC	133.06	171.56	22,827.26	0.08%	1.00%	0.00%	9.00%	0.01%
Weyerhaeuser Co	WY	732.89	30.13	22,082.04	0.08%	2.52%	0.00%	5.00%	0.00%
Whirlpool Corp	WHR	54.50	132.02	7,195.35	0.03%	5.30%	0.00%	6.00%	0.00%
Williams Cos Inc/The	WMB	1,218.81	29.86	36,393.73	0.13%	5.99%	0.01%	11.00%	0.01%
Constellation Energy Corp	CEG	326.66	78.50	25,643.12		1.44%			
WEC Energy Group Inc	WEC	315.44	94.79	29,900.08	0.11%	3.29%	0.00%	6.00%	0.01%
Adobe Inc	ADBE	458.70	385.37	176,769.22	0.62%			13.00%	0.08%
AES Corp/The	AES	669.03	24.08	16,110.27	0.06%	2.76%	0.00%	14.00%	0.01%
Amgen Inc	AMGN	533.98	241.75	129,088.70	0.45%	3.52%	0.02%	5.50%	0.02%
Apple Inc	AAPL	15,821.95	164.90	2,609,038.90	9.17%	0.56%	0.05%	10.50%	0.96%
Autodesk Inc	ADSK	214.78	208.16	44,709.23	0.16%			14.00%	0.02%
Cintas Corp	CTAS	101.67	462.68	47,041.60	0.17%	0.99%	0.00%	14.00%	0.02%
Comcast Corp	CMCSA	4,206.61	37.91	159,472.66	0.56%	3.06%	0.02%	8.50%	0.05%
Molson Coors Beverage Co	TAP	200.03	51.68	10,337.40		3.17%		49.50%	
KLA Corp	KLAC	138.48	399.17	55,277.06	0.19%	1.30%	0.00%	20.00%	0.04%
Marriott International Inc/MD	MAR	308.88	166.04	51,287.10	0.18%	0.96%	0.00%	17.50%	0.03%
McCormick & Co Inc/MD	MKC	250.84	83.21	20,872.23	0.07%	1.87%	0.00%	4.50%	0.00%
PACCAR Inc	PCAR	522.56	73.20	38,251.03	0.13%	1.37%	0.00%	5.00%	0.01%
Costco Wholesale Corp	COST	443.48	496.87	220,353.40	0.77%	0.72%	0.01%	10.50%	0.08%
First Republic Bank/CA	FRC	186.22	13.99	2,605.20	0.01%			11.50%	0.00%
Stryker Corp	SYK	378.83	285.47	108,144.89	0.38%	1.05%	0.00%	6.50%	0.02%
Tyson Foods Inc	TSN	285.62	59.32	16,942.74	0.06%	3.24%	0.00%	6.00%	0.00%
Lamb Weston Holdings Inc	LW	147.82	104.52	15,450.46	0.05%	1.07%	0.00%	11.50%	0.01%
Applied Materials Inc	AMAT	845.12	122.83	103,805.84	0.37%	1.04%	0.00%	10.50%	0.04%
American Airlines Group Inc	AAL	652.82	14.75	9,629.04					
Cardinal Health Inc	CAH	257.64	75.50	19,451.74	0.07%	2.63%	0.00%	5.00%	0.00%
Cincinnati Financial Corp	CINF	157.18	112.08	17,616.29	0.06%	2.68%	0.00%	9.00%	0.01%
Paramount Global	PARA	609.81	22.31	13,604.91	0.05%	4.30%	0.00%	4.50%	0.00%
DR Horton Inc	DHI	343.39	97.69	33,546.06	0.12%	1.02%	0.00%	1.00%	0.00%
Electronic Arts Inc	EA	274.23	120.45	33,030.76	0.12%	0.63%	0.00%	13.00%	0.02%
Fair Isaac Corp	FICO	25.16	702.69	17,676.17	0.06%			16.00%	0.01%
Expeditors International of Washington Inc	EXPD	154.40	110.12	17,002.31	0.06%	1.22%	0.00%	10.00%	0.01%
Fastenal Co	FAST	570.96	53.94	30,797.64	0.11%	2.60%	0.00%	6.50%	0.01%
M&T Bank Corp	MTB	168.04	119.57	20,093.02	0.07%	4.35%	0.00%	9.00%	0.01%
Xcel Energy Inc	XEL	549.85	67.44	37,081.68	0.13%	3.08%	0.00%	6.00%	0.01%

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Fiserv Inc	FISV	628.13	113.03	70,997.08	0.25%			11.00%	0.03%
Fifth Third Bancorp	FITB	681.05	26.64	18,143.28	0.06%	4.95%	0.00%	10.00%	0.01%
Gilead Sciences Inc	GILD	1,248.82	82.97	103,614.26	0.36%	3.62%	0.01%	12.00%	0.04%
Hasbro Inc	HAS	138.22	53.69	7,421.03	0.03%	5.22%	0.00%	7.50%	0.00%
Huntington Bancshares Inc/OH	HBAN	1,449.64	11.20	16,235.93	0.06%	5.54%	0.00%	12.50%	0.01%
Welltower Inc	WELL	490.64	71.69	35,174.27	0.12%	3.40%	0.00%	12.00%	0.01%
Biogen Inc	BIIB	144.49	278.03	40,171.44				-10.50%	
Northern Trust Corp	NTRS	207.75	88.13	18,309.10	0.06%	3.40%	0.00%	8.00%	0.01%
Packaging Corp of America	PKG	89.88	138.83	12,478.60	0.04%	3.60%	0.00%	11.00%	0.00%
Paychex Inc	PAYX	360.51	114.59	41,310.73	0.15%	2.76%	0.00%	10.50%	0.02%
QUALCOMM Inc	QCOM	1,115.00	127.58	142,251.70	0.50%	2.35%	0.01%	9.50%	0.05%
Roper Technologies Inc	ROP	106.24	440.69	46,820.23	0.16%	0.62%	0.00%	3.50%	0.01%
Ross Stores Inc	ROST	342.05	106.13	36,301.55	0.13%	1.26%	0.00%	14.00%	0.02%
IDEXX Laboratories Inc	IDXX	82.90	500.08	41,458.13	0.15%			11.50%	0.02%
Starbucks Corp	SBUX	1,149.30	104.13	119,676.61	0.42%	2.04%	0.01%	16.00%	0.07%
KeyCorp	KEY	924.86	12.52	11,579.23	0.04%	6.55%	0.00%	7.50%	0.00%
Fox Corp	FOXA	296.92	34.05	10,110.02	0.04%	1.47%	0.00%	12.00%	0.00%
Fox Corp	FOX	237.64	31.31	7,440.63		1.60%			
State Street Corp	STT	344.48	75.69	26,073.62	0.09%	3.33%	0.00%	8.50%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	421.93	13.45	5,674.96					
US Bancorp	USB	1,531.12	36.05	55,196.88	0.19%	5.33%	0.01%	7.00%	0.01%
A O Smith Corp	AOS	125.01	69.15	8,644.44	0.03%	1.74%	0.00%	11.50%	0.00%
Gen Digital Inc	GEN	639.13	17.16	10,967.45	0.04%	2.91%	0.00%	10.50%	0.00%
T Rowe Price Group Inc	TROW	224.51	112.90	25,347.63	0.09%	4.32%	0.00%	4.50%	0.00%
Waste Management Inc	WM	406.77	163.17	66,372.17	0.23%	1.72%	0.00%	6.50%	0.02%
Constellation Brands Inc	STZ	184.50	225.89	41,676.25	0.15%	1.42%	0.00%	6.00%	0.01%
DENTSPLY SIRONA Inc	XRAY	215.36	39.28	8,459.42	0.03%	1.43%	0.00%	12.00%	0.00%
Zions Bancorp NA	ZION	148.10	29.93	4,432.60	0.02%	5.48%	0.00%	6.50%	0.00%
Alaska Air Group Inc	ALK	127.47	41.96	5,348.43					
Invesco Ltd	IVZ	454.72	16.40	7,457.47	0.03%	4.57%	0.00%	10.00%	0.00%
Intuit Inc	INTU	280.55	445.83	125,075.82	0.44%	0.70%	0.00%	16.50%	0.07%
Morgan Stanley	MS	1,681.94	87.80	147,674.33	0.52%	3.53%	0.02%	8.50%	0.04%
Microchip Technology Inc	MCHP	547.80	83.78	45,894.35	0.16%	1.71%	0.00%	10.00%	0.02%
Chubb Ltd	CB	413.51	194.18	80,294.60	0.28%	1.71%	0.00%	14.50%	0.04%
Hologic Inc	HOLX	246.55	80.70	19,896.67				25.00%	
Citizens Financial Group Inc	CFG	484.31	30.37	14,708.46	0.05%	5.53%	0.00%	8.00%	0.00%
O'Reilly Automotive Inc	ORLY	61.57	848.98	52,269.15	0.18%			13.00%	0.02%
Allstate Corp/The	ALL	263.33	110.81	29,179.60	0.10%	3.21%	0.00%	2.50%	0.00%
Equity Residential	EQR	378.60	60.00	22,716.18		4.42%		-5.00%	
BorgWarner Inc	BWA	233.79	49.11	11,481.18	0.04%	1.38%	0.00%	9.50%	0.00%
Keurig Dr Pepper Inc	KDP	1,406.45	35.28	49,619.45	0.17%	2.27%	0.00%	11.50%	0.02%
Organon & Co	OGN	254.38	23.52	5,983.09		4.76%			
Host Hotels & Resorts Inc	HST	713.48	16.49	11,765.27		2.91%		51.00%	
Incyte Corp	INCY	222.97	72.27	16,113.68				27.00%	
Simon Property Group Inc	SPG	326.73	111.97	36,584.18	0.13%	6.43%	0.01%	3.50%	0.00%
Eastman Chemical Co	EMN	119.14	84.34	10,048.10	0.04%	3.75%	0.00%	7.00%	0.00%
AvalonBay Communities Inc	AVB	139.92	168.06	23,514.96	0.08%	3.93%	0.00%	7.00%	0.01%
Prudential Financial Inc	PRU	366.97	82.74	30,363.43	0.11%	6.04%	0.01%	3.00%	0.00%
United Parcel Service Inc	UPS	723.30	193.99	140,312.77	0.49%	3.34%	0.02%	7.50%	0.04%
Walgreens Boots Alliance Inc	WBA	862.80	34.58	29,835.49	0.10%	5.55%	0.01%	3.00%	0.00%
STERIS PLC	STE	99.28	191.28	18,991.04	0.07%	0.98%	0.00%	10.00%	0.01%
McKesson Corp	MCK	136.94	356.05	48,757.13	0.17%	0.61%	0.00%	10.00%	0.02%
Lockheed Martin Corp	LMT	254.52	472.73	120,318.77	0.42%	2.54%	0.01%	7.00%	0.03%
AmerisourceBergen Corp	ABC	202.26	160.11	32,383.53	0.11%	1.21%	0.00%	8.50%	0.01%
Capital One Financial Corp	COF	381.08	96.16	36,644.65		2.50%			
Waters Corp	WAT	58.94	309.63	18,250.83	0.06%			6.00%	0.00%
Nordson Corp	NDSN	57.26	222.26	12,726.83	0.04%	1.17%	0.00%	12.00%	0.01%
Dollar Tree Inc	DLTR	221.23	143.55	31,757.28	0.11%			12.00%	0.01%
Darden Restaurants Inc	DRI	121.71	155.16	18,883.75	0.07%	3.12%	0.00%	17.50%	0.01%
Evergy Inc	EVRG	229.58	61.12	14,032.11	0.05%	4.01%	0.00%	7.50%	0.00%
Match Group Inc	MTCH	279.32	38.39	10,723.25				21.00%	
Domino's Pizza Inc	DPZ	35.42	329.87	11,683.34	0.04%	1.47%	0.00%	13.00%	0.01%
NVR Inc	NVR	3.25	5,572.19	18,104.05	0.06%			5.50%	0.00%
NetApp Inc	NTAP	213.91	63.85	13,657.83	0.05%	3.13%	0.00%	8.50%	0.00%
DXC Technology Co	DXC	227.68	25.56	5,819.55	0.02%			12.00%	0.00%
Old Dominion Freight Line Inc	ODFL	110.03	340.84	37,501.26	0.13%	0.47%	0.00%	12.50%	0.02%
DaVita Inc	DVA	90.40	81.11	7,332.34	0.03%			7.50%	0.00%
Hartford Financial Services Group Inc/The	HIG	313.06	69.69	21,816.94	0.08%	2.44%	0.00%	6.50%	0.00%
Iron Mountain Inc	IRM	291.57	52.91	15,427.18	0.05%	4.68%	0.00%	10.00%	0.01%
Estee Lauder Cos Inc/The	EL	231.68	246.46	57,099.36	0.20%	1.07%	0.00%	14.00%	0.03%
Cadence Design Systems Inc	CDNS	272.94	210.09	57,341.96	0.20%			12.00%	0.02%
Tyler Technologies Inc	TYL	41.82	354.64	14,830.69	0.05%			12.00%	0.01%
Universal Health Services Inc	UHS	63.42	127.10	8,060.30	0.03%	0.63%	0.00%	5.50%	0.00%
Skyworks Solutions Inc	SWKS	159.15	117.98	18,776.87	0.07%	2.10%	0.00%	9.00%	0.01%
Quest Diagnostics Inc	DGX	111.32	141.48	15,749.98	0.06%	2.01%	0.00%	5.00%	0.00%
Activision Blizzard Inc	ATVI	784.27	85.59	67,126.01	0.24%	0.55%	0.00%	11.50%	0.03%
Rockwell Automation Inc	ROK	114.78	293.45	33,682.78	0.12%	1.61%	0.00%	9.50%	0.01%
Kraft Heinz Co/The	KHC	1,227.00	38.67	47,448.05	0.17%	4.14%	0.01%	6.50%	0.01%
American Tower Corp	AMT	465.65	204.34	95,150.10	0.33%	3.05%	0.01%	6.00%	0.02%
Regeneron Pharmaceuticals Inc	REGN	107.51	821.67	88,335.28	0.31%			5.00%	0.02%
Amazon.com Inc	AMZN	10,247.26	103.29	1,058,439.49				26.50%	
Jack Henry & Associates Inc	JKHY	72.99	150.72	11,001.20	0.04%	1.38%	0.00%	8.50%	0.00%
Ralph Lauren Corp	RL	41.10	116.67	4,794.90	0.02%	2.57%	0.00%	12.00%	0.00%
Boston Properties Inc	BXP	156.82	54.12	8,487.26		7.24%		-1.00%	
Amphenol Corp	APH	594.61	81.72	48,591.12	0.17%	1.03%	0.00%	12.50%	0.02%
Howmet Aerospace Inc	HWM	411.80	42.37	17,448.14	0.06%	0.38%	0.00%	14.00%	0.01%
Pioneer Natural Resources Co	PXD	235.00	204.24	47,997.22		10.93%		21.00%	
Valero Energy Corp	VLO	367.84	139.60	51,350.46		2.92%		29.50%	
Synopsys Inc	SNPS	152.30	386.25	58,826.65	0.21%			12.50%	0.03%
Etsy Inc	ETSY	124.65	111.33	13,877.17				24.50%	

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CH Robinson Worldwide Inc	CHRW	114.89	99.37	11,416.52	0.04%	2.46%	0.00%	8.50%	0.00%
Accenture PLC	ACN	662.60	285.81	189,376.56	0.67%	1.57%	0.01%	12.50%	0.08%
TransDigm Group Inc	TDG	54.60	737.05	40,241.46	0.14%			20.00%	0.03%
Yum! Brands Inc	YUM	280.11	132.08	36,996.66	0.13%	1.83%	0.00%	10.50%	0.01%
Prologis Inc	PLD	923.45	124.77	115,218.86	0.41%	2.79%	0.01%	2.50%	0.01%
FirstEnergy Corp	FE	572.25	40.06	22,924.13	0.08%	3.89%	0.00%	3.00%	0.00%
VeriSign Inc	VRSN	104.88	211.33	22,164.08	0.08%			11.00%	0.01%
Quanta Services Inc	PWR	144.00	166.64	23,996.33	0.08%	0.19%	0.00%	15.50%	0.01%
Henry Schein Inc	HSIC	131.28	81.54	10,704.90	0.04%			6.00%	0.00%
Ameren Corp	AEE	262.48	86.39	22,675.22	0.08%	2.92%	0.00%	6.50%	0.01%
ANSYS Inc	ANSS	87.09	332.80	28,982.22	0.10%			8.50%	0.01%
FactSet Research Systems Inc	FDS	38.25	415.09	15,878.02	0.06%	0.86%	0.00%	10.50%	0.01%
NVIDIA Corp	NVDA	2,470.00	277.77	686,091.90		0.06%		23.00%	
Sealed Air Corp	SEE	143.96	45.91	6,609.30	0.02%	1.74%	0.00%	9.00%	0.00%
Cognizant Technology Solutions Corp	CTSH	509.30	60.93	31,031.34	0.11%	1.90%	0.00%	8.00%	0.01%
Intuitive Surgical Inc	ISRG	350.26	255.47	89,480.16	0.31%			10.00%	0.03%
Take-Two Interactive Software Inc	TTWO	168.68	119.30	20,122.93	0.07%			3.00%	0.00%
Republic Services Inc	RSG	316.24	135.22	42,762.51	0.15%	1.46%	0.00%	12.50%	0.02%
eBay Inc	EBAY	536.88	44.37	23,821.37	0.08%	2.25%	0.00%	12.50%	0.01%
Goldman Sachs Group Inc/The	GS	333.80	327.11	109,187.68	0.38%	3.06%	0.01%	5.00%	0.02%
SBA Communications Corp	SBAC	108.04	261.07	28,205.74		1.30%		35.50%	
Sempra Energy	SRE	314.65	151.16	47,562.49	0.17%	3.15%	0.01%	7.50%	0.01%
Moody's Corp	MCO	183.20	306.02	56,062.86	0.20%	1.01%	0.00%	4.00%	0.01%
ON Semiconductor Corp	ON	431.97	82.32	35,559.61	0.13%			18.50%	0.02%
Booking Holdings Inc	BKNG	37.65	2,652.41	99,857.93				22.00%	
F5 Inc	FFIV	55.07	145.69	8,023.44	0.03%			10.00%	0.00%
Akamai Technologies Inc	AKAM	156.30	78.30	12,238.60	0.04%			5.50%	0.00%
Charles River Laboratories International Inc	CRL	50.99	201.82	10,289.99	0.04%			12.00%	0.00%
MarketAxess Holdings Inc	MKTX	37.61	391.29	14,716.03	0.05%	0.74%	0.00%	10.00%	0.01%
Devon Energy Corp	DVN	654.00	50.61	33,098.94		7.03%		27.50%	
Bio-Techne Corp	TECH	157.28	74.19	11,668.23	0.04%	0.43%	0.00%	13.00%	0.01%
Alphabet Inc	GOOGL	5,956.00	103.73	617,815.88					
Teleflex Inc	TFX	46.94	253.31	11,891.38	0.04%	0.54%	0.00%	10.00%	0.00%
Bunge Ltd	BG	149.93	95.52	14,320.93	0.05%	2.62%	0.00%	2.50%	0.00%
Netflix Inc	NFLX	445.35	345.48	153,858.48	0.54%			14.50%	0.08%
Allegion plc	ALLE	87.87	106.73	9,378.04	0.03%	1.69%	0.00%	11.00%	0.00%
Agilent Technologies Inc	A	295.70	138.12	40,840.91	0.14%	0.65%	0.00%	12.00%	0.02%
Warner Bros Discovery Inc	WBD	2,435.60	15.10	36,777.56					
Elevance Health Inc	ELV	237.46	459.81	109,185.56	0.38%	1.29%	0.00%	12.50%	0.05%
Trimble Inc	TRMB	246.95	52.42	12,945.22	0.05%			7.00%	0.00%
CME Group Inc	CME	359.74	191.52	68,897.40	0.24%	2.30%	0.01%	8.50%	0.02%
Juniper Networks Inc	JNPR	321.34	34.42	11,060.66	0.04%	2.56%	0.00%	11.00%	0.00%
BlackRock Inc	BLK	150.24	669.12	100,525.91	0.35%	2.99%	0.01%	8.50%	0.03%
DTE Energy Co	DTE	206.11	109.54	22,577.07	0.08%	3.48%	0.00%	4.50%	0.00%
Nasdaq Inc	NDAQ	489.00	54.67	26,733.79	0.09%	1.46%	0.00%	8.50%	0.01%
Celanese Corp	CE	110.83	108.89	12,067.73	0.04%	2.57%	0.00%	7.50%	0.00%
Philip Morris International Inc	PM	1,552.15	97.25	150,946.39	0.53%	5.22%	0.03%	5.00%	0.03%
Salesforce Inc	CRM	1,000.00	199.78	199,780.00	0.70%			19.50%	0.14%
Ingersoll Rand Inc	IR	404.96	58.18	23,560.40		0.14%			
Huntington Ingalls Industries Inc	HII	39.93	207.02	8,265.48	0.03%	2.40%	0.00%	10.00%	0.00%
MetLife Inc	MET	774.36	57.94	44,866.53	0.16%	3.45%	0.01%	7.50%	0.01%
Tapestry Inc	TPR	236.08	43.11	10,177.24	0.04%	2.78%	0.00%	13.50%	0.00%
CSX Corp	CSX	2,048.43	29.94	61,330.05	0.22%	1.47%	0.00%	10.50%	0.02%
Edwards Lifesciences Corp	EW	606.10	82.73	50,142.65	0.18%			11.00%	0.02%
Ameriprise Financial Inc	AMP	105.15	306.50	32,227.86	0.11%	1.63%	0.00%	13.50%	0.02%
Zebra Technologies Corp	ZBRA	51.41	318.00	16,346.79	0.06%			11.50%	0.01%
Zimmer Biomet Holdings Inc	ZBH	210.06	129.20	27,140.27	0.10%	0.74%	0.00%	4.50%	0.00%
CBRE Group Inc	CBRE	309.89	72.81	22,563.24	0.08%			8.50%	0.01%
Camden Property Trust	CPT	106.76	104.84	11,193.03		3.82%		-4.00%	
Mastercard Inc	MA	945.72	363.41	343,685.20	1.21%	0.63%	0.01%	18.50%	0.22%
CarMax Inc	KMX	158.02	64.28	10,157.72				-3.00%	
Intercontinental Exchange Inc	ICE	558.85	104.29	58,282.57	0.20%	1.61%	0.00%	7.00%	0.01%
Fidelity National Information Services Inc	FIS	591.94	54.33	32,159.83		3.83%		52.00%	
Chipotle Mexican Grill Inc	CMG	27.62	1,708.29	47,186.39	0.17%			20.00%	0.03%
Wynn Resorts Ltd	WYNN	113.68	111.91	12,722.15				27.00%	
Live Nation Entertainment Inc	LYV	231.59	70.00	16,211.37					
Assurant Inc	AIZ	52.92	120.07	6,354.22	0.02%	2.33%	0.00%	15.50%	0.00%
NRG Energy Inc	NRG	232.27	34.29	7,964.54		4.40%		-2.50%	
Regions Financial Corp	RF	934.56	18.56	17,345.47	0.06%	4.31%	0.00%	11.50%	0.01%
Monster Beverage Corp	MNST	1,044.82	54.01	56,430.67	0.20%			10.50%	0.02%
Mosaic Co/The	MOS	336.49	45.88	15,438.02	0.05%	1.74%	0.00%	7.50%	0.00%
Baker Hughes Co	BKR	1,011.22	28.86	29,183.75		2.63%			
Expedia Group Inc	EXPE	147.83	97.03	14,343.46					
CF Industries Holdings Inc	CF	195.77	72.49	14,191.22	0.05%	2.21%	0.00%	11.00%	0.01%
Leidos Holdings Inc	LDOS	137.19	92.06	12,629.99	0.04%	1.56%	0.00%	8.00%	0.00%
APA Corp	APA	310.95	36.06	11,212.97		2.77%			
Alphabet Inc	GOOG	5,968.00	104.00	620,672.00	2.18%			18.50%	0.40%
First Solar Inc	FSLR	106.82	217.50	23,234.00				24.50%	
TE Connectivity Ltd	TEL	316.46	131.15	41,503.34	0.15%	1.80%	0.00%	10.50%	0.02%
Cooper Cos Inc/The	COO	49.46	373.36	18,464.89	0.06%	0.02%	0.00%	12.00%	0.01%
Discover Financial Services	DFS	259.36	98.84	25,635.24	0.09%	2.43%	0.00%	8.50%	0.01%
Linde PLC	LIN	490.77	355.44	174,438.22	0.61%	1.43%	0.01%	10.00%	0.06%
Visa Inc	V	1,624.95	225.46	366,362.13	1.29%	0.80%	0.01%	13.50%	0.17%
Mid-America Apartment Communities Inc	MAA	116.60	151.04	17,611.11		3.71%		-12.50%	
Xylem Inc/NY	XYL	180.28	104.70	18,875.11	0.07%	1.26%	0.00%	9.00%	0.01%
Marathon Petroleum Corp	MPC	441.63	134.83	59,544.43		2.23%			
Tractor Supply Co	TSCO	110.07	235.04	25,871.56	0.09%	1.75%	0.00%	13.50%	0.01%
Advanced Micro Devices Inc	AMD	1,611.39	98.01	157,932.14				25.50%	
ResMed Inc	RMD	146.91	218.99	32,171.60	0.11%	0.80%	0.00%	8.50%	0.01%
Mettler-Toledo International Inc	MTD	22.07	1,530.21	33,771.73	0.12%			13.50%	0.02%

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Jacobs Solutions Inc	J	126.71	117.51	14,890.16	0.05%	0.89%	0.00%	12.00%	0.01%
Copart Inc	CPRT	476.59	75.21	35,844.56	0.13%			7.00%	0.01%
VICI Properties Inc	VICI	1,004.21	32.62	32,757.17	0.12%	4.78%	0.01%	7.00%	0.01%
Albemarle Corp	ALB	117.30	221.04	25,927.77		0.72%		21.50%	
Fortinet Inc	FTNT	784.07	66.46	52,109.03				21.50%	
Moderna Inc	MRNA	385.68	153.58	59,232.43				-2.50%	
Essex Property Trust Inc	ESS	64.46	209.14	13,482.00		4.42%		-3.00%	
CoStar Group Inc	CSGP	406.77	68.85	28,006.25	0.10%			13.00%	0.01%
Realty Income Corp	O	660.52	63.32	41,824.19	0.15%	4.83%	0.01%	5.50%	0.01%
Westrock Co	WRK	254.65	30.47	7,759.25	0.03%	3.61%	0.00%	10.00%	0.00%
Westinghouse Air Brake Technologies Corp	WAB	180.35	101.06	18,226.37	0.06%	0.67%	0.00%	9.50%	0.01%
Pool Corp	POOL	39.10	342.44	13,389.75	0.05%	1.17%	0.00%	14.00%	0.01%
Western Digital Corp	WDC	319.32	37.67	12,028.86	0.04%			4.00%	0.00%
PepsiCo Inc	PEP	1,377.32	182.30	251,084.52	0.88%	2.52%	0.02%	6.50%	0.06%
Diamondback Energy Inc	FANG	183.59	135.17	24,815.86		8.73%			
ServiceNow Inc	NOW	203.00	464.72	94,338.16				45.50%	
Church & Dwight Co Inc	CHD	244.04	88.41	21,575.66	0.08%	1.23%	0.00%	6.00%	0.00%
Federal Realty Investment Trust	FRT	81.35	98.83	8,040.12	0.03%	4.37%	0.00%	2.50%	0.00%
MGM Resorts International	MGM	372.89	44.42	16,563.86				25.00%	
American Electric Power Co Inc	AEP	514.41	90.99	46,805.89	0.16%	3.65%	0.01%	6.00%	0.01%
SolarEdge Technologies Inc	SEDG	56.15	303.95	17,065.88				27.00%	
Invitation Homes Inc	INVH	611.41	31.23	19,094.37		3.33%			
PTC Inc	PTC	118.26	128.23	15,164.86				29.00%	
JB Hunt Transport Services Inc	JBHT	103.77	175.46	18,207.48	0.06%	0.96%	0.00%	10.00%	0.01%
Lam Research Corp	LRCX	134.94	530.12	71,532.27	0.25%	1.30%	0.00%	14.00%	0.04%
Mohawk Industries Inc	MHK	63.54	100.22	6,367.98	0.02%			10.00%	0.00%
GE HealthCare Technologies Inc	GEHC	453.93	82.03	37,235.55					
Pentair PLC	PNR	164.94	55.27	9,116.23	0.03%	1.59%	0.00%	12.00%	0.00%
Vertex Pharmaceuticals Inc	VRTX	257.09	315.07	81,001.66	0.28%			13.50%	0.04%
Amcor PLC	AMCR	1,485.78	11.38	16,908.18	0.06%	4.31%	0.00%	14.50%	0.01%
Meta Platforms Inc	META	2,225.76	211.94	471,728.21	1.66%			11.00%	0.18%
T-Mobile US Inc	TMUS	1,219.38	144.84	176,615.43	0.62%			16.00%	0.10%
United Rentals Inc	URI	69.36	395.76	27,449.91	0.10%	1.50%	0.00%	18.00%	0.02%
Honeywell International Inc	HON	668.14	191.12	127,694.92	0.45%	2.16%	0.01%	12.00%	0.05%
Alexandria Real Estate Equities Inc	ARE	173.09	125.59	21,738.00	0.08%	3.85%	0.00%	11.00%	0.01%
Delta Air Lines Inc	DAL	641.24	34.92	22,392.07					
Seagate Technology Holdings PLC	STX	206.48	66.12	13,652.72	0.05%	4.23%	0.00%	12.00%	0.01%
United Airlines Holdings Inc	UAL	326.73	44.25	14,457.76					
News Corp	NWS	193.24	17.43	3,368.23		1.15%			
Centene Corp	CNC	550.70	63.21	34,809.75	0.12%			9.00%	0.01%
Martin Marietta Materials Inc	MLM	62.10	355.06	22,050.65	0.08%	0.74%	0.00%	4.50%	0.00%
Teradyne Inc	TER	156.05	107.51	16,776.72	0.06%	0.41%	0.00%	19.00%	0.01%
PayPal Holdings Inc	PYPL	1,131.37	75.94	85,916.47	0.30%			12.00%	0.04%
Tesla Inc	TSLA	3,164.10	207.46	656,424.81				21.50%	
Arch Capital Group Ltd	ACGL	371.20	67.87	25,193.14				21.50%	
DISH Network Corp	DISH	292.72	9.33	2,731.05				-4.00%	
Dow Inc	DOW	707.99	54.82	38,811.96	0.14%	5.11%	0.01%	8.50%	0.01%
Everest Re Group Ltd	RE	39.16	358.02	14,018.99	0.05%	1.84%	0.00%	9.50%	0.00%
Teledyne Technologies Inc	TDY	47.00	447.36	21,023.68	0.07%			9.50%	0.01%
News Corp	NWSA	382.36	17.27	6,603.41		1.16%			
Exelon Corp	EXC	994.30	41.89	41,651.19		3.44%			
Global Payments Inc	GPN	263.78	105.24	27,760.63	0.10%	0.95%	0.00%	17.00%	0.02%
Crown Castle Inc	CCI	433.67	133.84	58,042.26	0.20%	4.68%	0.01%	13.50%	0.03%
Aptiv PLC	APTV	270.95	112.19	30,397.88				30.00%	
Advance Auto Parts Inc	AAP	59.27	121.61	7,208.31	0.03%	4.93%	0.00%	12.00%	0.00%
Align Technology Inc	ALGN	76.74	334.14	25,641.57	0.09%			17.00%	0.02%
Illumina Inc	ILMN	158.00	232.55	36,742.90	0.13%			6.50%	0.01%
Targa Resources Corp	TRGP	226.28	72.95	16,506.83		1.92%			
LKQ Corp	LKQ	267.29	56.76	15,171.38	0.05%	1.94%	0.00%	13.00%	0.01%
Zoetis Inc	ZTS	462.95	166.44	77,052.57	0.27%	0.90%	0.00%	9.00%	0.02%
Equinix Inc	EQIX	92.75	721.04	66,872.85	0.24%	1.89%	0.00%	15.00%	0.04%
Digital Realty Trust Inc	DLR	291.30	98.31	28,637.31		4.96%		-1.00%	
Molina Healthcare Inc	MOH	58.27	267.49	15,586.37	0.05%			12.50%	0.01%
Las Vegas Sands Corp	LVS	764.27	57.45	43,907.48					

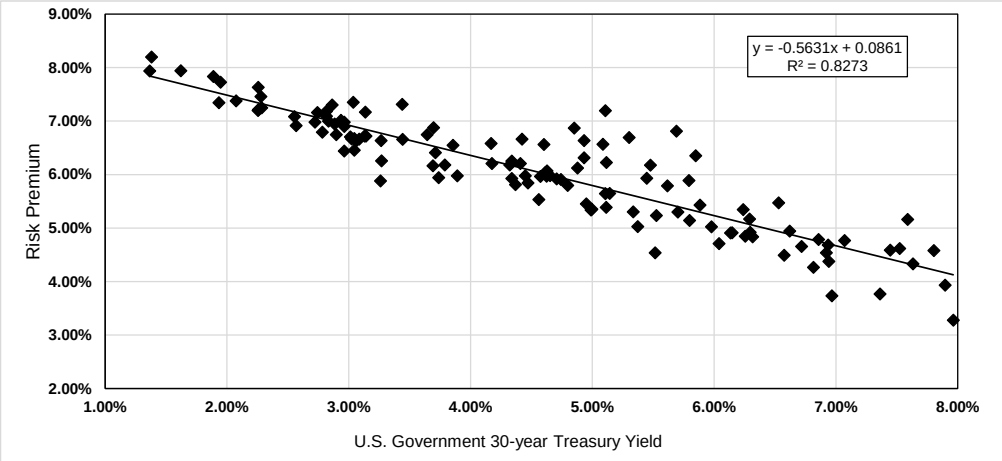
Notes:
[1] Equals sum of Col. [9]
[2] Equals sum of Col. [11]
[3] Equals ([1] x (1 + (0.5 x [2]))) + [2]
[4] Source: Bloomberg Professional as of March 31, 2023
[5] Source: Bloomberg Professional as of March 31, 2023
[6] Equals [4] x [5]
[7] Equals weight in S&P 500 based on market capitalization [6] if Growth Rate >0% and ≤20%
[8] Source: Bloomberg Professional, as of March 31, 2023
[9] Equals [7] x [8]
[10] Source: Value Line, as of March 31, 2023
[11] Equals [7] x [10]

BOND YIELD PLUS RISK PREMIUM

Quarter	[1] Average Authorized VI Electric ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
1992.1	12.38%	7.81%	4.58%
1992.2	11.83%	7.90%	3.93%
1992.3	12.03%	7.45%	4.59%
1992.4	12.14%	7.52%	4.62%
1993.1	11.84%	7.07%	4.76%
1993.2	11.64%	6.86%	4.78%
1993.3	11.15%	6.32%	4.84%
1993.4	11.04%	6.14%	4.91%
1994.1	11.07%	6.58%	4.49%
1994.2	11.13%	7.36%	3.77%
1994.3	12.75%	7.59%	5.16%
1994.4	11.24%	7.96%	3.28%
1995.1	11.96%	7.63%	4.33%
1995.2	11.32%	6.94%	4.37%
1995.3	11.37%	6.72%	4.65%
1995.4	11.58%	6.24%	5.35%
1996.1	11.46%	6.29%	5.17%
1996.2	11.46%	6.92%	4.54%
1996.3	10.70%	6.97%	3.73%
1996.4	11.56%	6.62%	4.94%
1997.1	11.08%	6.82%	4.26%
1997.2	11.62%	6.94%	4.68%
1997.3	12.00%	6.53%	5.47%
1997.4	11.06%	6.15%	4.91%
1998.1	11.31%	5.88%	5.43%
1998.2	12.20%	5.85%	6.35%
1998.3	11.65%	5.48%	6.17%
1998.4	12.30%	5.11%	7.19%
1999.1	10.40%	5.37%	5.03%
1999.2	10.94%	5.80%	5.14%
1999.3	10.75%	6.04%	4.71%
1999.4	11.10%	6.26%	4.84%
2000.1	11.21%	6.30%	4.92%
2000.2	11.00%	5.98%	5.02%
2000.3	11.68%	5.79%	5.89%
2000.4	12.50%	5.69%	6.81%
2001.1	11.38%	5.45%	5.93%
2001.2	11.00%	5.70%	5.30%
2001.3	10.76%	5.53%	5.23%
2001.4	11.99%	5.30%	6.69%
2002.1	10.05%	5.52%	4.53%
2002.2	11.41%	5.62%	5.79%
2002.3	11.65%	5.09%	6.56%
2002.4	11.57%	4.93%	6.63%
2003.1	11.72%	4.85%	6.87%
2003.2	11.16%	4.60%	6.56%
2003.3	10.50%	5.11%	5.39%
2003.4	11.34%	5.11%	6.23%
2004.1	11.00%	4.88%	6.12%
2004.2	10.64%	5.34%	5.30%
2004.3	10.75%	5.11%	5.64%
2004.4	11.24%	4.93%	6.31%
2005.1	10.63%	4.71%	5.92%
2005.2	10.31%	4.47%	5.84%
2005.3	11.08%	4.42%	6.66%
2005.4	10.63%	4.65%	5.98%
2006.1	10.70%	4.63%	6.07%
2006.2	10.79%	5.14%	5.64%
2006.3	10.35%	5.00%	5.35%
2006.4	10.65%	4.74%	5.91%
2007.1	10.59%	4.80%	5.79%
2007.2	10.33%	4.99%	5.34%
2007.3	10.40%	4.95%	5.45%
2007.4	10.65%	4.61%	6.04%
2008.1	10.62%	4.41%	6.21%
2008.2	10.54%	4.57%	5.96%
2008.3	10.43%	4.45%	5.98%

BOND YIELD PLUS RISK PREMIUM

Quarter	[1] Average Authorized VI Electric ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
2008.4	10.39%	3.64%	6.74%
2009.1	10.75%	3.44%	7.31%
2009.2	10.75%	4.17%	6.58%
2009.3	10.50%	4.32%	6.18%
2009.4	10.59%	4.34%	6.25%
2010.1	10.59%	4.62%	5.97%
2010.2	10.18%	4.37%	5.81%
2010.3	10.40%	3.86%	6.55%
2010.4	10.38%	4.17%	6.20%
2011.1	10.09%	4.56%	5.53%
2011.2	10.26%	4.34%	5.92%
2011.3	10.57%	3.70%	6.88%
2011.4	10.39%	3.04%	7.35%
2012.1	10.30%	3.14%	7.17%
2012.2	9.95%	2.94%	7.01%
2012.3	9.90%	2.74%	7.16%
2012.4	10.16%	2.86%	7.30%
2013.1	9.85%	3.13%	6.72%
2013.2	9.86%	3.14%	6.72%
2013.3	10.12%	3.71%	6.41%
2013.4	9.97%	3.79%	6.18%
2014.1	9.86%	3.69%	6.16%
2014.2	10.10%	3.44%	6.66%
2014.3	9.90%	3.27%	6.63%
2014.4	9.94%	2.96%	6.98%
2015.1	9.64%	2.55%	7.08%
2015.2	9.83%	2.88%	6.94%
2015.3	9.40%	2.96%	6.44%
2015.4	9.86%	2.96%	6.90%
2016.1	9.70%	2.72%	6.98%
2016.2	9.48%	2.57%	6.91%
2016.3	9.74%	2.28%	7.46%
2016.4	9.83%	2.83%	7.00%
2017.1	9.72%	3.05%	6.67%
2017.2	9.64%	2.90%	6.75%
2017.3	10.00%	2.82%	7.18%
2017.4	9.91%	2.82%	7.09%
2018.1	9.69%	3.02%	6.66%
2018.2	9.75%	3.09%	6.66%
2018.3	9.69%	3.06%	6.63%
2018.4	9.52%	3.27%	6.25%
2019.1	9.72%	3.01%	6.70%
2019.2	9.58%	2.78%	6.79%
2019.3	9.53%	2.29%	7.25%
2019.4	9.89%	2.26%	7.63%
2020.1	9.72%	1.89%	7.83%
2020.2	9.58%	1.38%	8.19%
2020.3	9.30%	1.37%	7.93%
2020.4	9.56%	1.62%	7.94%
2021.1	9.45%	2.07%	7.38%
2021.2	9.47%	2.26%	7.21%
2021.3	9.27%	1.93%	7.34%
2021.4	9.67%	1.95%	7.73%
2022.1	9.45%	2.25%	7.20%
2022.2	9.50%	3.05%	6.45%
2022.3	9.14%	3.26%	5.88%
2022.4	9.87%	3.89%	5.98%
2023.1	9.68%	3.74%	5.94%
AVERAGE	10.60%	4.55%	6.05%
MEDIAN	10.57%	4.60%	6.17%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.909557
R Square	0.827294
Adjusted R Square	0.825890
Standard Error	0.004270
Observations	125

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.010745	0.010745	589.193673	0.000000
Residual	123	0.002243	0.000018		
Total	124	0.012988			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.0861	0.0011	76.73	0.00000	0.08389	0.08833	0.08389	0.08833
US Government 30-year Treasury	(0.5631)	0.0232	(24.27)	0.00000	(0.60901)	(0.51717)	(0.60901)	(0.51717)

	U.S. Govt. 30-year Treasury	Risk Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	3.81%	6.47%	10.27%
Blue Chip Near-Term Projected Forecast (Q2 2023 - Q2 2024) [5]	3.88%	6.43%	10.31%
Blue Chip Long-Term Projected Forecast (2024-2028) [6]	3.90%	6.41%	10.31%
AVERAGE			10.30%

Notes:
[1] Source: Regulatory Research Associates, rate cases through March 31,2023
[2] Source: S&P Capital IQ Pro, quarterly bond yields are the average of each trading day in the quarter
[3] Equals Column [1] − Column [2]
[4] Source: S&P Capital IQ Pro, 30-day average as of February 28, 2023
[5] Blue Chip Financial Forecasts, Vol. 42, No. 3, March 1, 2023, at 2
[6] Source: Blue Chip Financial Forecasts, Vol. 41, No. 12, December 2, 2022, at 14
[7] See notes [4], [5] & [6]
[8] Equals 0.086108 + (-0.563088 x Column [7])
[9] Equals Column [7] + Column [8]

EVERGY METRO - PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF NET PLANT
($ Millions)

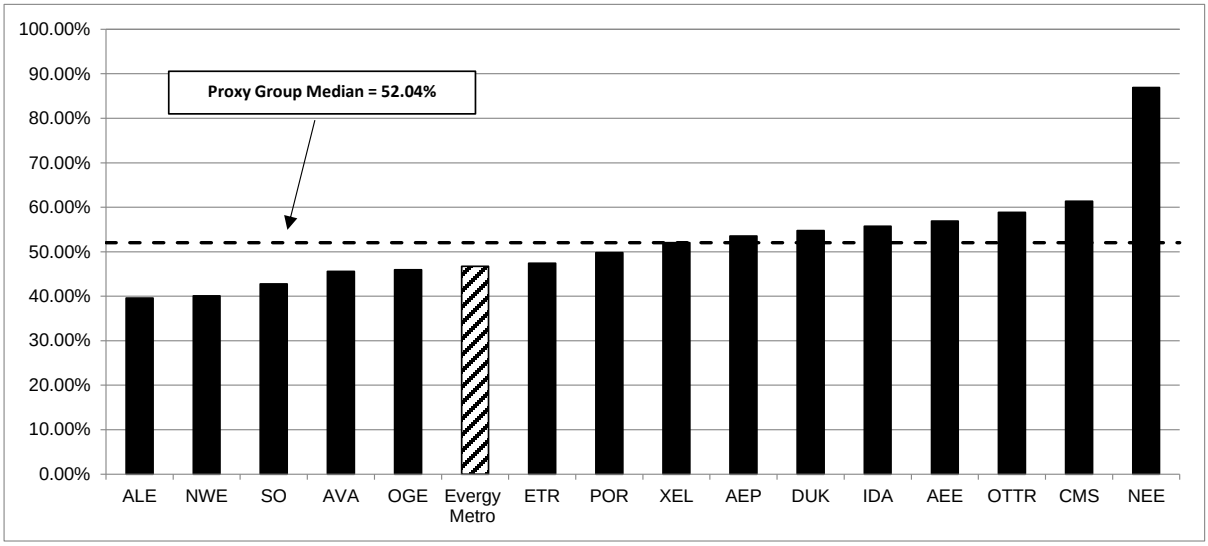
		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2022	2023	2024	2025	2026	2027	2023-27 Cap. Ex. / 2022 Net Plant
ALLETE, Inc.	ALE							
Capital Spending per Share			$5.95	$6.60	$7.25	$7.25	$7.25	
Common Shares Outstanding			58.00	59.50	61.00	61.00	61.00	
Capital Expenditures			$345.1	$392.7	$442.3	$442.3	$442.3	39.59%
Net Plant		$5,215.0						
Alliant Energy Corporation	LNT							
Capital Spending per Share			$5.90	$6.08	$6.25	$6.25	$6.25	
Common Shares Outstanding			251.50	252.25	253.00	253.00	253.00	
Capital Expenditures			$1,483.9	$1,532.4	$1,581.3	$1,581.3	$1,581.3	48.42%
Net Plant		$16,025.0						
Ameren Corporation	AEE							
Capital Spending per Share			$12.55	$12.78	$13.00	$13.00	$13.00	
Common Shares Outstanding			267.00	273.50	280.00	280.00	280.00	
Capital Expenditures			$3,350.9	$3,494.0	$3,640.0	$3,640.0	$3,640.0	56.89%
Net Plant		$31,225.0						
American Electric Power Company, Inc.	AEP							
Capital Spending per Share			$14.15	$14.08	$14.00	$14.00	$14.00	
Common Shares Outstanding			523.00	534.00	545.00	545.00	545.00	
Capital Expenditures			$7,400.5	$7,516.1	$7,630.0	$7,630.0	$7,630.0	53.51%
Net Plant		$70,650.0						
Avista Corporation	AVA							
Capital Spending per Share			$6.40	$6.20	$6.00	$6.00	$6.00	
Common Shares Outstanding			77.00	80.00	83.00	83.00	83.00	
Capital Expenditures			$492.8	$496.0	$498.0	$498.0	$498.0	45.56%
Net Plant		$5,450.0						
CMS Energy Corporation	CMS							
Capital Spending per Share			$10.00	$9.88	$9.75	$9.75	$9.75	
Common Shares Outstanding			290.00	295.00	300.00	300.00	300.00	
Capital Expenditures			$2,900.0	$2,913.1	$2,925.0	$2,925.0	$2,925.0	61.36%
Net Plant		$23,775.0						
Duke Energy Corporation	DUK							
Capital Spending per Share			$16.75	$16.75	$16.75	$16.75	$16.75	
Common Shares Outstanding			770.00	770.00	770.00	770.00	770.00	
Capital Expenditures			$12,897.5	$12,897.5	$12,897.5	$12,897.5	$12,897.5	54.78%
Net Plant		$117,725.0						
Entergy Corporation	ETR							
Capital Spending per Share			$19.00	$19.38	$19.75	$19.75	$19.75	
Common Shares Outstanding			209.00	211.50	214.00	214.00	214.00	
Capital Expenditures			$3,971.0	$4,097.8	$4,226.5	$4,226.5	$4,226.5	47.42%
Net Plant		$43,750.0						
IDACORP, Inc.	IDA							
Capital Spending per Share			$14.20	$12.15	$10.10	$10.10	$10.10	
Common Shares Outstanding			51.00	51.50	52.00	52.00	52.00	
Capital Expenditures			$724.2	$625.7	$525.2	$525.2	$525.2	55.72%
Net Plant		$5,250.0						

EVERGY METRO - PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF NET PLANT
($ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2022	2023	2024	2025	2026	2027	2023-27 Cap. Ex. / 2022 Net Plant
NextEra Energy, Inc.	NEE							
Capital Spending per Share			$8.40	$9.20	$10.00	$10.00	$10.00	
Common Shares Outstanding			2025.00	2025.00	2025.00	2025.00	2025.00	
Capital Expenditures			$17,010.0	$18,630.0	$20,250.0	$20,250.0	$20,250.0	86.90%
Net Plant		$110,925.0						
NorthWestern Corporation	NWE							
Capital Spending per Share			$9.10	$7.80	$6.50	$6.50	$6.50	
Common Shares Outstanding			62.00	62.00	62.00	62.00	62.00	
Capital Expenditures			$564.2	$483.6	$403.0	$403.0	$403.0	40.09%
Net Plant		$5,630.0						
OGE Energy Corporation	OGE							
Capital Spending per Share			$4.75	$4.75	$4.75	$4.75	$4.75	
Common Shares Outstanding			200.20	200.20	200.20	200.20	200.20	
Capital Expenditures			$951.0	$951.0	$951.0	$951.0	$951.0	45.96%
Net Plant		$10,345.0						
Otter Tail Corporation	OTTR							
Capital Spending per Share			$5.90	$6.08	$6.25	$6.25	$6.25	
Common Shares Outstanding			41.90	42.20	42.50	42.50	42.50	
Capital Expenditures			$247.2	$256.4	$265.6	$265.6	$265.6	58.84%
Net Plant		$2,210.0						
Portland General Electric Company	POR							
Capital Spending per Share			$8.25	$8.38	$8.50	$8.50	$8.50	
Common Shares Outstanding			94.50	97.25	100.00	100.00	100.00	
Capital Expenditures			$779.6	$814.5	$850.0	$850.0	$850.0	49.78%
Net Plant		$8,325.0						
Southern Company	SO							
Capital Spending per Share			$7.85	$7.68	$7.50	$7.50	$7.50	
Common Shares Outstanding			1070.00	1070.00	1070.00	1070.00	1070.00	
Capital Expenditures			$8,399.5	$8,212.3	$8,025.0	$8,025.0	$8,025.0	42.76%
Net Plant		$95,150.0						
Xcel Energy Inc.	XEL							
Capital Spending per Share			$9.00	$9.00	$9.00	$9.00	$9.00	
Common Shares Outstanding			550.00	555.50	561.00	561.00	561.00	
Capital Expenditures			$4,950.0	$4,999.5	$5,049.0	$5,049.0	$5,049.0	52.04%
Net Plant		$48,225.0						
Evergy Metro	Evergy Metro							
Capital Expenditures [8]			$305.61	$305.61	$305.61	$305.61	$305.61	46.73%
Net Plant [9]		$3,269.9						

Notes:
[1] - [6] Source: Value Line, dated November 11, 2022, December 9, 2022, January 20, 2023.
[7] Equals (Column [2] + [3] + [4] + [5] + [6]) / Column [1]
[8] Provided by the Companies
[9] Provided by the Companies

EVERGY METRO - PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF NET PLANT



	Company	Ticker	Projected CAPEX / 2022 Net Plant [1]
1	ALLETE, Inc.	ALE	39.59%
2	NorthWestern Corporation	NWE	40.09%
3	Southern Company	SO	42.76%
4	Avista Corporation	AVA	45.56%
5	OGE Energy Corporation	OGE	45.96%
6	Evergy Metro	Evergy Metro	46.73%
7	Entergy Corporation	ETR	47.42%
9	Portland General Electric Company	POR	49.78%
10	Xcel Energy Inc.	XEL	52.04%
11	American Electric Power Company, Inc.	AEP	53.51%
12	Duke Energy Corporation	DUK	54.78%
13	IDACORP, Inc.	IDA	55.72%
14	Ameren Corporation	AEE	56.89%
15	Otter Tail Corporation	OTTR	58.84%
16	CMS Energy Corporation	CMS	61.36%
17	NextEra Energy, Inc.	NEE	86.90%
	Proxy Group Median		52.04%
	The Companies as % of the Median		0.90

Notes:
[1] Exhibit No. AEB-8, pgs. 1-2, col. [7]

EVERGY CENTRAL - PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF NET PLANT
($ Millions)

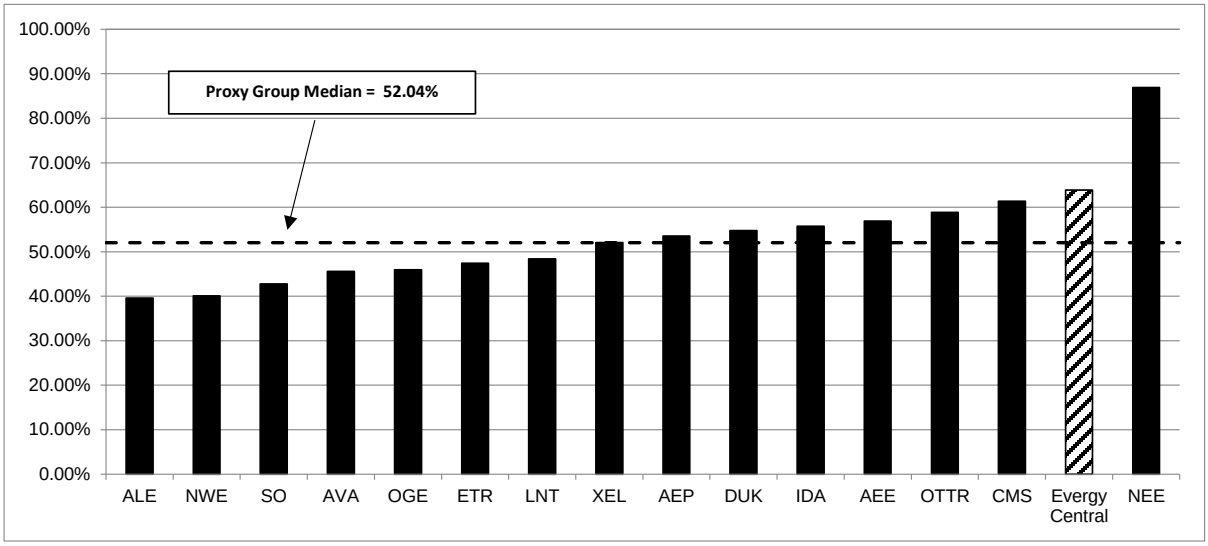
		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2022	2023	2024	2025	2026	2027	2023-27 Cap. Ex. / 2022 Net Plant
ALLETE, Inc.	ALE							
Capital Spending per Share			$5.95	$6.60	$7.25	$7.25	$7.25	
Common Shares Outstanding			58.00	59.50	61.00	61.00	61.00	
Capital Expenditures			$345.1	$392.7	$442.3	$442.3	$442.3	39.59%
Net Plant		$5,215.0						
Alliant Energy Corporation	LNT							
Capital Spending per Share			$5.90	$6.08	$6.25	$6.25	$6.25	
Common Shares Outstanding			251.50	252.25	253.00	253.00	253.00	
Capital Expenditures			$1,483.9	$1,532.4	$1,581.3	$1,581.3	$1,581.3	48.42%
Net Plant		$16,025.0						
Ameren Corporation	AEE							
Capital Spending per Share			$12.55	$12.78	$13.00	$13.00	$13.00	
Common Shares Outstanding			267.00	273.50	280.00	280.00	280.00	
Capital Expenditures			$3,350.9	$3,494.0	$3,640.0	$3,640.0	$3,640.0	56.89%
Net Plant		$31,225.0						
American Electric Power Company, Inc.	AEP							
Capital Spending per Share			$14.15	$14.08	$14.00	$14.00	$14.00	
Common Shares Outstanding			523.00	534.00	545.00	545.00	545.00	
Capital Expenditures			$7,400.5	$7,516.1	$7,630.0	$7,630.0	$7,630.0	53.51%
Net Plant		$70,650.0						
Avista Corporation	AVA							
Capital Spending per Share			$6.40	$6.20	$6.00	$6.00	$6.00	
Common Shares Outstanding			77.00	80.00	83.00	83.00	83.00	
Capital Expenditures			$492.8	$496.0	$498.0	$498.0	$498.0	45.56%
Net Plant		$5,450.0						
CMS Energy Corporation	CMS							
Capital Spending per Share			$10.00	$9.88	$9.75	$9.75	$9.75	
Common Shares Outstanding			290.00	295.00	300.00	300.00	300.00	
Capital Expenditures			$2,900.0	$2,913.1	$2,925.0	$2,925.0	$2,925.0	61.36%
Net Plant		$23,775.0						
Duke Energy Corporation	DUK							
Capital Spending per Share			$16.75	$16.75	$16.75	$16.75	$16.75	
Common Shares Outstanding			770.00	770.00	770.00	770.00	770.00	
Capital Expenditures			$12,897.5	$12,897.5	$12,897.5	$12,897.5	$12,897.5	54.78%
Net Plant		$117,725.0						
Entergy Corporation	ETR							
Capital Spending per Share			$19.00	$19.38	$19.75	$19.75	$19.75	
Common Shares Outstanding			209.00	211.50	214.00	214.00	214.00	
Capital Expenditures			$3,971.0	$4,097.8	$4,226.5	$4,226.5	$4,226.5	47.42%
Net Plant		$43,750.0						
IDACORP, Inc.	IDA							
Capital Spending per Share			$14.20	$12.15	$10.10	$10.10	$10.10	
Common Shares Outstanding			51.00	51.50	52.00	52.00	52.00	
Capital Expenditures			$724.2	$625.7	$525.2	$525.2	$525.2	55.72%
Net Plant		$5,250.0						

EVERGY CENTRAL - PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF NET PLANT
($ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2022	2023	2024	2025	2026	2027	2023-27 Cap. Ex. / 2022 Net Plant
NextEra Energy, Inc.	NEE							
Capital Spending per Share			$8.40	$9.20	$10.00	$10.00	$10.00	
Common Shares Outstanding			2025.00	2025.00	2025.00	2025.00	2025.00	
Capital Expenditures			$17,010.0	$18,630.0	$20,250.0	$20,250.0	$20,250.0	86.90%
Net Plant		$110,925.0						
NorthWestern Corporation	NWE							
Capital Spending per Share			$9.10	$7.80	$6.50	$6.50	$6.50	
Common Shares Outstanding			62.00	62.00	62.00	62.00	62.00	
Capital Expenditures			$564.2	$483.6	$403.0	$403.0	$403.0	40.09%
Net Plant		$5,630.0						
OGE Energy Corporation	OGE							
Capital Spending per Share			$4.75	$4.75	$4.75	$4.75	$4.75	
Common Shares Outstanding			200.20	200.20	200.20	200.20	200.20	
Capital Expenditures			$951.0	$951.0	$951.0	$951.0	$951.0	45.96%
Net Plant		$10,345.0						
Otter Tail Corporation	OTTR							
Capital Spending per Share			$5.90	$6.08	$6.25	$6.25	$6.25	
Common Shares Outstanding			41.90	42.20	42.50	42.50	42.50	
Capital Expenditures			$247.2	$256.4	$265.6	$265.6	$265.6	58.84%
Net Plant		$2,210.0						
Portland General Electric Company	POR							
Capital Spending per Share			$8.25	$8.38	$8.50	$8.50	$8.50	
Common Shares Outstanding			94.50	97.25	100.00	100.00	100.00	
Capital Expenditures			$779.6	$814.5	$850.0	$850.0	$850.0	49.78%
Net Plant		$8,325.0						
Southern Company	SO							
Capital Spending per Share			$7.85	$7.68	$7.50	$7.50	$7.50	
Common Shares Outstanding			1070.00	1070.00	1070.00	1070.00	1070.00	
Capital Expenditures			$8,399.5	$8,212.3	$8,025.0	$8,025.0	$8,025.0	42.76%
Net Plant		$95,150.0						
Xcel Energy Inc.	XEL							
Capital Spending per Share			$9.00	$9.00	$9.00	$9.00	$9.00	
Common Shares Outstanding			550.00	555.50	561.00	561.00	561.00	
Capital Expenditures			$4,950.0	$4,999.5	$5,049.0	$5,049.0	$5,049.0	52.04%
Net Plant		$48,225.0						
Evergy Central	Evergy Central							
Capital Expenditures [8]			$1,215.36	$1,215.36	$1,215.36	$1,215.36	$1,215.36	63.87%
Net Plant [9]		$9,514.3						

Notes:
[1] - [6] Source: Value Line, dated November 11, 2022, December 9, 2022, January 20, 2023.
[7] Equals (Column [2] + [3] + [4] + [5] + [6]) / Column [1]
[8] Provided by the Companies
[9] Provided by the Companies

EVERGY CENTRAL - PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF NET PLANT



	Company	Ticker	Projected CAPEX / 2022 Net Plant [1]
1	ALLETE, Inc.	ALE	39.59%
2	NorthWestern Corporation	NWE	40.09%
3	Southern Company	SO	42.76%
4	Avista Corporation	AVA	45.56%
5	OGE Energy Corporation	OGE	45.96%
6	Entergy Corporation	ETR	47.42%
7	Alliant Energy Corporation	LNT	48.42%
9	Xcel Energy Inc.	XEL	52.04%
10	American Electric Power Company, Inc.	AEP	53.51%
11	Duke Energy Corporation	DUK	54.78%
12	IDACORP, Inc.	IDA	55.72%
13	Ameren Corporation	AEE	56.89%
14	Otter Tail Corporation	OTTR	58.84%
15	CMS Energy Corporation	CMS	61.36%
16	Evergy Central	Evergy Central	63.87%
17	NextEra Energy, Inc.	NEE	86.90%
	Proxy Group Median		52.04%
	The Companies as % of the Median		1.23

Notes:
[1] Exhibit No. AEB-8, p. 3-4, col. [7]

REGULATORY RISK ASSESSMENT

Company	Operating Subsidiary	State	Utility Type	[1] Test Year Convention	[2] Revenue Stabilization: Revenue Decoupling	[3] Revenue Stabilization: Formula-Based Rates	[4] Revenue Stabilization: Straight Fixed Variable Rate Design	[5] Revenue Stabilization: Overall Revenue Stabilization	[6] Capital Cost Recovery: Capital Cost Recovery Mechanism	[7] Capital Cost Recovery: CWIP In Rate Base/ Equivalent	[8] Capital Cost Recovery: Overall Capital Cost Recovery
ALLETE, Inc.	ALLETE (Minnesota Power)	Minnesota	Electric	Fully Forecast	No	No	No	No	Yes	Yes	Yes
Alliant Energy Corporation	Interstate Power & Light Co.	Iowa	Electric	Historical	No	No	No	No	No	No	No
	Interstate Power & Light Co.	Iowa	Gas	Historical	No	No	No	No	No	No	No
	Wisconsin Power & Light Co.	Wisconsin	Electric	Fully Forecast	No	No	No	No	No	Yes	Yes
	Wisconsin Power & Light Co.	Wisconsin	Gas	Fully Forecast	No	No	No	No	No	Yes	Yes
Ameren Corporation	Ameren Illinois Co.	Illinois	Electric	Historical	No	Yes	No	Yes	No	Yes	Yes
	Ameren Illinois Co.	Illinois	Gas	Fully Forecast	Yes	No	No	Yes	Yes	Yes	Yes
	Union Electric Co.	Missouri	Electric	Historical	Yes	No	No	Yes	Yes	No	Yes
	Union Electric Co.	Missouri	Gas	Historical	Yes	No	No	Yes	Yes	No	Yes
American Electric Power Company, Inc.	Southwestern Electric Power Co.	Arkansas	Electric	Historical	Yes	Yes	No	Yes	Yes	Yes	Yes
	Indiana Michigan Power Co.	Indiana	Electric	Fully Forecast	Yes	No	No	Yes	Yes	Yes	Yes
	Kentucky Power Co.	Kentucky	Electric	Fully Forecast	Yes	No	No	Yes	No	No	No
	Southwestern Electric Power Co.	Louisiana	Electric	Historical	Yes	Yes	No	Yes	No	Yes	Yes
	Indiana Michigan Power Co.	Michigan	Electric	Fully Forecast	No	No	No	No	No	Yes	Yes
	Ohio Power Co.	Ohio	Electric	Partially Forecast	Yes	No	No	Yes	Yes	Yes	Yes
	Public Service Co. of Oklahoma	Oklahoma	Electric	Historical	Yes	No	No	Yes	Yes	Yes	Yes
	Kingsport Power Co.	Tennessee	Electric	Fully Forecast	No	No	No	No	No	No	No
	AEP Texas	Texas	Electric	Historical	No	No	No	No	Yes	No	Yes
	Southwestern Electric Power Co.	Texas	Electric	Historical	No	No	No	No	Yes	No	Yes
	Appalachian Power Co.	Virginia	Electric	Historical	No	No	No	No	Yes	Yes	Yes
	Appalachian Power Co./Wheeling Power Co.	West Virginia	Electric	Historical	No	No	No	No	No	No	No
Avista Corporation	Alaska Electric Light and Power Co.	Alaska	Electric	Historical	No	No	No	No	No	No	No
	Avista Corp.	Idaho	Electric	Historical	Yes	No	No	Yes	No	Yes	Yes
	Avista Corp.	Idaho	Gas	Historical	Yes	No	No	Yes	No	Yes	Yes
	Avista Corp.	Oregon	Gas	Fully Forecast	Yes	No	No	Yes	No	No	No
	Avista Corp.	Washington	Electric	Historical	Yes	No	No	Yes	No	Yes	Yes
	Avista Corp.	Washington	Gas	Historical	Yes	No	No	Yes	No	Yes	Yes
CMS	Consumers Energy Co.	Michigan	Electric	Fully Forecast	No	No	No	No	No	Yes	No
	Consumers Energy Co.	Michigan	Gas	Fully Forecast	Yes	No	No	Yes	No	Yes	No
Duke Energy Corporation	Duke Energy Florida LLC	Florida	Electric	Fully Forecast	No	No	No	No	Yes	Yes	Yes
	Duke Energy Indiana LLC	Indiana	Electric	Historical	Yes	No	No	Yes	Yes	Yes	Yes
	Duke Energy Kentucky Inc.	Kentucky	Electric	Fully Forecast	Yes	No	No	Yes	No	No	No
	Duke Energy Kentucky Inc.	Kentucky	Gas	Fully Forecast	Yes	No	No	Yes	No	No	No
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	North Carolina	Electric	Historical	No	No	No	No	No	Yes	Yes
	Piedmont Natural Gas Co. Inc.	North Carolina	Gas	Historical	Yes	No	No	Yes	Yes	Yes	Yes
	Duke Energy Ohio Inc.	Ohio	Electric	Partially Forecast	Yes	No	No	Yes	Yes	Yes	Yes
	Duke Energy Ohio Inc.	Ohio	Gas	Partially Forecast	No	No	Yes	Yes	Yes	Yes	Yes
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	South Carolina	Electric	Historical	No	No	No	No	No	Yes	Yes
	Piedmont Natural Gas Co. Inc.	South Carolina	Gas	Historical	Yes	No	No	Yes	No	Yes	Yes
	Piedmont Natural Gas Co. Inc.	Tennessee	Gas	Fully Forecast	Yes	No	No	Yes	Yes	No	Yes
Entergy Corporation	Entergy Arkansas LLC	Arkansas	Electric	Fully Forecast	Yes	Yes	No	Yes	Yes	Yes	Yes
	Entergy New Orleans LLC	Louisiana-NOCC	Electric	Partially Forecast	Yes	Yes	No	Yes	Yes	No	Yes
	Entergy New Orleans LLC	Louisiana-NOCC	Gas	Partially Forecast	No	Yes	No	Yes	No	No	No
	Entergy Louisiana LLC	Louisiana	Electric	Historical	Yes	Yes	No	Yes	Yes	Yes	Yes
	Entergy Louisiana LLC	Louisiana	Gas	Historical	Yes	Yes	No	Yes	Yes	Yes	Yes
	Entergy Mississippi LLC	Mississippi	Electric	Fully Forecast	Yes	Yes	No	Yes	No	Yes	Yes
	Entergy Texas Inc.	Texas	Electric	Historical	No	No	No	No	Yes	No	Yes
IDACORP, Inc.	Idaho Power Co.	Idaho	Electric	Partially Forecast	Yes	No	No	Yes	No	Yes	Yes
	Idaho Power Co.	Oregon	Electric	Partially Forecast	No	No	No	No	No	No	No
NextEra Energy, Inc.	Florida Power & Light Co.	Florida	Electric	Fully Forecast	No	No	No	No	Yes	Yes	Yes
	Gulf Power Co.	Florida	Electric	Fully Forecast	No	No	No	No	Yes	Yes	Yes
	Pivotal Utility Holdings Inc.	Florida	Gas	Fully Forecast	No	No	No	No	Yes	Yes	Yes
	Lone Star Transmission LLC	Texas	Electric	Historical	No	No	No	No	Yes	No	Yes
NorthWestern Corporation	NorthWestern Corporation	Montana	Electric	Historical	Yes	No	No	Yes	No	No	No
	NorthWestern Corporation	Montana	Gas	Historical	No	No	No	No	No	No	No
	NorthWestern Corporation	Nebraska	Gas	Historical	No	No	No	No	No	Yes	Yes
	NorthWestern Corporation	South Dakota	Electric	Historical	No	No	No	No	No	Yes	Yes
	NorthWestern Corporation	South Dakota	Gas	Historical	No	No	No	No	No	Yes	Yes

REGULATORY RISK ASSESSMENT

				[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
					Revenue Stabilization				Capital Cost Recovery		
Company	Operating Subsidiary	State	Utility Type	Test Year Convention	Revenue Decoupling	Formula-Based Rates	Straight Fixed Variable Rate Design	Overall Revenue Stabilization	Capital Cost Recovery Mechanism	CWIP In Rate Base/ Equivalent	Overall Capital Cost Recovery
OGE Energy Corporation	Oklahoma Gas and Electric Co.	Arkansas	Electric	Historical	Yes	Yes	No	Yes	No	Yes	Yes
	Oklahoma Gas & Electric Co.	Oklahoma	Electric	Historical	Yes	No	No	Yes	Yes	Yes	Yes
Otter Tail Corporation	Otter Tail Power Co.	Minnesota	Electric	Fully Forecast	No	No	No	No	No	Yes	Yes
	Otter Tail Power Co.	North Dakota	Electric	Fully Forecast	No	No	No	No	Yes	Yes	Yes
	Otter Tail Power Co.	South Dakota	Electric	Historical	No	No	No	No	Yes	Yes	Yes
Portland General Electric Company	Portland General Electric Co.	Oregon	Electric	Fully Forecast	Yes	No	No	Yes	Yes	No	Yes
Southern Company	Alabama Power Co.	Alabama	Electric	Fully Forecast	No	Yes	No	Yes	Yes	No	Yes
	Georgia Power Co.	Georgia	Electric	Fully Forecast	No	Yes	No	Yes	Yes	Yes	Yes
	Atlanta Gas & Light Co.	Georgia	Gas	Fully Forecast	No	Yes	Yes	Yes	Yes	Yes	Yes
	Northern Illinois Gas Co.	Illinois	Gas	Fully Forecast	Yes	No	No	Yes	Yes	Yes	Yes
	Mississippi Power Co.	Mississippi	Electric	Fully Forecast	Yes	Yes	No	Yes	No	Yes	Yes
	Chattanooga Gas Co.	Tennessee	Gas	Fully Forecast	Yes	Yes	No	Yes	No	No	No
	Virginia Natural Gas Inc.	Virginia	Gas	Historical	Yes	No	No	Yes	Yes	Yes	Yes
Xcel Energy Inc.	Public Service Co. of Colorado	Colorado	Electric	Historical	Yes	No	No	Yes	Yes	Yes	Yes
	Public Service Co. of Colorado	Colorado	Gas	Historical	Yes	No	No	Yes	Yes	Yes	Yes
	Northern States Power Co.-Minnesota	Minnesota	Electric	Fully Forecast	Yes	Yes	No	Yes	No	Yes	Yes
	Northern States Power Co.-Minnesota	Minnesota	Gas	Fully Forecast	No	No	No	No	Yes	Yes	Yes
	Southwestern Public Service Co.	New Mexico	Electric	Historical	No	No	No	No	No	No	No
	Northern States Power Co.-Minnesota	North Dakota	Electric	Fully Forecast	No	No	No	No	Yes	Yes	Yes
	Northern States Power Co.-Minnesota	North Dakota	Gas	Fully Forecast	No	No	Yes	Yes	No	Yes	Yes
	Northern States Power Co.-Minnesota	South Dakota	Electric	Historical	Yes	No	No	Yes	Yes	Yes	Yes
	Southwestern Public Service Co.	Texas	Electric	Historical	No	No	No	No	Yes	No	Yes
	Northern States Power Co.-Wisconsin	Wisconsin	Electric	Fully Forecast	No	No	No	No	No	Yes	Yes
	Northern States Power Co.-Wisconsin	Wisconsin	Gas	Fully Forecast	No	No	No	No	No	Yes	Yes
Proxy Group Average			Fully Forecast	35				Yes 47			65
			Partially Forecast	7				No 35			17
			Historical	40							
			Forecast	51.22%				% Yes 57.3%			79.3%
Evergy, Inc.	Evergy Metro [9]	Kansas	Electric	Historical	No	No	No	No	Yes		Yes
Evergy, Inc.	Evergy Central [9]	Kansas	Electric	Historical	Yes	No	No	Yes	Yes		Yes

Notes:
[1] Regulatory Research Associates, effective as of December 31, 2022
[2] S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022. Operating subsidiaries not covered in this report were excluded from this exhibit. A designation of "Yes" indicates full or partial decoupling.
[3] - [4] Form 10-K; company tariffs; S&P Global Market Intelligence
[5] If either [2], [3], or [4] equals "No", then "No"; if not, then "Yes"
[6] S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022. Operating subsidiaries not covered in this report were excluded from this exhibit. A designation of "Yes" indicates full or partial decoupling.
[7] S&P Capital IQ Pro
[8] If [7] of [8] equals "Yes", then "Yes"; if not, then "No"
[9] Data provided by the Companies

COMPARISON OF EVERGY METRO / EVERGY KANSAS CITY AND PROXY GROUP COMPANIES
RRA JURISDICTIONAL RANKINGS

		[1]	[2]
		RRA	
		Rank	Numeric Rank
ALLETE, Inc.	Minnesota	Average / 2	5
	North Dakota	Average / 1	4
Alliant Energy Corporation	Iowa	Above Average / 3	3
	Minnesota	Average / 2	5
	Wisconsin	Above Average / 3	3
Ameren Corporation	Iowa	Above Average / 3	3
	Illinois	Average / 2	5
	Missouri	Average / 3	6
American Electric Power Company, Inc.	Arkansas	Average / 1	4
	Indiana	Average / 1	4
	Kentucky	Average / 2	5
	Louisiana (PSC)	Average / 2	5
	Michigan	Above Average / 3	3
	Ohio	Average / 3	6
	Oklahoma	Average / 2	5
	Texas (PUC)	Average / 3	6
	Virginia	Average / 1	4
	West Virginia	Below Average / 2	8
Avista Corporation	Alaska	Below Average / 1	7
CMS Energy Corporation	Michigan	Above Average / 3	3
Duke Energy Corporation	Florida	Above Average / 2	2
	Indiana	Average / 1	4
	Kentucky	Average / 2	5
	North Carolina	Above Average / 3	3
	Ohio	Average / 3	6
	South Carolina	Average / 3	6
Entergy Corporation	Arkansas	Average / 1	4
	Louisiana (PSC)	Average / 2	5
	Louisiana (NOCC)	Average / 3	6
	Mississippi	Above Average / 3	3
	Texas (PUC)	Average / 3	6
IDACORP, Inc.	Idaho	Average / 2	5
	Nevada	Average / 2	5
	Oregon	Average / 2	5
	Wyoming	Average / 2	5
NextEra Energy, Inc.	Florida	Above Average / 2	2
	Georgia	Above Average / 2	2
NorthWestern Corporation	Iowa	Above Average / 3	3
	Montana	Below Average / 1	7
	North Dakota	Average / 1	4
	South Dakota	Average / 2	5
	Wyoming	Average / 2	5
OGE Energy Corp.	Oklahoma	Average / 2	5
Otter Tail Corporation	Minnesota	Average / 2	5
	North Dakota	Average / 1	4
	South Dakota	Average / 2	5
Portland General Electric Company	Montana	Below Average / 1	7
	Oregon	Average / 2	5
	Washington	Average / 3	6
The Southern Company	Alabama	Above Average / 1	1
	Georgia	Above Average / 2	2
	Mississippi	Above Average / 3	3
Xcel Energy Inc.	Colorado	Average / 1	4
	Michigan	Above Average / 3	3
	Minnesota	Average / 2	5
	North Dakota	Average / 1	4
	New Mexico	Below Average / 2	8
	South Dakota	Average / 2	5
	Texas (PUC)	Average / 3	6
	Wisconsin	Above Average / 3	3
Proxy Group Average		Average / 1 to Average / 2	4.55
Evergy Metro / Evergy Kansas City	Kansas	Below Average / 1	7

Ranking Legend

Description	Value
Below Average / 3	9
Below Average / 2	8
Below Average / 1	7
Average / 3	6
Average / 2	5
Average / 1	4
Above Average / 3	3
Above Average / 2	2
Above Average / 1	1

Notes
[1] Source: State Regulatory Evaluations, Regulatory Research Associates, as of September 8, 2021.
[2] AA/1= 1, AA/2= 2, AA/3= 3, A/1= 4, A/2= 5, A/3=6, BA/1= 7, BA/2= 8, BA/3= 9

COMPARISON OF EVERGY METRO / EVERGY KANSAS CITY AND PROXY GROUP COMPANIES
S&P JURISDICTIONAL RANKINGS

		[1] S&P Rank	[2] Numeric Rank
ALLETE, Inc.	Minnesota	Highly Credit Supportive	2
	North Dakota	Highly Credit Supportive	2
Alliant Energy Corporation	Iowa	Most Credit Supportive	1
	Minnesota	Highly Credit Supportive	2
	Wisconsin	Most Credit Supportive	1
Ameren Corporation	Iowa	Most Credit Supportive	1
	Illinois	Very Credit Supportive	3
	Missouri	Very Credit Supportive	3
American Electric Power Company, Inc.	Arkansas	Highly Credit Supportive	2
	Indiana	Highly Credit Supportive	2
	Kentucky	Most Credit Supportive	1
	Louisiana (PSC)	Highly Credit Supportive	2
	Michigan	Most Credit Supportive	1
	Ohio	Very Credit Supportive	3
	Oklahoma	Very Credit Supportive	3
	Texas (PUC)	Very Credit Supportive	3
	Virginia	Highly Credit Supportive	2
	West Virginia	Very Credit Supportive	3
Avista Corporation	Alaska	More Credit Supportive	4
CMS Energy Corporation	Michigan	Most Credit Supportive	1
Duke Energy Corporation	Florida	Most Credit Supportive	1
	Indiana	Highly Credit Supportive	2
	Kentucky	Most Credit Supportive	1
	North Carolina	Highly Credit Supportive	2
	Ohio	Very Credit Supportive	3
	South Carolina	More Credit Supportive	4
Entergy Corporation	Arkansas	Highly Credit Supportive	2
	Louisiana (PSC)	Highly Credit Supportive	2
	Louisiana (NOCC)	More Credit Supportive	4
	Mississippi	More Credit Supportive	4
	Texas (PUC)	Very Credit Supportive	3
IDACORP, Inc.	Idaho	Very Credit Supportive	3
	Nevada	Very Credit Supportive	3
	Oregon	Highly Credit Supportive	2
	Wyoming	Very Credit Supportive	3
NextEra Energy, Inc.	Florida	Most Credit Supportive	1
	Georgia	Highly Credit Supportive	2
NorthWestern Corporation	Iowa	Most Credit Supportive	1
	Montana	More Credit Supportive	4
	North Dakota	Highly Credit Supportive	2
	South Dakota	Very Credit Supportive	3
	Wyoming	Very Credit Supportive	3
OGE Energy Corp.	Oklahoma	Very Credit Supportive	3
Otter Tail Corporation	Minnesota	Highly Credit Supportive	2
	North Dakota	Highly Credit Supportive	2
	South Dakota	Very Credit Supportive	3
Portland General Electric Company	Montana	More Credit Supportive	4
	Oregon	Highly Credit Supportive	2
	Washington	Very Credit Supportive	3
The Southern Company	Alabama	Most Credit Supportive	1
	Georgia	Highly Credit Supportive	2
	Mississippi	More Credit Supportive	4
Xcel Energy Inc.	Colorado	Very Credit Supportive	3
	Michigan	Most Credit Supportive	1
	Minnesota	Highly Credit Supportive	2
	North Dakota	Highly Credit Supportive	2
	New Mexico	Credit Supportive	5
	South Dakota	Very Credit Supportive	3
	Texas (PUC)	Very Credit Supportive	3
	Wisconsin	Most Credit Supportive	1
Proxy Group Average		Very Credit Supportive to Highly Credit Supportive	2.41
Evergy Metro / Evergy Kansas City	Kansas	Highly Credit Supportive	2

Ranking Legend

Description	Value
Most credit supportive	1
Highly credit supportive	2
Very credit supportive	3
More credit supportive	4
Credit supportive	5

Notes
[1] S&P Global Ratings, "North American Utility Regulatory Jurisdictions Updates: Oklahoma Has Been Revised to Very Credit Supportive, Developments Continue Elsewhere," July 20, 2022.
[2] Most Credit Supp. = 1, Highly Credit Supp. = 2, Very Credit Supp. = 3, More Credit Supp. = 4, Credit Supp. = 5

CAPITAL STRUCTURE ANALYSIS

Proxy Group Company	Ticker	Most Recent 8 Quarters (2020Q4 - 2022Q3) Common Equity Ratio	Long-Term Debt Ratio	Preferred Equity Ratio	Short-term Debt Ratio	Total Capitalization
ALLETE, Inc.	ALE	57.22%	42.69%	0.00%	0.10%	100.00%
Alliant Energy Corporation	LNT	51.34%	46.60%	0.79%	1.26%	100.00%
Ameren Corporation	AEE	52.39%	45.62%	0.62%	1.37%	100.00%
American Electric Power Company, Inc.	AEP	46.98%	51.43%	0.00%	1.59%	100.00%
Avista Corporation	AVA	60.92%	39.02%	0.00%	0.07%	100.00%
CMS Energy Corporation	CMS	51.87%	47.18%	0.21%	0.74%	100.00%
Duke Energy Corporation	DUK	52.33%	46.07%	0.00%	1.59%	100.00%
Entergy Corporation	ETR	46.19%	53.71%	0.10%	0.00%	100.00%
IDACORP, Inc.	IDA	54.07%	45.65%	0.28%	0.00%	100.00%
NextEra Energy, Inc.	NEE	60.17%	38.36%	0.00%	1.48%	100.00%
NorthWestern Corporation	NWE	47.68%	52.04%	0.00%	0.28%	100.00%
OGE Energy Corp.	OGE	53.03%	45.19%	0.00%	1.78%	100.00%
Otter Tail Corporation	OTTR	52.85%	44.56%	0.00%	2.59%	100.00%
Portland General Electric Company	POR	45.35%	53.38%	0.00%	1.27%	100.00%
The Southern Company	SO	54.16%	44.72%	0.52%	0.60%	100.00%
Xcel Energy Inc.	XEL	54.65%	44.33%	0.00%	1.02%	100.00%
Average		52.58%	46.28%	0.16%	0.98%	
Median		52.62%	45.64%	0.00%	1.14%	
Maximum		60.92%	53.71%	0.79%	2.59%	
Minimum		45.35%	38.36%	0.00%	0.00%	

Notes:
[1] Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of the operating subsidiaries.
[2] Electric and Natural Gas operating subsidiaries with data listed as N/A from S&P Capital IQ have been excluded from the analysis.

EVERGY KANSAS CENTRAL ELECTRIC UTILITY LONG-TERM DEBT SCHEDULE
PROJECTED JUNE 30, 2023

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Description	Date of Settlement	Date of Maturity	Interest Rate	Principal Amount of Issue	Net Proceeds	Yield to Maturity	Moody's A Utility Bond Index on Settlement date	Moody's Baa Utility Bond index on Settlement date	Weighted Cost of Debt	Weighted Cost at Moody's A Utility Bond Index	Weighted Cost at Moody's Baa Utility Bond Index
WR 2015 FMB 3.25% Due 2025	11/13/15	12/01/25	3.2500%	250,000,000	247,949,597	3.3466%	4.4300%	5.5900%	0.19%	0.26%	0.32%
WR 2016 FMB 2.55% Due 2026	06/20/16	07/01/26	2.5500%	350,000,000	345,238,685	2.7057%	3.7900%	4.4700%	0.21%	0.31%	0.36%
KGE 1994 La Cygne PCB Variable Due 2027	04/28/94	04/15/27	3.5400%	21,940,000	20,763,492	3.8276%	8.2200%	8.4800%	0.02%	0.04%	0.04%
WR 2017 FMB 3.10% Due 2027	03/06/17	04/01/27	3.1000%	300,000,000	296,205,083	3.2481%	4.2300%	4.6100%	0.21%	0.29%	0.32%
KGE 2016 PCB 2.50% Due 2031	06/01/16	06/01/31	2.5000%	50,000,000	48,015,631	2.8265%	3.9100%	4.6100%	0.03%	0.05%	0.05%
WR 1994 St. Marys PCB Variable Due 2032	04/28/94	04/15/32	3.5400%	45,000,000	43,694,021	3.6825%	8.2200%	8.4800%	0.04%	0.09%	0.09%
WR 1994 Wamego PCB Variable Due 2032	04/28/94	04/15/32	3.5400%	30,500,000	29,576,046	3.6889%	8.2200%	8.4800%	0.02%	0.06%	0.06%
KGE 1994 St. Marys PCB Variable Due 2032	04/28/94	04/15/32	3.6600%	14,500,000	14,015,257	3.8277%	8.2200%	8.4800%	0.01%	0.03%	0.03%
KGE 1994 Wamego PCB Variable Due 2032	04/28/94	04/15/32	3.6600%	10,000,000	9,647,351	3.8371%	8.2200%	8.4800%	0.01%	0.02%	0.02%
KGE 2007 FMB 6.53% Due 2037	10/15/07	12/15/37	6.5300%	175,000,000	173,937,727	6.5756%	6.2300%	6.4600%	0.26%	0.25%	0.26%
KGE 2008 FMB 6.64% Due 2038	05/15/08	05/15/38	6.6400%	100,000,000	100,175,656	6.6264%	6.2600%	6.7700%	0.15%	0.14%	0.16%
WR 2012 FMB 4.125% Due 2042	03/01/12	03/01/42	4.1250%	550,000,000	511,982,336	4.5496%	4.3600%	5.0500%	0.52%	0.55%	0.64%
WR 2013 FMB 4.10% Due 2043	03/28/13	04/01/43	4.1000%	430,000,000	417,173,662	4.2774%	4.1700%	4.6800%	0.41%	0.41%	0.47%
WR 2013 FMB 4.625% Due 2043	08/19/13	09/01/43	4.6250%	250,000,000	246,658,133	4.7085%	4.8700%	5.4300%	0.27%	0.28%	0.31%
KGE 2014 FMB 4.30% Due 2044	07/02/14	07/15/44	4.3000%	250,000,000	246,453,918	4.3853%	4.3500%	4.7600%	0.25%	0.25%	0.28%
WR 2015 FMB 4.25% Due 2045	11/13/15	12/01/45	4.2500%	300,000,000	233,257,431	5.8269%	4.4300%	5.5900%	0.29%	0.31%	0.39%
WR 2019 FMB 3.25% Due 2049	08/19/19	09/01/49	3.2500%	300,000,000	294,168,487	3.3531%	3.3100%	3.6500%	0.23%	0.23%	0.25%
WR 2020 FMB 3.45% Due 2050	04/09/20	04/15/50	3.4500%	500,000,000	477,284,920	3.7019%	3.4700%	4.0800%	0.40%	0.40%	0.47%
WR 2022 FMB 5.50% Due 2053	03/15/23	03/15/53	5.5000%	400,000,000	395,680,000	5.5745%	5.3800%	5.6700%	0.51%	0.50%	0.52%
Total				**4,326,940,000**	**4,151,877,433**				**4.03%**	**4.47%**	**5.05%**

Notes:
[1] - [6]: Provided by the company.
[7], [8]: Bloomberg, CapitalIQ.

EVERGY KANSAS CENTRAL ELECTRIC UTILITY LONG-TERM DEBT SCHEDULE
PROJECTED JUNE 30, 2023

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
				Principal			Moody's A Utility	Moody's Baa Utility	Weighted	Weighted	Weighted
	Date of	Date of	Interest	Amount	Net	Yield to	Bond Index	Bond index	Cost of Debt	Cost at Moody's	Cost at Moody's
Description	Settlement	Maturity	Rate	of Issue	Proceeds	Maturity	on Settlement date	on Settlement date		A Utility Bond Index	Baa Utility Bond Index
WR 2015 FMB 3.25% Due 2025	11/13/15	12/01/25	3.2500%	250,000,000	247,949,597	3.3466%	4.4300%	5.5900%	0.19%	0.26%	0.32%
WR 2016 FMB 2.55% Due 2026	06/20/16	07/01/26	2.5500%	350,000,000	345,238,685	2.7057%	3.7900%	4.4700%	0.21%	0.31%	0.36%
KGE 1994 La Cygne PCB Variable Due 2027	04/28/94	04/15/27	3.5400%	21,940,000	20,763,492	3.8276%	8.2200%	8.4800%	0.02%	0.04%	0.04%
WR 2017 FMB 3.10% Due 2027	03/06/17	04/01/27	3.1000%	300,000,000	296,205,083	3.2481%	4.2300%	4.6100%	0.21%	0.29%	0.32%
KGE 2016 PCB 2.50% Due 2031	06/01/16	06/01/31	2.5000%	50,000,000	48,015,631	2.8265%	3.9100%	4.6100%	0.03%	0.05%	0.05%
WR 1994 St. Marys PCB Variable Due 2032	04/28/94	04/15/32	3.5400%	45,000,000	43,694,021	3.6825%	8.2200%	8.4800%	0.04%	0.09%	0.09%
WR 1994 Wamego PCB Variable Due 2032	04/28/94	04/15/32	3.5400%	30,500,000	29,576,046	3.6889%	8.2200%	8.4800%	0.02%	0.06%	0.06%
KGE 1994 St. Marys PCB Variable Due 2032	04/28/94	04/15/32	3.6600%	14,500,000	14,015,257	3.8277%	8.2200%	8.4800%	0.01%	0.03%	0.03%
KGE 1994 Wamego PCB Variable Due 2032	04/28/94	04/15/32	3.6600%	10,000,000	9,647,351	3.8371%	8.2200%	8.4800%	0.01%	0.02%	0.02%
KGE 2007 FMB 6.53% Due 2037	10/15/07	12/15/37	6.5300%	175,000,000	173,937,727	6.5756%	6.2300%	6.4600%	0.26%	0.25%	0.26%
KGE 2008 FMB 6.64% Due 2038	05/15/08	05/15/38	6.6400%	100,000,000	100,175,656	6.6264%	6.2600%	6.7700%	0.15%	0.14%	0.16%
WR 2012 FMB 4.125% Due 2042	03/01/12	03/01/42	4.1250%	550,000,000	511,982,336	4.5496%	4.3600%	5.0500%	0.52%	0.55%	0.64%
WR 2013 FMB 4.10% Due 2043	03/28/13	04/01/43	4.1000%	430,000,000	417,173,662	4.2774%	4.1700%	4.6800%	0.41%	0.41%	0.47%
WR 2013 FMB 4.625% Due 2043	08/19/13	09/01/43	4.6250%	250,000,000	246,658,133	4.7085%	4.8700%	5.4300%	0.27%	0.28%	0.31%
KGE 2014 FMB 4.30% Due 2044	07/02/14	07/15/44	4.3000%	250,000,000	246,453,918	4.3853%	4.3500%	4.7600%	0.25%	0.25%	0.28%
WR 2015 FMB 4.25% Due 2045	11/13/15	12/01/45	4.2500%	300,000,000	233,257,431	5.8269%	4.4300%	5.5900%	0.29%	0.31%	0.39%
WR 2019 FMB 3.25% Due 2049	08/19/19	09/01/49	3.2500%	300,000,000	294,168,487	3.3531%	3.3100%	3.6500%	0.23%	0.23%	0.25%
WR 2020 FMB 3.45% Due 2050	04/09/20	04/15/50	3.4500%	500,000,000	477,284,920	3.7019%	3.4700%	4.0800%	0.40%	0.40%	0.47%
WR 2022 FMB 5.50% Due 2053	03/15/23	03/15/53	5.5000%	400,000,000	395,680,000	5.5745%	5.3800%	5.6700%	0.51%	0.50%	0.52%
Total				**4,326,940,000**	**4,151,877,433**				**4.03%**	**4.47%**	**5.05%**

Notes:
[1] - [6]: Provided by the company.
[7], [8]: Bloomberg, CapitalIQ.

EVERGY KANSAS CAPITAL STRUCTURE
PROJECTED JUNE 30, 2023

	[1]	[2]	[3]	[4]
	Balance	**Weight**	**Rate**	**Rate of Return**
EVERGY KANSAS METRO				
Long-term Debt*	2,926,400,750	48.00%	4.372%	2.099%
Common Equity	3,169,665,643	52.00%	10.250%	5.330%
Total Capitalization	**6,096,066,393**	**100.00%**		**7.428%**
EVERGY KANSAS CENTRAL				
Long-term Debt*	4,285,963,478	47.96%	4.347%	2.085%
Common Equity	4,650,135,150	52.04%	10.250%	5.334%
Total Capitalization	**8,936,098,628**	**100.00%**		**7.419%**

Notes:

[1]: Provided by the companies.

[2] = [1] / Total Capitalization.

[3]: Weighted Average Cost of Capital for specific financing type.

[4] = [2] * [3].

*Includes unamortized debt expenses and discounts. There are no current maturities of long-term debt.

COMMONWEALTH OF MASSACHUSETTS)
) ss:
COUNTY OF SUFFOLK)

VERIFICATION

Ann Bulkley, being duly sworn upon his oath deposes and states that she is a Principal with The Brattle Group, that she has read and is familiar with the foregoing Direct Testimony, and attests that the statements contained therein are true and correct to the best of her knowledge, information and belief.

Ann Bulkley

Subscribed and sworn to before me this 13 day of April, 2023.

Notary Public

My Appointment Expires: 6/30/2028

Gerard M. Rooney
NOTARY PUBLIC
Commonwealth of
Massachusetts
My Commission Expires
6/30/2028