BEFORE THE
STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

IN THE MATTER OF THE PETITION OF
NEW JERSEY-AMERICAN WATER COMPANY, INC.
FOR APPROVAL OF INCREASED TARIFF RATES AND
CHARGES FOR WATER AND WASTEWATER SERVICE,
CHANGE IN DEPRECIATION RATES, AND
OTHER TARIFF MODIFICATIONS

BPU Docket No. WR2401____

Direct Testimony of

ANN E. BULKLEY

On Behalf of
New Jersey-American Water Company, Inc.

January 19, 2024

Exhibit P-10

NEW JERSEY-AMERICAN WATER COMPANY, INC.

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I. INTRODUCTION AND QUALIFICATIONS

1. Q. Please state your name, affiliation and 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.

2. Q. On whose behalf are you submitting this testimony?

A. I am submitting this testimony on behalf of New Jersey-American Water Company ("NJAWC" or the "Company"), a wholly-owned subsidiary of American Water Works Company Inc. ("AWK").

3. Q. Please describe your education and experience.

A. I hold a Bachelor's degree in Economics and Finance from Simmons College and a Master's degree in Economics from Boston University, with over 25 years of experience consulting to the regulated utility industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. My resume and a summary of testimony that I have filed in other proceedings are presented in more detail in Appendix A.

II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY

4. Q. Please describe the purpose of your Direct Testimony.

A. The purpose of my Direct Testimony is to present evidence and provide a recommendation regarding the appropriate return on equity ("ROE") for the

Company and to provide and assessment of the reasonableness of NJAWC's proposed capital structure for ratemaking purposes.

5. Q. Are you sponsoring any schedules in support of your Direct Testimony?

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

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

A. As discussed in more detail below, it is important to consider the results of several analytical approaches in determining a reasonable recommendation for the Company's ROE. To develop my ROE recommendation, I first developed a proxy group of utility companies. I did not limit the proxy group to water utilities, but included a broader group of utilities that face risk similar to NJAWC because a proxy group composed only of water utilities would result in a small group of companies for which data is limited. To that proxy group, I applied the Constant Growth Form of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and Bond Yield Risk Premium ("BYRP" or "Risk Premium"). My recommendation also takes into consideration the following factors:

1. NJAWC's capital expenditure program relative to the proxy group companies;
2. Flotation costs associated with AWK's recent equity issuance;
3. The risks related to environmental and water quality regulation;

4. The regulatory risk of NJAWC relative to the proxy group; and
5. NJAWC's proposed capital structure as compared to the capital structures of the proxy group companies.[1]

While I did not make specific adjustments to my recommended ROE for these factors, I did consider them in the aggregate when determining where my recommended ROE falls within the range of the analytical results.

7. 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 guidelines 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 NJAWC's cost of equity.
- Section VI explains my selection of the proxy group for NJAWC.
- Section VII describes my analyses and the analytical basis for my recommendation of the appropriate ROE for NJAWC.
- Section VIII provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for NJAWC in this case.
- Section IX provides an assessment of the reasonableness of NJAWC's proposed capital structure relative to the proxy group.
- Section X presents my conclusions and recommendations.

[1] The selection and purpose of developing a group of comparable companies will be discussed in detail in Section VI of my Direct Testimony.

III. SUMMARY OF ANALYSIS AND CONCLUSIONS

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

A. The key factors that I considered in my cost of equity ("COE") analyses and recommended ROE for the Company in this proceeding are:

- The United States Supreme Court's *Hope* and *Bluefield* decisions[2] established the standards for determining a fair and reasonable authorized ROE for public utilities, including consistency of the allowed return with the returns of other businesses having similar risk, adequacy of the return to provide access to capital and support credit quality, and the requirement that the result lead to just and reasonable rates.
- The effect of current and prospective capital market conditions on the cost of equity estimation models and on investors' return requirements.
- The results of several analytical approaches that provide estimates of the Company's cost of equity. Because the Company's authorized ROE should be a forward-looking estimate over the period during which the rates will be in effect, these analyses rely on forward-looking inputs and assumptions (*e.g.*, projected analyst growth rates in the DCF model, forecasted risk-free rate and market risk premium in the CAPM analysis).
- Although the companies in my proxy group are generally comparable to NJAWC, each company is unique, and no two companies have the exact same business and financial risk profiles. Accordingly, I considered the Company's regulatory, business, and financial risks relative to the proxy group of comparable companies in determining where the Company's ROE should fall within the reasonable range of analytical results to appropriately account for any residual differences in risk.

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

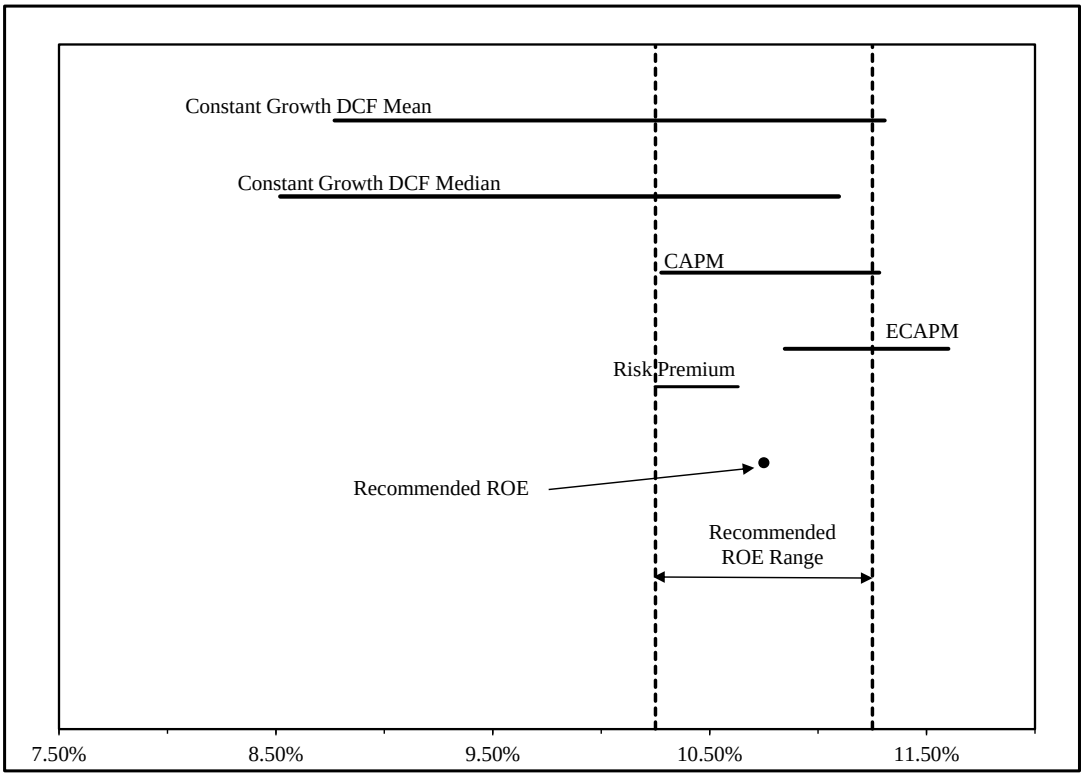
9. Q. Please explain how you considered those factors.

A. I relied on the range of results produced by the Constant Growth DCF model, the CAPM analysis, the ECAPM analysis, and the Bond Yield Plus Risk Premium analysis. As shown in Figure 1, these cost of equity estimation models produce a wide range of results. My conclusion as to the appropriate ROE for NJAWC within that range of results is based on Company's business and financial risk relative to the proxy group and my assessment of market conditions. As noted above, although the companies in my proxy group are generally comparable to NJAWC, each company is unique. Accordingly, I considered the Company's business, financial and regulatory risk in aggregate relative to that of the proxy group companies when determining where the Company's ROE should fall within the reasonable range of analytical results to appropriately account for any residual differences in risk.

10. Q. What are the results of the models that you have used to estimate the cost of equity for NJAWC?

A. Figure 1 (and Schedule AEB-1) summarizes the range of results produced by the Constant Growth DCF, CAPM, ECAPM, and Risk Premium analyses.

Figure 1: Summary of Cost of Equity Results[3]



As shown in Figure 1, the range of results produced by the models used to estimate the COE is wide. For example, the low end of the DCF results are below any ROE that has been authorized by a regulatory commission for a water utility, whereas the range set by the higher end of the DCF model overlap the results of the other risk premium-based methodologies. Further, the DCF results produce a much wider range than the rest of the COE models. While it is common to consider multiple models to estimate the COE, it is particularly important when the range of results varies considerably.

[3] DCF results exclude the results for Middlesex Water Company because they do not provide a reasonable equity risk premium over the current yield on the Moody's Baa rated utility bond index, which was 6.44 percent based on a 30-day average ending November 30, 2023.

11. Q. Are prospective capital market conditions expected to affect the results of the cost of equity for NJAWC during the period in which the rates established in this proceeding will be in effect?

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

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

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

12. Q. What is your conclusion regarding the appropriate authorized ROE for NJAWC in this proceeding?

A. Considering the analytical results presented in Figure 1, and discussed further throughout my testimony, and current and prospective capital market conditions, I

conclude that the range of reasonable ROEs for NJAWC is 10.25 to 11.25, and taking into consideration the Company's business, regulatory, and financial risk relative to the proxy group, I recommend an ROE of 10.75 percent.

13. Q. Is NJAWC's requested capital structure reasonable and appropriate?

A. Yes. The Company's proposed equity ratio of 56.30 percent is well within the range of equity ratios for the utility operating subsidiaries of the proxy group companies. Further, the Company's proposed equity ratio is reasonable considering the credit rating agencies' concerns regarding the negative effect on the cash flows and credit metrics associated with increasing interest rates, inflation and capital expenditures.

IV. REGULATORY GUIDELINES

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

A. The U.S. Supreme Court's precedent-setting *Hope* and *Bluefield* cases established the standards for determining the fairness and reasonableness of a utility's authorized ROE. Among the standards established by the Court in those cases are: (1) consistency of the return with other businesses having similar or comparable risks; (2) adequacy of the return to support credit quality and access to capital; and (3) the principle that the specific means of arriving at a fair return are not important, only that the end result leads to just and reasonable rates.[4]

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

15. Q. Is fixing a proper 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."[5] As the Court went on to explain in *Hope*, "[t]the rate-making process … involves balancing of the investor and consumer interests."[6]

16. Q. Has the State of New Jersey or the New Jersey Board of Public Utilities ("Board" or "BPU") provided similar guidance in establishing the appropriate return on common equity?

A. Yes. Section 48:2-21.25 of the 2022 New Jersey Revised Statutes states that a "Base rate case" is defined as a means of "determining the level of revenues necessary to afford the public utility an opportunity to earn a fair and reasonable rate of return on prudently incurred capital investment in the public utility's rate base."[7] In its decision in Docket No. ER12111052 for Jersey Central Power and Light Company ("JCP&L"), the Board noted the following:

> Nevertheless, it is incumbent upon this Board to define a fair rate of return for JCP&L commensurate with risks faced by similar companies, sufficient to attract capital and maintain the financial integrity of the enterprise. As the New Jersey Supreme Court has recognized, a privately owned public utility is a complex mechanism that exists to serve a public need but to do so it must have investor appeal. It must be allowed a reasonable return on its investment so that it may have

[5] *Bluefield*, 262 U.S. at 693.
[6] *Hope*, 320 U.S. at 603.
[7] 2022 New Jersey Revised Statutes, Section 48:2-21.25.

borrowing power at normal business rates to finance its day-to-day operations. [8]

This guidance is in accordance with the *Hope* and *Bluefield* decisions and the principles that I employed to estimate the ROE for the Company, including the principle that an allowed rate of return must be sufficient to enable regulated companies such as NJAWC to attract capital on reasonable terms.

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

A. A return that is adequate to attract capital at reasonable terms enables NJAWC to continue to provide safe, reliable water service efficiently while maintaining its financial integrity. That return should be commensurate with returns expected elsewhere in the market for investments of equivalent risk. If it is not, debt and equity investors will seek alternative investment opportunities for which the expected return reflects the perceived risks, thereby inhibiting NJAWC's ability to attract capital at reasonable cost. When the Company is afforded a reasonable opportunity to earn its market-based cost of capital, a fair and reasonable balance will be achieved between customers' and shareholders' interests.

[8] BPU Docket No. ER12111052, OAL Docket No. PUC16310-12, Order Adopting Initial Decision with Modifications and Clarifications, March 18, 2015, at 71; *citing* . *Daaleman v. Elizabethtown Gas Co.*, 77 N.J. 267, 272 (1978).

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

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

19. Q. Is the regulatory framework and 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.

20. Q. What are your conclusions regarding regulatory guidelines?

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 Board's order in this proceeding should establish rates that provide the Company 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 Company, which is in the interest of both customers and shareholders.

V. CAPITAL MARKET CONDITIONS

21. 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 and ECAPM. 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 in order to estimate the investor-required return for the subject company.

Regulatory commissions and analysts and recognize that current market conditions affect the results of the cost of equity estimation models. As a result, it is important to consider the effect of the market conditions on these models when determining an appropriate range for the ROE and the 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.

22. Q. What factors affect the cost of equity for regulated utilities in the current and prospective capital markets?

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

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

23. Q. What has the level of inflation been over the past few years?

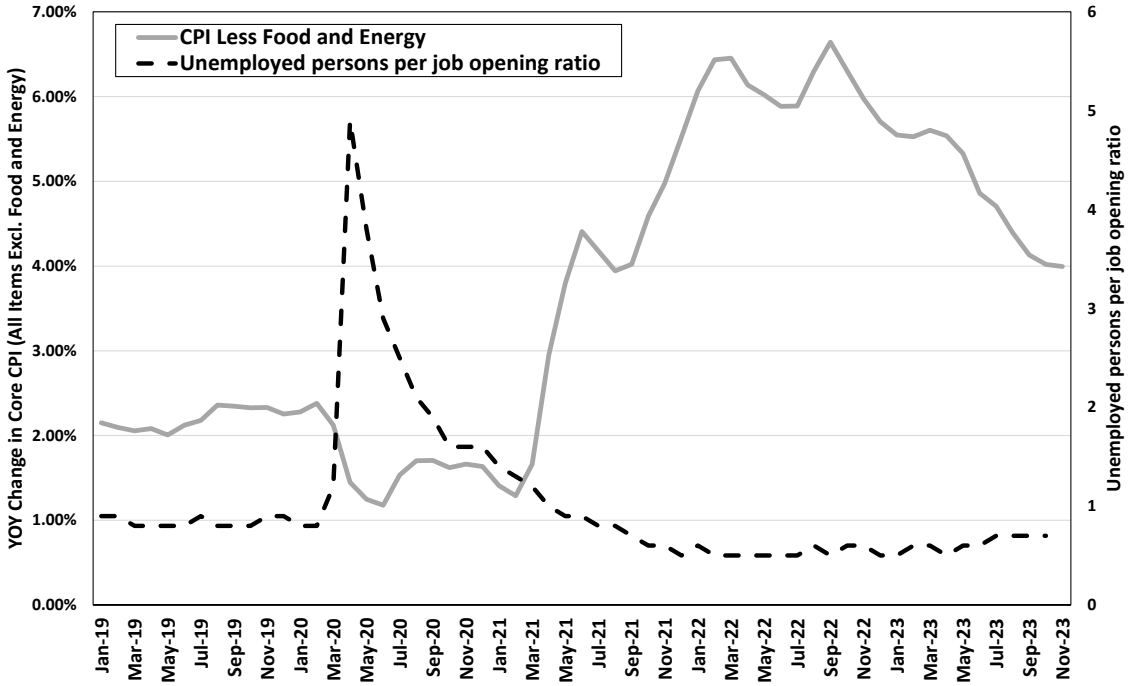
A. As shown in Figure 2**,** core inflation increased steadily beginning in early 2021, rising from 1.41 percent in January 2021 to a high of 6.64 percent in September 2022, which was the largest 12-month increase since 1982.[9] Since that time, while core inflation has declined in response to the Federal Reserve's monetary policy, it continues to remain above the Federal Reserve's target level of 2.0 percent.

In addition, as shown in Figure 2, I also considered the ratio of unemployed persons per job opening, which is currently 0.7 and has been consistently below 1.0 since 2021, despite the Federal Reserve's accelerated policy normalization. This metric

[9] Figure 2 presents the year-over-year ("YOY") change in core inflation, as measured by the Consumer Price Index ("CPI") excluding food and energy prices as published by the Bureau of Labor Statistics. I considered core inflation because it is the preferred inflation indicator of the Federal Reserve for determining the direction of monetary policy. Core inflation is preferred by the Federal Reserve because it removes the effect of food and energy prices, which can be highly volatile.

indicates sustained strength in the labor market. Given the Federal Reserve's dual mandate of maximum employment and price stability, the continued increased levels of core inflation coupled with the strength in the labor market has resulted in the Federal Reserve's sustained focus on the priority of reducing inflation.

Figure 2: Core Inflation and Unemployed Persons-to-Job Openings, January 2019 to November 2023[10]



24. 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 until 2026 and that the extent to which it maintains the restrictive monetary policy will depend on market indicators going forward. For example, Federal Reserve Chair Powell at the Federal Open Market Committee

[10] Bureau of Labor Statistics

("FOMC") meeting on December 13, 2023 observed that while inflation is off of its recent highs, it remains too high and noted that further policy firming is possible based on the data:

> Today, we decided to leave our policy interest rate unchanged and to continue to reduce our securities holdings. Given how far we have come, along with the uncertainties and risks that we face, the Committee is proceeding carefully. We will make decisions about the extent of any additional policy firming and how long policy will remain restrictive based on the totality of the incoming data, the evolving outlook, and the balance of risks.[11]

Chair Powell reiterated that the FOMC was committed to bringing inflation down to the 2 percent target level, and that while the easing of inflation has been good news, it is currently projected to take until 2026 to reach the Federal Reserve's target of 2.0 percent:

> Inflation has eased over the past year but remains above our longer-run goal of 2 percent. Based on the Consumer Price Index and other data, we estimate that total PCE prices rose 2.6 percent over the 12 months ending in November; and that, excluding the volatile food and energy categories, core PCE prices rose 3.1 percent. The lower inflation readings over the past several months are welcome, but we will need to see further evidence to build confidence that inflation is moving down sustainably toward our goal. Longer-term inflation expectations appear to remain well anchored, as reflected in a broad range of surveys of households, businesses, and forecasters, as well as measures from financial markets. As is evident from the SEP [Summary of Economic Projections], we anticipate that the process of getting inflation all the way to 2 percent will take some time. The median projection in the SEP is 2.8 percent this year, falls to 2.4 percent next year, and reaches 2 percent in 2026.[12]

[11] Federal Reserve, Transcript of Chair Powell's Press Conference, December 13, 2023, at 1.
[12] *Id.,* at 2-3.

Chair Powell noted that the FOMC members project a gradual decline in the federal funds rates over time, although remain cautious and leave open the possibility of further monetary policy tightening as required:

> While we believe that our policy rate is likely at or near its peak for this tightening cycle, the economy has surprised forecasters in many ways since the pandemic, and ongoing progress toward our 2 percent inflation objective is not assured. We are prepared to tighten policy further if appropriate. We are committed to achieving a stance of monetary policy that is sufficiently restrictive to bring inflation sustainably down to 2 percent over time, and to keeping policy restrictive until we are confident that inflation is on a path to that objective.
>
> In our SEP [Summary of Economic Projections], FOMC participants wrote down their individual assessments of an appropriate path for the federal funds rate based on what each participant judges to be the most likely scenario going forward. While participants do not view it as likely to be appropriate to raise interest rates further, neither do they want to take the possibility off the table. If the economy evolves as projected, the median participant projects that the appropriate level of the federal funds rate will be 4.6 percent at the end of 2024, 3.6 percent at the end of 2025, and 2.9 percent at the end of 2026, still above the median longer-term rate. These projections are not a Committee decision or plan; if the economy does not evolve as projected, the path for policy will adjust as appropriate to foster our maximum employment and price stability goals.[13]

V.B. The Use of Monetary Policy to Address Inflation

25. 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. Beginning in March

[13] *Id.*, at 3-4; clarification added.

2022 and through September 2023, the Federal Reserve increased the target federal funds rate through a series of increases from a range of 0.00 – 0.25 percent to a range of 5.25 percent to 5.50 percent.[14] While inflation has declined from its peak, it still is above the Federal Reserve's target of 2 percent, and therefore, as just noted, the Federal Reserve anticipates maintaining short-term interest rates higher for longer in order to achieve its goal of 2 percent inflation over the long-run.

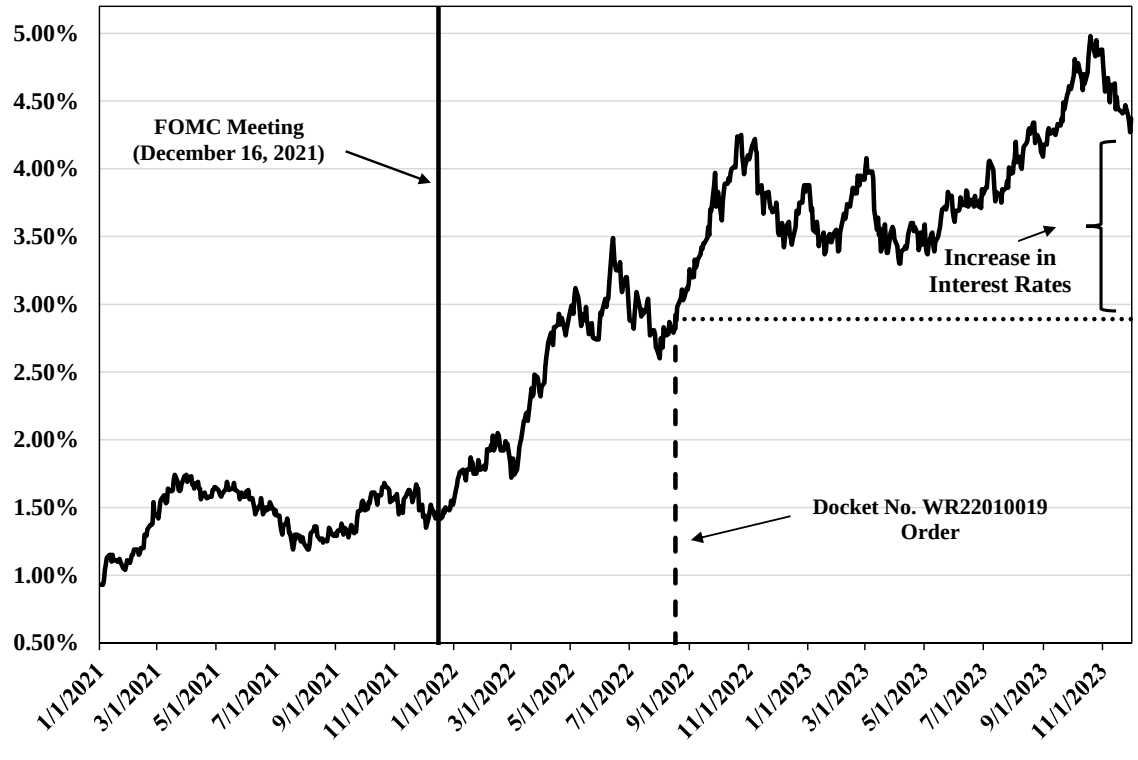
V.C. The Effect of Inflation and Monetary Policy on Interest Rates and the Investor-Required Return

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

A. Yes. As the Federal Reserve has substantially increased the federal funds rate in response to increased levels of inflation that have persisted for longer than originally projected, longer term interest rate have also increased. As shown in Figure 3, since the Federal Reserve's December 2021 meeting, the yield on 10-year Treasury bonds has approximately tripled, increasing from 1.47 percent on December 15, 2021 to 4.37 percent at the end of November 2023. Similarly, the yield on the 10-year Treasury bond has increased nearly 150 basis points since the Board's decision in the Company's last rate proceeding.

[14] https://www.federalreserve.gov/monetarypolicy/openmarket.htm.

Figure 3: 10-Year Treasury Bond Yield – January 2021 through November 2023[15]



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

A. As shown in Figure 4, at the time the Board approved the Company's settlement in its last rate proceeding, the federal funds rate was 2.33 percent, the 30-day average yield on the 30-year Treasury bond was 3.08 percent and core inflation was 6.30 percent. Since the Company's last rate proceeding, long-term interest rates have increased approximately 134 basis points as the Federal Reserve has increased the federal funds rate to combat inflation.

[15] S&P Capital IQ Pro.

Figure 4: Change in Market Conditions Since Company's Last Rate Case[16]

Docket	Date	Federal Funds Rate	30-Day Avg 30 Year Treasury Bond Yield	Core Inflation Rate	Auth'd ROE
WR22010019	8/17/2022	2.33%	3.08%	6.30%	9.60%
Current	11/30/2023	5.33%	4.76%	4.02%	

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

A. Leading equity analysts have noted that they expect the yields on long-term government bonds to remain elevated. For example, according to the most recent *Blue Chip Financial Forecasts* report, the consensus estimate of the average yields on the 10-year and 30-year Treasury bonds are 4.22 percent and 4.48 percent, respectively, through the first quarter of 2025.[17] Therefore, investors expect interest rates to remain elevated for at least the next 18 months. As a result, it is reasonable to expect that if government bond yields remain elevated, the cost of equity will be increasing above the levels experienced in the 2020 and 2021 lower interest rate environment.

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

[16] St. Louis Federal Reserve Bank; Bureau of Labor Statistics.
[17] *Blue Chip Financial Forecasts*, Vol. 42, No. 12, December 1, 2023, p. 2.

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

A. Yes. Interest rates and utility share prices are inversely correlated, which means that increases in interest rates result in declines in the share prices of utilities and vice versa. For example, Goldman Sachs and Deutsche Bank examined the sensitivity of share prices of different industries to changes in interest rates over the past five years. Both Goldman Sachs and Deutsche Bank found that utilities had one of the strongest negative relationships with bond yields (*i.e.*, increases in bond yields resulted in the decline of utility share prices).[18]

30. Q. How do equity analysts expect the utilities sector to perform in 2024?

A. Equity analysts have recently projected the continued underperformance of the utility sector, and have not changed their views on the sector. For example, Fidelity Investments classifies the utility sector as underweight,[19] and Bank of America recently noted that they are "not so constructive on [u]tilities" given that the dividend yields for utilities are below both the yields available on long- and short-term treasury bonds.[20] Moreover, the professional investors surveyed by *Barron's* in its most recent Big Money poll selected the utility sector as one of the four equity

[18] Lee, Justina. "Wall Street Is Rethinking the Treasury Threat to Big Tech Stocks." Bloomberg.com, 11 Mar. 2021, www.bloomberg.com/news/articles/2021-03-11/wall-street-is-rethinking-the-treasury-threat-to-big-tech-stocks.

[19] Fidelity Investments. "Fourth Quarter 2023 Investment Research Update." October 19, 2023.

[20] Dumoulin-Smith, Julien, *et. al*. "US Electric Utilities & IPPs: As the leaves fall, preparing for Autumn utility outlook. Macro still has potholes." BofA Securities, September 6, 2023.

sectors that they liked the least over the next twelve months, indicating they are projecting that utilities will underperform the broader market in 2024.[21]

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

A. Equity analysts expect the utility sector to continue to underperform given that, on average, the yields for the utility sector remain lower than the yields on long-term government bonds. To illustrate this point, I examined the difference between the dividend yields of utility stocks and the yields on long-term government bonds from January 2010 through November 2023 ("yield spread"). I relied on the dividend yield for the proxy group 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 recent significant increase in long-term government bonds yields has resulted in the yield on long-term government bonds significantly exceeding the dividend yield of the proxy group. The yield spread as of November 30, 2023 was negative 0.71 percent. However, the long-term average yield spread from January 2014 to November 2023 is 0.51 percent. Therefore, the current yield spread is well below the long-term average. Because of the fact that the yield spread is currently well below the long-term average, and the expectation that interest rates will remain relatively high through at least the next year, it is reasonable to conclude that the utility sector will most likely underperform over the near-term. This is

[21] Jasinski, Nicholas. "Big Money Pros Are Split on the Outlook for Stocks. But They Are Fans of Bonds." *Barron's*. October 27, 2023.

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 Proxy Group Dividend Yield and the 10-year Treasury Bond Yield, January 2014 – November 2023[22]

32. 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 would be expected to decline. If the prices of utility stocks decline, then the DCF

[22] S&P Capital IQ Pro.

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.

33. Q. Have regulatory commissions acknowledged that the DCF model might understate the cost of equity given the current capital market conditions of relatively high inflation and elevated 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 ("PPUC") 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.[23]
>
> …..
>
> 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.[24]

More recently, the Massachusetts Department of Public Utilities ("MDPU") also came to a similar conclusion:

> The Department recently considered the relationship between low interest rates and utility stock prices over the last several years and whether a projected increase in long-term interest rates caused the DCF analysis to understate the cost of equity. D.P.U. 20-120, at 416-419. The Department found that, although utility stocks had increased above historic levels in conjunction with low interest rates, the evidence in that proceeding that long-term interest rates would change was speculative. D.P.U. 20-120, at 417-419. In this proceeding, the record is clear that long-term interest rates have increased compared to the period of time from which the parties derived the dividend yields used in the DCF analyses (Exh. ES-VVR-Rebutal-1, at 23-26; Tr. 14, at 1463). We also have considered the Attorney General's evidence of investors forecasting that utility stocks will retain their high valuations in the near term (Tr. 14, at 1449-1452; RR-DPU-48). ***Based on the foregoing evidence, the Department finds that there is greater certainty that the DCF results understate the Company's cost of equity.***[25]

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

[24] *Id*., pp. 177–178.

[25] The Commonwealth of Massachusetts Department of Public Utilities, D.P.U. 22-22, Petition of NSTAR Electric Company, doing business as Eversource Energy, pursuant to G.L. c. 164, § 94 and 220 CMR 5.00, for Approval of a General Increase in Base Distribution Rates for Electric Service and a Performance Based Ratemaking Plan, November 30, 2022, p. 385-386; emphasis added.

V.E. Conclusion

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

A. Due to their impact on the cost of equity, it is important that current and projected market conditions be considered in setting the forward-looking ROE in this proceeding. The combination of persistently high inflation and the Federal Reserve's changes in monetary policy that have increased interest rates are indicative of an increasing cost of equity since (i) there is a strong historical inverse correlation between interest rates (*i.e.*, yields on long-term government bonds) and the share prices of utility stocks (*i.e.*, as interest rates increase, utility share prices decline, and thus utility dividend yields increase); and (ii) the yields on long-term government bonds currently exceed the dividend yields of utilities, when historically long-term government bond yields have been lower than the dividend yields of utilities. Because the cost of equity in this proceeding is being estimated for the future period that the Company's rates will be in effect, and because the cost of equity is expected to increase over the near term for utilities, cost of equity estimates based in whole or in part on historical or current market conditions, as opposed to projected market conditions, will likely understate the cost of equity during the future period that the Company's rates will be in effect. Therefore, these current and expected market conditions support consideration of the higher end of the range of cost of equity results produced by the DCF models, and warrant

consideration of forward-looking cost of equity estimation models such as the CAPM and ECAPM, which better reflect expected market conditions.

VI. PROXY GROUP SELECTION

35. Q. Why have you used a group of proxy companies to estimate the cost of equity for NJAWC?

A. In this proceeding, I am estimating the cost of equity for NJAWC. Because the ROE is a market-based concept, and given the fact that NJAWC is not a publicly-traded entity, it is necessary to establish a group of companies that is both publicly-traded and comparable to the Company in certain fundamental business and financial respects to serve as its "proxy" for purposes of the ROE estimation process. The proxy companies used in my analyses all possess a set of operating and financial risk characteristics that are substantially comparable to NJAWC, and, therefore, provide a reasonable basis for deriving the appropriate ROE.

36. Q. Please provide a brief profile of NJAWC.

A. NJAWC, a wholly-owned subsidiary of AWK, provides water service to approximately 668,000 water and fire service customers and wastewater service to approximately 64,200 customers in 18 counties throughout the State of New Jersey.[26] In 2022, the Company had total operating revenues of $909 million which for NJAWC's parent company, AWK, represented 25.90 percent of total regulated operating revenues.[27] The Company can access debt markets through American

[26] Direct Testimony of Thomas Shroba, at 2.
[27] American Water Works Company, Inc., 2022 SEC Form 10-K, at 4.

Water Capital Corp. ("AWCC") or independently. The current credit ratings for NJAWC are as follows: (1) S&P - A (Outlook: Stable); and (2) Moody's – A3 (Outlook: Stable).[28] Additionally, the current credit ratings for AWCC and AWK are as follows: (1) S&P - A (Outlook: Stable)[29]; and (2) Moody's - Baa1 (Outlook: Stable).[30]

37. Q. How did you select the companies in your proxy group?

A. I began with the group of U.S. utilities that *Value Line Investment Survey* ("*Value Line*") classifies as "Water Utilities" and "Natural Gas Distribution Companies". That combined group includes 16 domestic U.S. utilities. I simultaneously applied the following screening criteria to select companies that:

- pay consistent quarterly cash dividends because companies that do not cannot be analyzed using the Constant Growth DCF model;
- have investment grade long-term issuer ratings from S&P and/or Moody's;
- are covered by at least two utility industry analysts;
- have positive long-term earnings growth forecasts from at least two utility industry equity analysts;
- derive more than 70.00 percent of their total operating income from regulated operations; and
- were not parties to a merger or transformative transaction during the analytical periods relied on.

[28] S&P Capital IQ and Moody's Investor Services, Credit Opinion, New Jersey-American Water Company Inc., January 25, 2023.
[29] S&P Global Ratings, American Water Works Co. Inc., February 6, 2023.
[30] Moody's Investors Service, accessed September 30, 2023. Moody's last rating change for American Water Works Company, Inc. was as of April 1, 2019. (https://www.moodys.com/research/Moodys-downgrades-American-Water-and-American-Water-Capital-Corp-to--PR_397640)

38. Q. Did you consider any additional companies for inclusion in your proxy group?

A. Yes. I also considered the group of 36 companies that *Value Line* classifies as "Electric Utilities". In determining which electric utilities would qualify for inclusion in my proxy group, I started by relying on the criteria used to screen the water and natural gas utilities. I then applied two additional screening criteria to only include electric utilities that would be considered risk comparable to NJAWC:

- have owned generation comprising less than 10 percent of the Company's MWh sales to ultimate customers to ensure that the electric utilities included did not own a substantial amount of generation and therefore had operations that were primarily transmission and distribution; and
- own water operations.

39. Q. Did you include AWK in your proxy group?

A. No. Consistent with my general practice of excluding the subject company, or its parent holding company, from the proxy group, I have excluded AWK from my proxy group for NJAWC.

40. Q. What is the composition of your proxy group?

A. The screening criteria discussed above resulted in a proxy group consisting of the companies in Figure 6 (see also Schedule AEB-2).

Figure 6: Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
NiSource Inc.	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
Spire, Inc.	SR
Eversource Energy	ES
American States Water Company	AWR
California Water Service Group	CWT
Middlesex Water Company	MSEX
SJW Group	SJW
Essential Utilities, Inc.	WTRG

41. Q. Why did you include electric utilities and natural gas distribution companies in the proxy group?

A. *Value Line* currently classifies only seven companies as water utilities. Therefore, the universe of water utilities is already small before a set of screening criteria are applied. Additionally, there has been a recent trend towards consolidation in the utility industry, which reduces the number of available proxy companies.[31] Because there are a small number of companies that are available for inclusion in the proxy group, I also consider electric utilities and natural gas distribution companies that meet the screening criteria, such as Eversource Energy, which has electric distribution, natural gas distribution and water utility operations.

[31] Chediak, Mark, *et al*. "Utility M&A Is So Hot Not Even Berkshire's Billions Won a Bid." Bloomberg.com, Bloomberg, 3 Jan. 2018, www.bloomberg.com/news/articles/2018-01-03/utility-m-a-is-so-hot-not-even-berkshire-s-billions-won-a-bid.

42. Q. Are electric and natural gas distribution companies reasonably comparable to water utilities to be included in a proxy group used to estimate the cost of equity for a water utility?

A. Yes, I believe that it is reasonable to rely on a combined proxy group. As noted above, due to consolidation in the water utility industry, there is only a small group of water companies that can be included in the proxy group. In addition, the screening criteria relied on for my proxy group require that a company derive more than 70 percent of their operating income from regulated operations. Therefore, the electric and natural gas distribution companies included in my proxy group generate a large portion of their operating income from regulated operations similar to NJAWC and the water utilities that will be included in the proxy group. As a result, I believe that it is appropriate to include electric utilities and natural gas distribution companies in my proxy group.

43. Q. Have other regulators also considered the inclusion of other utility industry segments in the proxy group used to estimate the cost of equity for a water utility?

A. Yes. The MDPU, the Florida Public Service Commission ("FPUC"), and the Illinois Commerce Commission ("ICC") have considered the results of a proxy group that includes natural gas companies when determining the authorized ROE for water and wastewater utilities. In Docket No. 17-90, the MDPU determined that the use of a natural gas utility proxy group was appropriate for the purpose of demonstrating

the comparability of the investment risk of the proxy group to Aquarion Water Company.[32]

In Docket No. 20180006-WS, the FPUC modified the methodology used to estimate the ROE for water and wastewater utilities in Florida to include a combined proxy group of natural gas and water utilities.[33] The FPUC has previously relied on a natural gas only proxy group to estimate the ROE for water and wastewater utilities[34]; however, to increase the size of the proxy group, the FPUC decided to rely on a combined proxy group. Specifically, the FPUC noted:

> The leverage formula methodology shall be modified to include a combined proxy group of natural gas and WAW utilities as proxy companies in calculating the leverage formula. We find that the selected natural gas utilities and WAW utilities that derive at least 50 percent of their revenue from regulated rates. These utilities have market power and are influenced significantly by economic regulation. In Attachment 1, the returns calculated using the proxy group are adjusted to reflect the risks faced by Florida WAW utilities. The updated index consists of five natural gas companies and seven WAW companies that derive at least 50 percent of their total revenue from regulated operations. These companies have a median Standard and Poor's bond rating of "A"[35]

[32] Massachusetts Department of Public Utilities, Docket No. 17-90, Petition of Aquarion Water Company of Massachusetts, Inc., pursuant to G.L. c. 164, § 94, and G.L. c. 165, § 2, for Approval of a General Rate Increase as set forth in M.D.P.U. No. 3., October 31, 2018, p. 286-287.

[33] Docket No. 20180006-WS, In re. Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f),F.S., Order No. PSC-2018-0327-PAA-WS, at 7.

[34] Docket No. 170006-WS, In re. Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f),F.S., Order No. PSC-17-0249-PAA-WS, at 2.

[35] Docket No. 20180006-WS, In re. Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f),F.S., Order No. PSC-2018-0327-PAA-WS, at 8.

In Case No. 22-0210, for Illinois-American Water Company, the ICC agreed that a proxy group of water and public utility companies was a reasonable sample upon which to apply the various COE estimation models.[36]

VII. COST OF EQUITY ESTIMATION

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

A. The ROE is the cost of common equity capital in the utility's capital structure for ratemaking purposes. 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. 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.

45. 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 given 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

[36] Illinois Commerce Commission, Illinois-American Water Company Proposed Rate increases for Water and Sewer Service (tariffs filed February 10, 2022), Docket No. 22-0210, Order, December 15, 2022, at 102.

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.

46. Q. What methods did you use to estimate NJAWC's cost of equity?

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

VII.A. Importance of Multiple Analytical Approaches

47. Q. Is it important to use more than one analytical approach?

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 of 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

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

Pricing Theory model, while Brigham and Gapenski[38] recommend the CAPM, DCF, and Bond Yield Plus Risk Premium approaches.

48. Q. Do current market conditions increase the importance of using more than one analytical approach?

A. Yes. As discussed previously, 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. While the share prices of utilities have declined, the negative yield spread noted above is an indication that the share prices have not declined sufficiently to account for the recent rise in interest rates. As a result, equity analysts expect the utility sector to continue to underperform over the next year. Given the expected underperformance, it is reasonable to conclude that the DCF model is likely understating the forward-looking cost of equity because the model relies on historical share prices. The CAPM, ECAPM, and Bond Yield Plus Risk Premium analyses offer some balance through the use of interest rates as a direct input into the models and therefore may better reflect the market conditions expected when the Company's rates are in effect. These recent changes in market conditions highlight the benefit of using multiple models since each model relies on different assumptions, certain of which may better reflect current and projected market conditions at different times. It is important to use multiple analytical

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

approaches to ensure that the cost of equity results reflect market conditions that are expected during the period that the Company's rates will be in effect.

49. Q. Has the Board made similar findings regarding the reliance on multiple models?

A. Yes. It is my understanding that in its order in Docket No. ER12111052 for Jersey Central Power and Light Company, the Board noted that rate of return experts use a number of models including the DCF, CAPM, Risk Premium and Comparable Earnings to estimate the return required by investors. Specifically, the Board noted:

> In determining the cost of equity capital for a regulated utility, rate of return experts typically use a variety of financial models to simulate the returns assertedly required by investors. These include Discounted Cash Flow (DCF) models, Risk Premium models, Capital Asset Pricing Models (CAPM), Comparable Earnings models and variations thereof. However, it is widely acknowledged that these economic models constitute estimates, which, although probative, are not necessarily precise. The imprecision in the estimates provided by these models is more pronounced as a result of the current economic environment still recovering from the Great Recession, characterized by some as the worst economy since the Great Depression.[39]

In the order, the Board accepted an ROE of 9.75 percent for JCP&L, which was supported by the ALJ and ultimately recommended by Staff based on a review of each of the model results presented by the witnesses in the case and recently authorized ROEs in other jurisdictions.[40] In supporting the recommendation of Staff, the ALJ concluded that the results of each model are affected by multiple

[39] BPU Docket No. ER12111052, OAL Docket No. PUC16310-12, Order Adopting Initial Decision with Modifications and Clarifications, March 18, 2015, at 71.
[40] *Id.*, at 10.

factors including current market conditions. Thus, the Board, an ALJ, and Board Staff have all recognized the importance of considering the results of each model presented in the rate case because market conditions can have an effect on the results produced by each of the COE estimation models.

VII.B. Constant Growth DCF Model

50. 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:

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

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

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

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.

51. 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.

52. 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 30-, 90-, and 180-trading days ended November 30, 2023.

53. Q. Why do you use 30-, 90-, and 180-day averaging periods?

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.

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

A. Yes, I did. 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.

55. 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 singular long-term earnings growth rate for the Constant Growth DCF model.

56. Q. Which sources of long-term earnings growth rates did you use?

A. My Constant Growth DCF model incorporates three sources of long-term earnings growth rates: (1) Zacks Investment Research; (2) Yahoo! Finance; and (3) *Value Line*.

57. Q. Why do you rely on earnings growth rates rather than dividend growth rates in the Constant Growth DCF analyses?

A. I have relied on EPS growth rates because dividend growth ultimately depends on earnings growth. Dividend growth can fluctuate from year-to-year as a utility company responds to changes in the economic environment and the capital needs of its business. Over time, however, earnings growth rates and dividend growth rates should be approximately the same.

58. 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. The mean results were calculated using the average growth rate from all three sources for each proxy group company.

59. Q. What were the results of your DCF analyses?

A. Figure 7 summarizes the results of my DCF analyses. As shown in Figure 7, the mean and median DCF results using the average growth rates range from 9.28 percent to 10.16 percent, and the mean and median results using the maximum growth rates range from 10.64 percent to 11.31 percent. While I also summarize the DCF results using the minimum growth rates, given the market response to

authorized ROEs in the range identified by the low end of the DCF results, it is clear that these returns do not reflect the investor-required return.

60. Q. Are you aware of any utilities that have experienced a credit rating downgrade and/or negative market response related to the financial effects of a rate case decisions?

A. Yes. The most recent example is the decision by the Illinois Commerce Commission ("ICC") in mid-December 2023 that rejected the multiyear grid plan proposals of Ameren Illinois Co. ("Ameren IL") and Commonwealth Edison Co. ("ComEd") and authorized lower-than-expected ROEs for both utilities. Specifically, the ICC authorized an ROE for Ameren IL of 8.72 percent and 8.905 percent for ComEd, which was a significant reduction from the Administrative Law Judge's recommendations of 9.24 percent and 9.28 percent, respectively.[41] After the ICC's decision, while the S&P 500 Index was increasing, the share prices of the parent companies of both Ameren IL and ComEd (*i.e.*, Ameren Corp. and Exelon Corp., respectively) each dropped more than 7 percent on December 14, 2023, and declined again by more than 4.4 percent and 6.4 percent the following day, respectively.[42]

In addition, the reactions of equity analysts were universally negative, and questioned whether the parents of both Ameren IL and ComEd (*i.e.*, Ameren Corp.

[41] Allison Good, "Ameren, Exelon shares fall after Illinois regulators reject grid plans," *Platts*, December 15, 2023.
[42] Yahoo! Finance.

and Exelon Corp., respectively) will shift their capital spending out of the jurisdiction as a result of the uncertainty associated with the multi-year grid plan and low authorized ROEs. Specifically, equity analysts characterized the ICC's decisions as "onerous"[43] and "punitive,"[44] and that the ROE authorizations were "draconian."[45] Likewise, after the ICC's decisions, Regulatory Research Associates ("RRA") lowered its rating of the Illinois regulatory jurisdiction from Average/2 to Average/3 due to the "concerning pattern of restrictive" rate actions in the state.

Additionally, ALLETE, Inc.,[46] CenterPoint Energy Houston Electric,[47] and Pinnacle West Capital Corporation ("PNW")[48] each received credit rating downgrades following a rate case decision for reasons that included a below average authorized ROE. In the case of PNW, the market had a strong negative response to the rate case decision for its operating subsidiary, Arizona Public Service Company ("APS"), which included an authorized ROE of 8.70 percent.[49]

[43] Wells Fargo, "The ICC Delivers a Lump of Coal for AEE & EXC," December 14, 2023.
[44] BofA Securities, Ameren Corporation, "Illinois delivers downside surprise," December 15, 2023.
[45] Barclays, "AEE/EXC: Coal Stocking-Stuffer in Illinois," December 14, 2023.
[46] Moody's Investors Service. "Credit Opinion: ALLETE, Inc. Update following downgrade." April 3, 2019, at 3.
[47] FitchRatings. "Fitch Downgrades CenterPoint Energy Houston Electric to BBB+; Affirms CNP; Outlooks Negative." February 19, 2020.
[48] S&P Capital IQ Pro; FitchRatings. "Fitch Downgrades Pinnacle West Capital & Arizona Public Service to 'BBB+'; Outlooks Remain Negative." October 12, 2021; and Moody's Investors Service. "Rating Actions: Moody's downgrades Pinnacle West to Baa1 and Arizona Public Service to A3; outlook negative." November 17, 2021.
[49] S&P Global Market Intelligence. "Pinnacle West shares tumble after regulators slash returns in rate case." October 7, 2021.

Figure 7: Summary of Constant Growth DCF Results[50]

	Low Growth Rate	Average Growth Rate	High Growth Rate
Constant Growth DCF			
Mean Results:			
30-Day Average	9.12%	10.16%	11.31%
90-Day Average	8.97%	10.01%	11.16%
180-Day Average	8.77%	9.81%	10.96%
Average	8.95%	9.99%	11.14%
Median Results:			
30-Day Average	8.90%	9.92%	11.10%
90-Day Average	8.69%	9.61%	10.84%
180-Day Average	8.52%	9.28%	10.64%
Average	8.70%	9.60%	10.86%

61. 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. That assumption is heavily influenced by the market price of utility stocks. Because 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, although 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 that take into greater consideration current and expected market conditions.

[50] DCF results exclude the result for Middlesex Water Company because these results do not provide a reasonable equity risk premium over the current yield on the Moody's Baa rated utility bond index, which was 6.44 percent on a 30-day average basis ending November 30, 2023.

VII.C. CAPM Analysis

62. 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.

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

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

Where:

Ke = the required market COE;

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:

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

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

63. Q. What risk-free rate did you use in your CAPM analysis?

A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds, which is 4.77 percent;[51] (2) the average projected 30-year Treasury bond yield for the first quarter of 2024 through the first quarter of 2025, which is 4.48 percent;[52] and (3) the average projected 30-year Treasury bond yield for 2025 through 2029, which is 4.10 percent.[53]

64. Q. What Beta coefficients did you use in your CAPM analyses?

A. As shown in Schedule AEB-4, I used the average Beta coefficients for the proxy group companies as reported by Bloomberg and *Value Line*. The beta coefficients reported by Bloomberg are calculated using ten years of weekly returns relative to the S&P 500 Index. *Value Line*'s calculation of the beta coefficients is based on five years of weekly returns relative to the New York Stock Exchange Composite Index

[51] Bloomberg Professional as of November 30, 2023.
[52] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 2.
[53] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14.

("NYSE"). Additionally, as shown on Schedule AEB-4 and Schedule AEB-5, I also considered an additional CAPM analysis that relies on the long-term average utility 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.

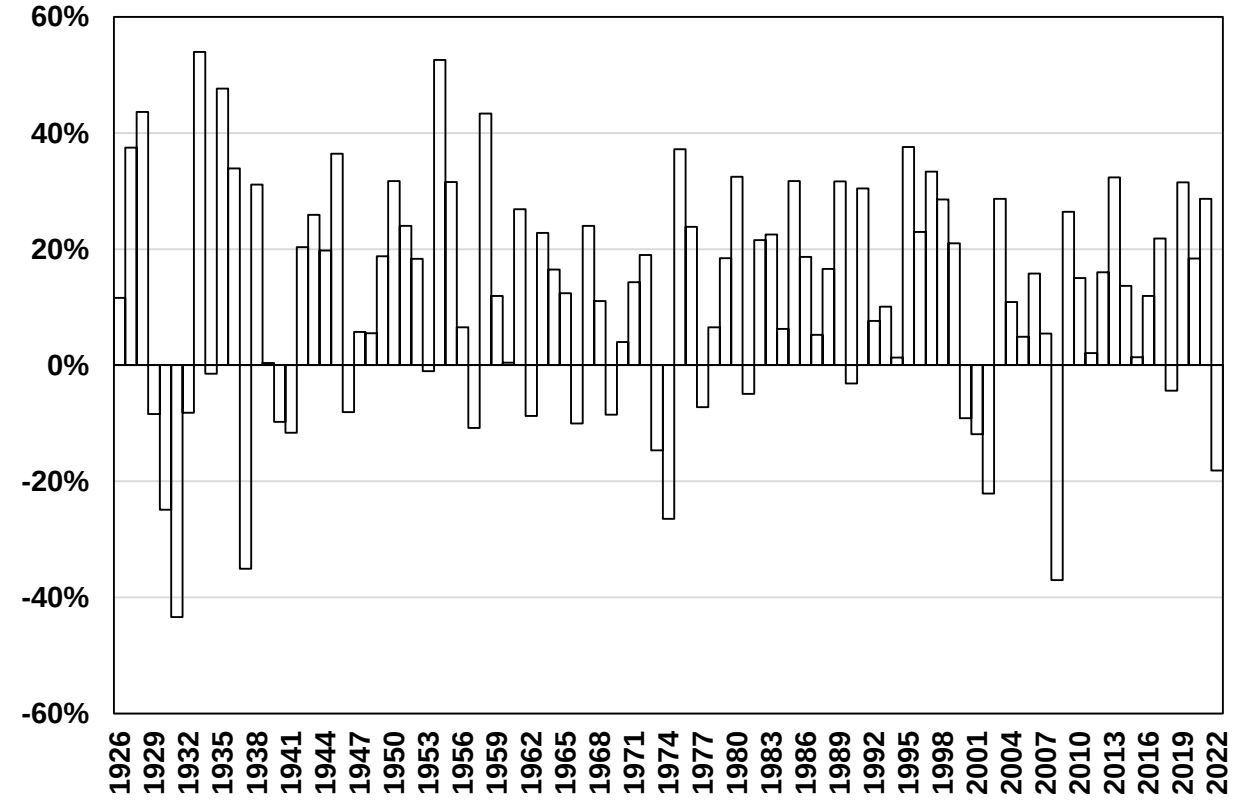
65. Q. How did you estimate the Market Risk Premium in the CAPM?

A. I estimated the market risk premium as the difference between the implied expected equity market return and the risk-free rate. As shown in Schedule 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 1.69 percent and a weighted long-term earnings growth rate of 10.78 percent, the estimated required market return for the S&P 500 Index as of November 30, 2023 is 12.56 percent. Based on the three risk-free rates considered, the implied market risk premia ranges from 7.78 percent to 8.46 percent.

66. Q. How does the current expected market return compare to observed historical market returns?

A. As shown in Figure 8, given the range of annual equity returns that have been observed over the past century, a current expected market return of 12.56 percent is not unreasonable. As shown, in 50 out of the past 97 years (or roughly 52 percent of observations), the realized equity market return was at least 12.56 percent or greater.

Figure 8: Realized U.S. Equity Market Returns (1926-2022)[54]



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

A. Yes. I have also considered the results of an ECAPM in estimating the cost of equity for NJAWC.[55] 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:

[54] Depicts total annual returns on large company stocks, as reported in the 2023 Kroll SBBI Yearbook.
[55] See, e.g., Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 189.

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

Where:

k_e = the required market ROE

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 empirical form of the CAPM 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.[56]

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 and *Value Line* and long-term *Value Line* beta coefficients.

[56] Id., at 191.

68. Q. What are the results of your CAPM analyses?

A. As shown in Figure 9 (*see* also Schedule AEB-4), my traditional CAPM analyses produce a range of returns from 10.28 percent to 11.28 percent. The ECAPM analysis results range from 10.85 percent to 11.60 percent.

Figure 9: CAPM Results

	Current 30-day Average 30-Year Treasury Bond Yield	Near-Term Forecast 30-Year Treasury Yield	Longer-Term Forecast 30-Year Treasury Yield
CAPM:			
Current Value Line Beta	11.28%	11.23%	11.17%
Current Bloomberg Beta	10.72%	10.65%	10.56%
Long-term Avg. Beta	10.46%	10.38%	10.28%
ECAPM:			
Current Value Line Beta	11.60%	11.56%	11.52%
Current Bloomberg Beta	11.18%	11.13%	11.06%
Long-term Avg. Beta	10.98%	10.92%	10.85%

VII.D. Bond Yield Plus Risk Premium Analysis

69. 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 a bondholder. That is, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the

yield on a particular class of bonds. In my analysis, I used actual authorized returns for natural gas utilities as the historical measure of the cost of equity to determine the risk premium.

70. Q. Why did you conduct this analysis based on the natural gas utility authorized ROEs?

A. The data set that is available for the water utilities begins in 2010, which is not a sufficient time period for a time series study such as the Bond Yield Risk Premium analysis. Therefore, I determined that data for natural gas companies is a reasonable proxy since both natural gas distribution companies and water utilities provide a similar service and may be perceived by investors to have a similar risk profile. Furthermore, as I discussed above, I have relied on a combination proxy group that includes natural gas utilities to develop the results of my Constant Growth DCF, CAPM, and ECAPM under the premise that the risks of natural gas utilities and water utilities are sufficiently similar that the results of the ROE estimation methodologies including natural gas utilities could be used for a water utility. Therefore, I believe it is reasonable and appropriate to rely on this time series analysis of the natural gas utility industry segment.

71. Q. What is the fundamental relationship between the equity risk premium and interest rates?

A. 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. The analysis provided in Schedule AEB-7 establishes that relationship using a regression of the risk premium as a function of Treasury bond yields. When the authorized ROEs 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.[57]

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

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

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

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

A. As shown in Figure 10 below, from 1980 through November 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:

$$RP = a + b(T) \text{ [6]}$$

Where:

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

a = intercept term

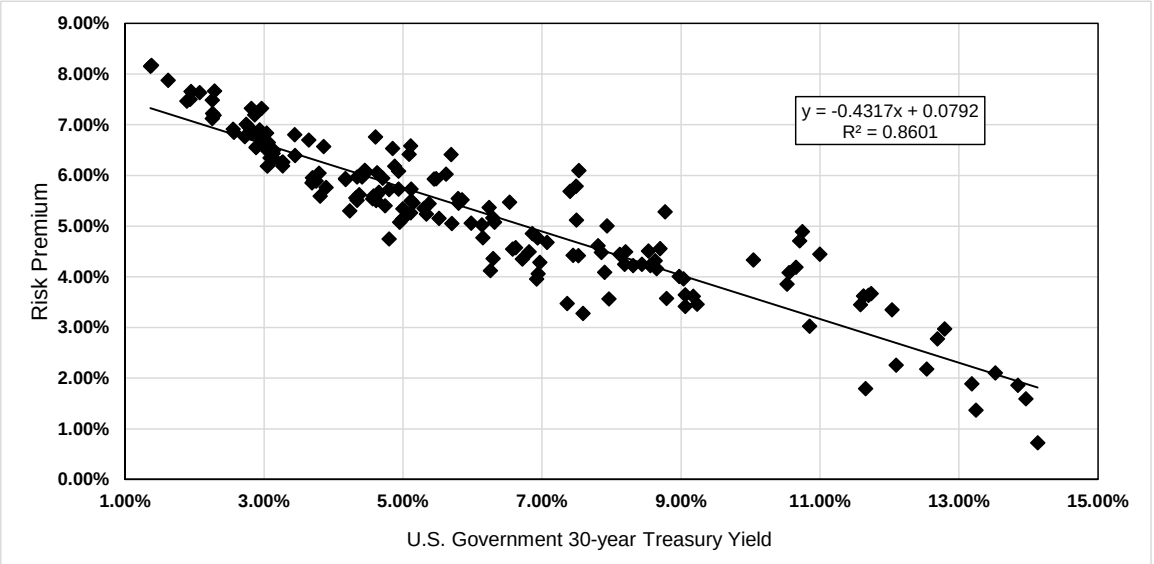
b = slope term

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

Data regarding allowed ROEs were derived from all of natural gas utility rate cases from 1980 through November 2023 as reported by Regulatory Research Associates ("RRA").[58] This equation's coefficients were statistically significant at the 99.00 percent level.

[58] This analysis was screened to eliminate limited issue rider cases, transmission cases and cases that were silent with respect to the authorized ROE.

Figure 10: Risk Premium Regression Analysis



74. Q. What are the results of your Bond Yield Plus Risk Premium analysis?

A. Figure 11presents the results of my Bond Yield Plus Risk Premium analysis, which are also presented in more detail in Schedule AEB-7.

Figure 11: Risk Premium Results

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
Bond Yield Risk Premium	10.63%	10.46%	10.25%

75. Q. How did the results of the Bond Yield Risk Premium inform your recommended ROE for the Company?

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

VIII. REGULATORY AND BUSINESS RISKS

76. 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 Company?

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

VIII.A. Flotation Costs

77. Q. What are flotation costs?

A. Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for preparation, filing, underwriting, and other issuance costs.

78. Q. Why is it important to consider flotation costs in the allowed ROE?

A. A regulated utility must have the opportunity to earn an ROE that is both competitive and compensatory to attract and retain new investors. To the extent that a company is denied the opportunity to recover prudently incurred flotation costs, actual returns will fall short of expected (or required) returns, thereby diluting equity share value.

79. Q. Are flotation costs part of the utility's invested costs or part of the utility's expenses?

A. Flotation costs are part of the invested costs of the utility, which are properly reflected on the balance sheet under "paid in capital." They are not current expenses, and, therefore, are not reflected on the income statement. Rather, like investments in rate base or the issuance costs of long-term debt, flotation costs are incurred over time. As a result, the great majority of a utility's flotation cost is incurred prior to the test year but remains part of the cost structure that exists during the test year and beyond, and as such, should be recognized for ratemaking purposes. Therefore, it is irrelevant whether an issuance occurs during the test year or is planned for the test year because failure to allow recovery of past flotation costs may deny NJAWC the opportunity to earn its required rate of return in the future.

80. Q. Please provide an example of why a flotation cost adjustment is necessary to compensate investors for the capital they have invested?

A. As shown in Schedule AEB-8 in AWK's most recent stock issuance, the offering price was $135.5 per share of common stock. After paying flotation costs associated with the equity issuance, which include fees paid to underwriters and attorneys, among others, AWK's net proceeds are only $133.41 per share invested. AWK invests that $133.41 per share in plant used to serve its customers, which becomes part of the invested capital of the company. Absent a flotation cost adjustment, the investor will thereafter earn a return on only the $133.41 per share

of invested capital, even though the contribution was $135.50. Making a small flotation cost adjustment gives the investor a reasonable opportunity to earn the authorized return, rather than the lower return that results when the authorized return is applied to an amount less than what the investor contributed.

81. Q. Is the need to consider flotation costs eliminated because NJAWC is a wholly-owned subsidiary of AWK?

A. No. Although NJAWC is a wholly-owned subsidiary of AWK, it is appropriate to consider flotation costs because wholly-owned subsidiaries receive equity capital from their parent and provide returns on the capital that roll up to the parent, which is designated to attract and raise capital based upon the returns of those subsidiaries. To deny recovery of issuance costs associated with the capital that is invested in the subsidiaries ultimately penalizes the investors that fund the utility operations and could inhibit the utility's ability to obtain new equity capital at a reasonable cost. This is important for NJAWC because, as I will discuss in more detail below, the Company is planning significant capital expenditures in the near term.

82. Q. Is the need to consider flotation costs recognized by the academic and financial communities?

A. Yes. The need to reimburse shareholders for the lost returns associated with equity issuance costs is recognized by the academic and financial communities in the same spirit that investors are reimbursed for the costs of issuing debt. This treatment is consistent with the philosophy of a fair rate of return. According to Dr. Shannon Pratt:

> Flotation costs occur when new issues of stock or debt are sold to the public. The firm usually incurs several kinds of flotation or transaction costs, which reduce the actual proceeds received by the firm. Some of these are direct out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and prospectus preparation costs. Because of this reduction in proceeds, the firm's required returns on these proceeds equate to a higher return to compensate for the additional costs. Flotation costs can be accounted for either by amortizing the cost, thus reducing the cash flow to discount, or by incorporating the cost into the cost of capital. Because flotation costs are not typically applied to operating cash flow, one must incorporate them into the cost of capital.[59]

83. Q. How did you calculate the flotation costs for NJAWC?

A. My flotation cost calculation is based on the costs incurred by AWK in that company's most recent equity offering as of February 28, 2023. That flotation cost percentage is then applied to the DCF analysis to estimate impact on ROE. As shown in Schedule AEB-8, based on the flotation costs incurred in the most recent AWK issuance, the impact on the proxy group's cost of equity amounts to 7 basis points (i.e., 0.07 percent) based on the median and 6 basis points (i.e., 0.06 percent) based on the mean.

84. Q. Do your final results include an adjustment for flotation cost recovery?

A. No. While the final ROE results do not incorporate an explicit adjustment for flotation costs, I considered the estimated effect of flotation cost on ROE in identifying a recommended ROE within the range of ROE estimates from the various models.

[59] Shannon P. Pratt, Cost of Capital Estimation and Applications, Second Edition, at 220-221.

VIII.B. Risks Associated with Capital Expenditure Program

85. Q. Please summarize the Company's capital expenditure program.

A. NJAWC projects that the Company will spend approximately $2.7 billion on capital investments for the period from 2024-2028, including significant investment to replace aging infrastructure necessary to continue to meet the needs of its customers and to comply with various regulations.

86. Q. Do credit rating agencies recognize the risks associated with elevated capital expenditures?

A. Yes. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and, therefore, credit ratings. An S&P report explains:

> [T]here is little doubt that the U.S. electric industry needs to make record capital expenditures to comply with the proposed carbon pollution rules over the next several years, while maintaining safety standards and grid stability. We believe the higher capital spending and subsequent rise in debt levels could strain these companies' financial measures, resulting in an almost consistent negative discretionary cash flow throughout this higher construction period. To meet the higher capital spending requirements, companies will require ongoing and steady access to the capital markets, necessitating that the industry maintains its high credit quality. We expect that utilities will continue to effectively manage their regulatory risk by using various creative means to recover their costs and to finance their necessary higher spending.[60]

[60] S&P, Ratings Direct, "U.S. Regulated Electric Utilities' Annual Capital Spending is Poised to Eclipse $100 Billion," July 2014.

Although this S&P report refers to electric utilities, the same applies to water utilities. In an August 2016 report, S&P explained the importance of regulatory support for large 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 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.[61]

87. Q. Does NJAWC have a capital tracking mechanism to recover some of the costs associated with its capital expenditures plan between rate cases?

A. Yes. NJAWC has a Distribution System Improvement Charge ("DSIC") which allows NJAWC to recover the costs associated with critical projects, including replacing and rehabilitating aging water mains, fire hydrants, valves and service lines, a Wastewater System Improvement Charge ("WSIC"), which allows NJAWC to recover the costs associated with critical projects for wastewater collection systems, including replacing and rehabilitating aging collection mains, manholes, laterals and services, and a Lead Service Line Replacement Charge ("LSLRC"),

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

which allows NJAWC to recover the costs associated with the replacement of customer-side lead service lines.[62] The presence of these clauses is certainly a positive aspect of New Jersey regulation however, they have become quite commonplace in utility regulation.

88. Q. Do the proxy group companies also have the ability to recover capital investments through a capital tracking mechanism?

A. Yes. As shown in Schedule AEB-10 approximately 79 percent of the companies in the proxy group have implemented infrastructure replacement recovery mechanisms. Consequently, the presence of the DSIC, WSIC and LSLRC while positive regulatory mechanisms, do not reduce the Company's risk vis-à-vis that of the proxy group.

89. Q. What are your conclusions regarding the effect of NJAWC's capital spending program on its risk profile and cost of capital?

A. The Company's capital expenditure requirements as a percentage of net utility plant are significant and will continue over the next few years. Additionally, similar to a number of the operating subsidiaries of the proxy group, NJAWC does have capital tracking mechanisms to recover some of the Company's projected capital expenditures. However, it is important to recognize that the sheer size of the Company's proposed capital additions imposes financial strains and risks on the Company.

[62] Company-side lead service lines are recovered under the DSIC.

VIII.C. Risks Associated with Environmental and Water Quality Regulation

90. Q. Please provide an overview of the risks associated with water quantity, water quality and other environmental regulations applicable to NJAWC's water supply facilities and operations.

A. Water supply utilities are subject to a complex array of regulations at the federal, state and river basin commission levels with respect to water quantity, water quality and other environmental aspects of their facilities and operations.

In addition to the requirement to make significant investments to extend facilities to accommodate applicants for service, there are multiple levels of authorization and regulation that apply to a public water system that wants to add a new source of supply or increase its withdrawals from existing sources. These factors add to the costs and lead-time for obtaining new, or increasing existing, water sources to meet new demands that may arise in portions of the Company's system. These are additional risk factors that can directly affect NJAWC's ability to continue to furnish safe, adequate and reliable service, and increase the costs NJAWC incurs to provide that service.

As discussed in the Direct Testimony of Company witness Mr. Donald Shields, there are significant regulations that require the monitoring and treatment of water supplies to help ensure the safety of and reliability of drinking water service. Further, there is increased research and awareness of contaminants on an ongoing

basis that, once identified, require investment to meet more stringent regulatory standards related to new contaminants.

While the Company intends to comply with all state and federal regulatory standards for safe and reliable drinking water service, the upstream releases of chemicals that are then found in the Company's water supplies that must be remediated present an ongoing business risk. For example, as discussed in the Direct Testimony of Company witness Shields, in January 2024, the United Stated Environmental Protection Agency ("USEPA") is expected to finalize its rule regarding the level allowed in drinking water of per- and polyfluoroalkyl substances ("PFAS"), which is expected to require over $500 million in investments by the Company.

91. Q. Provide an overview of the risks associated with environmental regulation with respect to NJAWC's wastewater system operations.

A. As is the case with regard to drinking water system operations, the operation of wastewater collection and treatment systems face a range of environmental regulatory risks, which are subject to state and federal oversight. As discussed in the Direct Testimony of Company witness Shields, at the federal level, wastewater systems are regulated pursuant to the Clean Water Act and numerous regulations adopted by the USEPA under that law, which are administered by the New Jersey Department of Eniornmental Protection ("NJDEP"). Similar to water regulation meeting regulatory compliance requirements, including evolving permitting requirements, and more stringent limits can be challenging and can result in

significant increases in operating costs. Furthermore wastewater systems face significant regulatory and environmental liability risks enforceable by governmental agencies through penalties and through citizen lawsuits.

Finally, as also discussed in the Direct Testimony of Company witness Shields, sewer systems present further risks due to the potential liability risk associated with backups, overflows and releases from the sewer system onto private property or into the environment.

92. Q. What is your conclusion with respect to the effect of the risk associated with environmental regulations and water quality regulations on NJAWC's cost of equity?

A. NJAWC has significant risk and uncertainty associated with environmental and water quality regulations, and the recovery of costs to comply with those regulations. It is clear that the financial community recognizes the additional risks to credit quality associated with the capital investment required to meet environmental and water quality regulations.

VIII.D. Risks Associated with the Regulatory Environment

93. 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 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 Company must be able to finance its 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.

94. Q. Please explain how credit rating agencies consider regulatory risk in establishing a company's credit rating.

A. Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings. Moody's establishes credit ratings based on four key factors: (1) business profile; (2) financial policy; (3) leverage and coverage; and (4) uplift for structural considerations. Within the business profile criteria, stability and predictability of regulatory environment and cost and investment recovery (sufficiency and timeliness) are each given a broad rating factor of 15.0 percent, while revenue risk is given a rating factor of 5.0 percent. Therefore, Moody's assigns regulatory risk a 35.0 percent weighting in the overall assessment of business and financial risk for regulated utilities.[63]

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

A. The regulatory environment can significantly affect both the access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, "the characteristics and transparency of the concession(s) and regulations under which the utility operates, the track record of the regulatory regime in setting tariffs and applying regulations consistently are key elements in assessing the overall stability of a water utility's business profile."[64]

[63] Moody's Investors Service, Rating Methodology: Regulated Water Utilities, June 8, 2018, at 4.
[64] Moody's Investors Service, Rating Methodology: Regulated Water Utilities, June 8, 2018, at 7.

96. Q. Have you conducted any analysis of the risk associated with the regulatory framework in a 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 New Jersey 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 provide revenue stabilization; and (3) the prevalence of capital cost recovery between rate cases. The results of this regulatory risk assessment are shown in Schedule AEB-10 and are summarized as follows:

1. Test year convention: NJAWC uses a partially-forecasted test year in New Jersey that provides for the ability to recover the costs that are projected during the rate case, however, the Board typically sets rates based on what is ultimately a historical test period, incorporating the rate case period. Approximately 51.79 percent of the operating companies held by the proxy group provide service in jurisdictions that use a fully or partially forecast test year. Forecasted test years have been relied on for several years and produce cost estimates that are more reflective of future costs which results in more accurate recovery of incurred costs and mitigates the regulatory lag associated with historical test years.

2. Volumetric Risk: Water revenues are highly weather-dependent as well as at risk to declining use per customer. As discussed in the Direct Testimony of Company witness Mr. Charles Rea, the Company's current rate design recovers approximately 67 percent of water and wastewater service revenues under volumetric rates whereas approximately 95 percent of the Company's costs are fixed costs, which do not vary with usage. While NJAWC does not

currently have protection against volumetric risk in New Jersey, the Company is proposing a revenue decoupling mechanism ("RDM") to mitigate volumetric risk. Approximately 58.93 percent of the operating companies held by the proxy group have some form of protection against volumetric risk.

3. Capital Cost Recovery: As discussed above, NJAWC has capital tracking mechanisms (i.e., DSIC, WSIC and LSLRC) to recover a portion of the Company's capital investment costs. This is consistent with the proxy group where 78.57 percent of the operating companies held by the proxy group have some form of capital cost recovery mechanism in place.

97. Q. What are your conclusions regarding the perceived risks related to the New Jersey regulatory environment?

A. As discussed throughout this section of my testimony, both Moody's and S&P have identified the supportiveness of the regulatory environment as an important consideration in developing their overall credit ratings for regulated utilities. Considering the regulatory adjustment mechanisms, many of the companies in the proxy group have timely cost recovery (through forecasted test years, cost recovery trackers and revenue stabilization mechanisms) that are similar to those either implemented by NJAWC or proposed by the Company in this rate proceeding (i.e., RDM). As a result, I conclude that the Company has regulatory risk that is comparable to the proxy group.

Finally, while my analysis assumes that the Company's proposed RDM will be approved, the volumetric risk of NJAWC would increase if the Commission does not approve the Company's proposal. Thus, if the RDM is not approved then

NJAWC would have greater than average regulatory risk when compared to the proxy group.

IX. CAPITAL STRUCTURE

98. Q. Is the capital structure of the Company an important consideration in the determination of the appropriate ROE?

A. Yes, it is. The equity ratio is the primary indicator of financial risk for a regulated utility such as NJAWC. Assuming other factors equal, a higher debt ratio increases the risk to equity investors. For debt holders, higher debt ratios result in a greater portion of the available cash flow being required to meet debt service, thereby increasing the risk associated with the payments on debt. The result of increased risk is a higher interest rate. The incremental risk of a higher debt ratio is more significant for common equity shareholders, whose claim on the cash flow of the Company is secondary to debt holders. Therefore, the greater the debt service requirement, the less cash flow is available for common equity holders.

99. Q. What is the NJAWC's proposed capital structure?

A. NJAWC is proposing a rate-making capital structure composed of 56.30 percent common equity, and 43.70 percent long-term debt.

100. Q. Have you conducted any analysis to determine whether NJAWC's proposed equity ratio is reasonable?

A. Yes, I reviewed the capital structures of the proxy companies.

101. Q. Why is it appropriate to consider the equity ratio for the proxy companies?

A. The determination of the ROE is based on the expected return for a proxy group of companies that are comparable in risk to NJAWC. The equity ratio is a measure of the financial risk of the company, and the authorized ROE is the return to compensate investors for that risk. If the Board is going to rely on the ROE estimates for the proxy companies to establish the authorized ROE for NJAWC, it is important that the financial risk of NJAWC be similar to the financial risk of the proxy group.

102. Q. How did you conduct your analysis of the proxy group capital structures?

A. Specifically, I calculated the mean proportions of common equity, and long-term debt over the past three years for each of the companies in the proxy group at the operating subsidiary level. Schedule AEB-11 summarizes the actual capital structures of the operating subsidiaries. As shown, the average equity ratios for the operating subsidiaries of the proxy group range from 49.41 percent to 59.88 percent, with a mean of 55.88 percent. NJAWC's proposed 56.30 percent equity ratio is well within the equity ratio range established by the utility operating subsidiaries of the proxy group.

103. Q. Are there other factors to be considered in evaluating the Company's capital structure?

A. Yes, there are other factors that should be considered in setting the Company's capital structure, namely the challenges that the credit rating agencies have highlighted as placing pressure on the credit metrics for utilities.

For example, while Moody's recently revised its outlook for the utility sector from "negative" to "stable", Moody's continues to note that high interest rates and increased capital spending will place pressure on credit metrics. Thus, Moody's highlights constructive regulatory outcomes that promote timely cost recovery as a key factor in supporting utility credit quality.[65]

FitchRatings' sector outlook for North American Utilities for 2024 is "deteriorating". This outlook is based on "continuing macroeconomic headwinds and elevated capex that are putting pressure on credit metrics in the high-cost funding environment".[66] Further Fitch expects that based on the "historic spread between median authorized ROEs and 10-year Treasury rates of 600 bps-700bps)".[67] Fitch expects authorized ROEs to start trending up with the increase in interest rates.

Likewise, while S&P also recently revised its outlook for the industry from negative to stable, S&P continues to see significant risks over the near-term for the industry as a result of inflation and increased levels of capital spending. Specifically, S&P noted:

> Despite the improvement in economic data, we expect inflation, rising interest rates, higher capital spending, and the strategic decision by many companies to operate with only minimal financial cushion from their downgrade thresholds to continue to pressure the industry's credit quality. Throughout 2022 and so far in 2023, the Federal Reserve has

[65] Moody's Investors Service, Outlook. "Outlook turns stable on low prices and credit-supportive regulation." September 7, 2023.
[66] FitchRatings, North American Utilities, Power & Gas Outlook 2024, December 6, 2023, p. 1.
[67] *Id.,* at 4.

> consistently raised interest rates to reduce the pace of inflation. While these actions appear to have had a positive effect on slowing inflation, there's still been a modest weakening in the industry's financial measures because of inflation and rising interest rates. An environment of continuously rising costs tends to weaken the industry's financial measures because of the timing difference between when the higher costs are incurred and when they are ultimately recovered from ratepayers.[68]

S&P has also recently concluded:

> The confluence of higher operating costs due to rising inflation, higher interest rates, storm restoration costs, increasing capital spending, and the recovery of previously deferred higher commodity costs, has resulted in growing rate case filings and increased rate rider recovery requests from state regulators. We expect to closely monitor the industry's ability to not just recover these rising costs but to do so in such a manner that minimizes the regulatory lag. However, given the impact of these higher costs to the customer bill, the industry's ability to effectively manage regulatory risk could become increasingly challenging, possibly pressuring its credit quality.[69]

The credit ratings agencies' continued concerns over the negative effects of inflation, higher interest rates, and increased capital expenditures underscore the importance of supportive regulation with respect to financing costs.

104. Q. What is your conclusion with regard to NJAWC's proposed capital structure?

A. Considering the actual capital structures of the proxy group operating companies, I believe that NJAWC's proposed common equity ratio of 56.30 percent is reasonable. The proposed equity ratio is well within the range established by the capital structures of the utility operating subsidiaries of the proxy companies.

[68] S&P Global Ratings. "The Outlook for North American Regulated Utilities Turns Stable," May 18, 2023, at 8.

[69] S&P Global Ratings. "Regulatory Friction Is Constraining Cost Recovery For North American Investor-Owned Utilities." November 6, 2023, at 8.

X. CONCLUSION AND RECOMMENDATIONS

105. Q. What is your conclusion regarding a fair ROE for NJAWC?

A. Based on the various quantitative analyses summarized in Figure 12 and the qualitative analyses presented in my Direct Testimony, a reasonable range of ROE results for NJAWC is from 10.25 percent to 11.25 percent. Within that range, I believe that an ROE of 10.75 percent is reasonable and appropriate. The recommended ROE takes into consideration the current conditions in capital markets including the high interest rates, and elevated inflationary pressures, both of which increase the cost of capital as well as the need to recover flotation costs and the relative business and financial risk of NJAWC as compared to the proxy group. This ROE would enable the company to attract capital at reasonable terms under a variety of economic and financial market conditions, while continuing to provide safe, reliable and affordable water service to customers in New Jersey.

Figure 12: Summary of Cost of Equity Model Results[70]

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Constant Growth DCF			
Mean Results:			
30-Day Average	9.12%	10.16%	11.31%
90-Day Average	8.97%	10.01%	11.16%
180-Day Average	8.77%	9.81%	10.96%
Average	8.95%	9.99%	11.14%
Median Results:			
30-Day Average	8.90%	9.92%	11.10%
90-Day Average	8.69%	9.61%	10.84%
180-Day Average	8.52%	9.28%	10.64%
Average	8.70%	9.60%	10.86%

	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
CAPM:			
Current Value Line Beta	11.28%	11.23%	11.17%
Current Bloomberg Beta	10.72%	10.65%	10.56%
Long-term Avg. Beta	10.46%	10.38%	10.28%
ECAPM:			
Current Value Line Beta	11.60%	11.56%	11.52%
Current Bloomberg Beta	11.18%	11.13%	11.06%
Long-term Avg. Beta	10.98%	10.92%	10.85%
Risk Premium Results	10.63%	10.46%	10.25%

106. Q. What is your conclusion regarding NJAWC's proposed capital structure?

A. My conclusion is that NJAWC's proposed rate-making capital structure consisting of 56.30 percent common equity, and 43.70 percent long-term debt is reasonable as

[70] DCF results exclude the result for Middlesex Water Company because these results do not provide a reasonable equity risk premium over the current yield on the Moody's Baa rated utility bond index, which was 6.44 percent on a 30-day average basis ending November 30, 2023.

compared to the proxy group companies and should be used for setting rates in this case.

107. Q. Does this conclude you 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 and water utility sectors, including valuation of regulated and unregulated utility assets, cost of capital, and capital structure issues.

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

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

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

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

AREAS OF EXPERTISE

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

EDUCATION

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

PROFESSIONAL EXPERIENCE

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

SELECTED CONSULTING EXPERIENCE & EXPERT TESTIMONY

REGULATORY ANALYSIS AND RATEMAKING

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

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

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

COST OF CAPITAL

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

RATEMAKING

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

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

VALUATION

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

Representative projects/clients have included:

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

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

STRATEGIC AND FINANCIAL ADVISORY SERVICES

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

Representative projects include:

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

Brattle

BULKLEY TESTIMONY LISTING

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
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

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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
Connecticut Public Utilities Regulatory Authority				
The Southern Connecticut Gas Company	11/23	The Southern Connecticut Gas Company	Docket No. 23-11-02	Return on Equity
Connecticut Natural Gas Corporation	11/23	Connecticut Natural Gas Corporation	Docket No. 23-11-02	Return on Equity
Connecticut Water Company	10/23	Connecticut Water Company	Docket No. 23-08-32	Return on Equity
United Illuminating	09/22	United Illuminating	Docket No. 22-08-08	Return on Equity
United Illuminating	05/21	United Illuminating	Docket No. 17-12-03RE11	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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
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

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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				
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South	12/23	Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South	IURC Cause No. 45990	Return on Equity
Indiana Michigan Power Co.	08/23	Indiana Michigan Power Co.	IURC Cause No. 45933	Return on Equity
Indiana American Water Company	03/23	Indiana and Michigan American Water Company	IURC Cause No. 45870	Return on Equity
Indiana Michigan Power Co.	07/21	Indiana Michigan Power Co.	IURC Cause No. 45576	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Indiana Gas Company Inc.	12/20	Indiana Gas Company Inc.	IURC Cause No. 45468	Return on Equity
Southern Indiana Gas and Electric Company	10/20	Southern Indiana Gas and Electric Company	IURC Cause No. 45447	Return on Equity
Indiana and Michigan American Water Company	09/18	Indiana and Michigan American Water Company	IURC Cause No. 45142	Return on Equity
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	06/23	MidAmerican Energy Company	Docket No. RPU-2023-___	Return on Equity
MidAmerican Energy Company	01/22	MidAmerican Energy Company	Docket No. RPU-2022-0001	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Iowa-American Water Company	08/20	Iowa-American Water Company	Docket No. RPU-2020-0001	Return on Equity
Kansas Corporation Commission				
Evergy Kansas	04/23	Evergy Kansas	**Docket No. 23-_____-_____-RTS**	Return on Equity
Atmos Energy Corporation	08/15	Atmos Energy Corporation	Docket No. 16-ATMG-079-RTS	Return on Equity
Kentucky Public Service Commission				
Kentucky American Water Company	06/23	Kentucky American Water Company	Docket No. 2023-____	Return on Equity
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				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Massachusetts Electric Company Nantucket Electric Company d/b/a National Grid	11/23	Massachusetts Electric Company Nantucket Electric Company d/b/a National Grid	DPU 23-150	Return on Equity
National Grid USA	11/20	Boston Gas Company	DPU 20-120	Return on Equity
Berkshire Gas Company	05/18	Berkshire Gas Company	DPU 18-40	Return on Equity
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Michigan Public Service Commission				
Indiana Michigan Power Co.	09/23	Indiana Michigan Power Co.	Case No. U-21461	Return on Equity
Michigan Gas Utilities Corporation	03/23	Michigan Gas Utilities Corporation	Case No. U-21366	Return on Equity
Michigan Gas Utilities Corporation	03/21	Michigan Gas Utilities Corporation	Case No. U-20718	Return on Equity
Wisconsin Electric Power Company	12/11	Wisconsin Electric Power Company	Case No. U-16830	Return on Equity
Michigan Tax Tribunal				
New Covert Generating Co., LLC.	03/18	The Township of New Covert Michigan	MTT Docket No. 000248TT and 16-001888-TT	Valuation of Electric Generation Assets
Covert Township	07/14	New Covert Generating Co., LLC.	Docket No. 399578	Valuation of Electric Generation Assets
Minnesota Public Utilities Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
ALLETE, Inc. d/b/a Minnesota Power	11/23	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-23-155	Return on Equity
CenterPoint Energy Resources	11/23	CenterPoint Energy Resources	D-G-008/GR-23-173	Return on Equity
Minnesota Energy Resources Corporation	11/22	Minnesota Energy Resources Corporation	Docket No. G011/GR-22-504	Return on Equity
CenterPoint Energy Resources	11/21	CenterPoint Energy Resources	D-G-008/GR-21-435	Return on Equity
ALLETE, Inc. d/b/a Minnesota Power	11/21	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-21-630	Return on Equity
Otter Tail Power Company	11/20	Otter Tail Power Company	E017/GR-20-719	Return on Equity
ALLETE, Inc. d/b/a Minnesota Power	11/19	Allete, Inc. d/b/a Minnesota Power	E015/GR-19-442	Return on Equity
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				
Ameren Missouri	08/22	Ameren Missouri	File No. ER-2022-0337	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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.	11/22	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				
Liberty Utilities (EnergyNorth Natural Gas)	07/23	Liberty Utilities (EnergyNorth Natural Gas)	Docket No. DG 23-067	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Liberty Utilities (Granite State Electric)	05/23	Liberty Utilities (Granite State Electric)	Docket No. DE 23-039	Return on Equity
Public Service Company of New Hampshire d/b/a Eversource Energy	11/19 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				
Public Service Electric and Gas Company	11/23	Public Service Electric and Gas Company	ER23120924 GR23120925	Return on Equity
New Jersey American Water Company, Inc.	01/22	New Jersey American Water Company, Inc.	WR22010019	Return on Equity
Public Service Electric and Gas Company	10/20	Public Service Electric and Gas Company	EO18101115	Return on Equity
New Jersey American Water Company, Inc.	12/19	New Jersey American Water Company, Inc.	WR19121516	Return on Equity
Public Service Electric and Gas Company	04/19	Public Service Electric and Gas Company	EO18060629 GO18060630	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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
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				
Liberty Utilities (New York Water)	5/23	Liberty Utilities (New York Water)	Case 23-W-0235	Return on Equity
New York State Electric and Gas Company 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

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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
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				
Otter Tail Power Company	11/23	Otter Tail Power Company	Case No. PU-23-___	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Montana-Dakota Utilities Co.	11/23	Montana-Dakota Utilities Co.	Case No. PU-23-___	Return on Equity
Montana-Dakota Utilities Co.	05/22	Montana-Dakota Utilities Co.	C-PU-22-194	Return on Equity
Montana-Dakota Utilities Co.	08/20	Montana-Dakota Utilities Co.	C-PU-20-379	Return on Equity
Northern States Power Company	12/12	Northern States Power Company	C-PU-12-813	Return on Equity
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity
Oklahoma Corporation Commission				
Oklahoma Gas & Electric	12/23	Oklahoma Gas & Electric	Cause No. PUD2023-000087	Return on Equity
Oklahoma Gas & Electric	12/21	Oklahoma Gas & Electric	Cause No. PUD 202100164	Return on Equity
Arkansas Oklahoma Gas Corporation	01/13	Arkansas Oklahoma Gas Corporation	Cause No. PUD 201200236	Return on Equity
Oregon Public Service Commission				
PacifiCorp d/b/a Pacific Power & Light	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.	11/23	Pennsylvania-American Water Company	Docket No. R-2023-3043189 (water) Docket No. R-2023-3043190 (wastewater)	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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
Southwestern Public Service Commission	08/19	Southwestern Public Service Commission	Docket No. D-49831	Return on Equity
Southwestern Public Service Company	01/14	Southwestern Public Service Company	Docket No. 42004	Return on Equity
Texas Railroad Commission				
CenterPoint Energy Entex and CenterPoint Energy Texas Gas	10/23	CenterPoint Energy Entex and CenterPoint Energy Texas Gas	2023 Texas Division Rate Case Case No. OS-23-00015513	Return on Equity
Utah Public Service Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
PacifiCorp d/b/a Rocky Mountain Power	05/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20-035-04	Return on Equity
Virginia State Corporation Commission				
Virginia American Water Company, Inc.	11/23	Virginia American Water Company, Inc.	Docket No. PUR-2023-00194	Return on Equity
Virginia American Water Company, Inc.	11/21	Virginia American Water Company, Inc.	Docket No. PUR-2021-00255	Return on Equity
Virginia American Water Company, Inc.	11/18	Virginia American Water Company, Inc.	Docket No. PUR-2018-00175	Return on Equity
Washington Utilities Transportation Commission				
PacifiCorp d/b/a Pacific Power & Light	03/23	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-230172	Return on Equity
Cascade Natural Gas Corporation	06/20	Cascade Natural Gas Corporation	Docket No. UG-200568	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	12/19	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-191024	Return on Equity
Cascade Natural Gas Corporation	04/19	Cascade Natural Gas Corporation	Docket No. UG-190210	Return on Equity
West Virginia Public Service Commission				
West Virginia American Water Company	05/23	West Virginia American Water Company	Case No. 23-0383-W-42T	Return on Equity
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 Power and Light	05/23	Wisconsin Power and Light	Docket No. 6680-UR-124	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Wisconsin Electric Power Company and Wisconsin Gas LLC	04/22	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-110	Return on Equity
Wisconsin Public Service Corp.	04/22	Wisconsin Public Service Corp.	6690-UR-127	Return on Equity
Alliant Energy		Alliant Energy		Return on Equity
Wisconsin Electric Power Company and Wisconsin Gas LLC	03/19	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-109	Return on Equity
Wisconsin Public Service Corp.	03/19	Wisconsin Public Service Corp.	6690-UR-126	Return on Equity
Wyoming Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	02/23	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-633-ER-23	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	03/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-578-ER-20	Return on Equity
Montana-Dakota Utilities Co.	05/19	Montana-Dakota Utilities Co.	30013-351-GR-19	Return on Equity

CERTIFICATIONS/ACCREDITATIONS

Certified General Appraiser, licensed in the Commonwealth of Massachusetts