BEFORE THE

PUBLIC UTILITIES COMMISSION

OF THE STATE OF SOUTH DAKOTA

IN RE:	**)**	
	)	**Docket No. EL23-_____**
NORTHWESTERN CORPORATION	**)**	
d/b/a NorthWestern Energy	**)**	

DIRECT TESTIMONY OF

ADRIEN M. MCKENZIE

On Behalf of NorthWestern Energy

June 15, 2023

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GLOSSARY OF ACRONYMS

CAPM	Capital Asset Pricing Model
Commission	South Dakota Public Service Commission
CPI	Consumer Price Index
DCF	Discounted Cash Flow
DPS	dividends per share
ECAPM	Empirical Capital Asset Pricing Model
EPS	earnings per share
FERC	Federal Energy Regulatory Commission
FINCAP, Inc.	Financial Concepts and Applications, Inc.
FOMC	Federal Open Market Committee
GDP	Gross Domestic Product
IBES	Institutional Brokers' Estimate System (now Refinitiv)
MDPSC	Maryland Public Service Commission
Moody's	Moody's Investors Service
MW	Megawatts
NASDAQ	The Nasdaq Stock Market LLC
NorthWestern or Company	NorthWestern Corporation d/b/a NorthWestern Energy
PCE	Personal Consumption Expenditure Price Index
ROE	return on equity
RRA	S&P Global Market Intelligence, RRA Regulatory Focus
S&P	S&P Global Ratings
SPP	Southwest Power Pool, Inc.
Value Line	The Value Line Investment Survey
Zacks	Zacks Investment Research, Inc.

I. INTRODUCTION

Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A1. Adrien M. McKenzie, 3907 Red River, Austin, Texas, 78751.

Q2. IN WHAT CAPACITY ARE YOU EMPLOYED?

A2. I am President of FINCAP, Inc., a firm providing financial, economic, and policy consulting services to business and government.

Q3. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND QUALIFICATIONS.

A3. A description of my background and qualifications, including a resume containing the details of my experience, is attached as Exhibit AMM-1.

A. Overview

Q4. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS CASE?

A4. The purpose of my direct testimony is to present to the Commission my independent assessment of the just and reasonable ROE for the jurisdictional utility operations of NorthWestern. In addition, I also examine the reasonableness of NorthWestern's requested capital structure, considering both the specific risks faced by the Company and other industry guidelines.

Q5. PLEASE SUMMARIZE THE INFORMATION AND MATERIALS YOU RELY ON TO SUPPORT THE OPINIONS AND CONCLUSIONS CONTAINED IN YOUR TESTIMONY.

A5. To prepare my testimony, I use information from a variety of sources that would normally be relied upon by a person in my capacity. I am familiar with the organization, finances, and operations of NorthWestern from my involvement in prior proceedings before the Commission, the Montana Public Service Commission, and FERC. In connection with this filing, I consider and rely upon corporate disclosures, publicly available financial reports, prior regulatory filings, and other published information

relating to NorthWestern. I also review information relating generally to current capital market conditions and specifically to investor perceptions, requirements, and expectations for utilities. These sources, coupled with my experience in the fields of finance and utility regulation, have given me a working knowledge of the issues relevant to investors' required return for NorthWestern, and they form the basis of my analyses and conclusions.

Q6. HOW IS YOUR TESTIMONY ORGANIZED?

A6. First, I summarize my conclusions and recommendations, giving special attention to the importance of financial strength and the implications of regulatory mechanisms and other risk factors. I also comment on the reasonableness of the Company's proposed capital structure.

Next, I briefly review NorthWestern's operations and finances. I then discuss current conditions in the capital markets and their implications in evaluating a just and reasonable return for the Company. Next, I explain the development of the proxy group of electric utilities used as the basis for my quantitative analyses. With this as a background, I discuss well-accepted quantitative analyses to estimate the current cost of equity for the proxy group of utilities. These include the DCF model, the CAPM, the ECAPM, an equity risk premium approach based on allowed equity returns, and reference to expected earned rates of return for utilities, which are all methods that are commonly relied on in regulatory proceedings. In addition, I discuss the issue of stock flotation expenses and the implications of these legitimate costs on the estimation of a reasonable ROE for the Company.

Based on the results of my analyses , I evaluate a fair ROE for NorthWestern. My evaluation takes into account the specific risks for the Company's utility operations in South Dakota and NorthWestern's requirements for financial strength. Finally, consistent with the fact that utilities must compete for capital with firms outside their

own industry, I corroborate my utility quantitative analyses by applying the DCF model to a group of low risk non-utility firms.

B. Summary and Conclusions

Q7. WHAT IS YOUR RECOMMENDED ROE FOR NORTHWESTERN?

A7. I apply the DCF, CAPM, ECAPM, risk premium, and expected earnings analyses to a proxy group of electric utilities, with the results being summarized on Exhibit AMM-2. As shown there, I recommend a cost of equity range for the Company's electric operations of 10.1% to 11.1%, or 10.2% to 11.2% after adjusting for the impact of common equity flotation costs. It is my conclusion that the 10.7% midpoint of this range represents a just and reasonable ROE that is adequate to compensate NorthWestern's investors, while maintaining the Company's financial integrity and ability to attract capital on reasonable terms.

II. RETURN ON EQUITY FOR NORTHWESTERN

Q8. WHAT IS THE PURPOSE OF THIS SECTION?

A8. This section presents my conclusions regarding the fair ROE applicable to NorthWestern's jurisdictional electric utility operations. I also describe the relationship between ROE and preservation of a utility's financial integrity and the ability to attract capital. Finally, I discuss the reasonableness of the Company's capital structure request in this case.

A. Importance of Financial Strength

Q9. WHAT IS THE ROLE OF THE ROE IN SETTING A UTILITY'S RATES?

A9. The ROE is the cost of attracting and retaining common equity investment in the utility's physical plant and assets. This investment is necessary to finance the asset base needed to provide utility service. Investors commit capital only if they expect to earn a return on their investment commensurate with returns available from alternative investments with comparable risks. Moreover, a just and reasonable ROE is integral in meeting

sound regulatory economics and the standards set forth by the U.S. Supreme Court. The *Bluefield* case set the standard against which just and reasonable rates are measured:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties. . . . The return should be reasonable, sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise money necessary for the proper discharge of its public duties.[1]

The *Hope* case expanded on the guidelines as to a reasonable ROE, reemphasizing its findings in *Bluefield* and establishing that the rate-setting process must produce an end-result that allows the utility a reasonable opportunity to cover its capital costs. The Court stated:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. . . . By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain credit and attract capital.[2]

In summary, the Supreme Court's findings in *Hope* and *Bluefield* established that a just and reasonable ROE must be sufficient to 1) fairly compensate the utility's investors, 2) enable the utility to offer a return adequate to attract new capital on reasonable terms, and 3) maintain the utility's financial integrity. These standards should allow the utility to fulfill its obligation to provide reliable service while meeting the needs of customers through necessary system replacement and expansion, but the

[1] *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679 (1923).

[2] *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

Supreme Court's requirements can only be met if the utility has a reasonable opportunity to actually earn its allowed ROE.

While the *Hope* and *Bluefield* decisions did not establish a particular method to be followed in fixing rates (or in determining the allowed ROE),[3] these and subsequent cases enshrined the importance of an end result that meets the opportunity cost standard of finance. Under this doctrine, the required return is established by investors in the capital markets based on expected returns available from comparable risk investments. Coupled with modern financial theory, which has led to the development of formal risk-return models (e.g., DCF and CAPM), practical application of the *Bluefield* and *Hope* standards involves the independent, case-by-case consideration of capital market data in order to evaluate an ROE that will produce a balanced and fair end result for investors and customers.

Q10. THROUGHOUT YOUR TESTIMONY YOU REFER REPEATEDLY TO THE CONCEPTS OF "FINANCIAL STRENGTH," "FINANCIAL INTEGRITY," AND "FINANCIAL FLEXIBILITY." WOULD YOU BRIEFLY DESCRIBE WHAT YOU MEAN BY THESE TERMS?

A10. These terms are generally synonymous and refer to the utility's ability to attract and retain the capital that is necessary to provide service at reasonable cost, consistent with the Supreme Court standards. NorthWestern's plans call for a continuation of capital investments to preserve and enhance service reliability for its customers. The Company must generate adequate cash flow from operations to fund these requirements and maintain access to capital from external sources.

Rating agencies and potential debt investors tend to place significant emphasis on maintaining strong financial metrics and credit ratings that support access to debt

[3] *Id.* at 602 (finding, "the Commission was not bound to the use of any single formula or combination of formulae in determining rates." and, "[I]t is not theory but the impact of the rate order which counts.")

capital markets under reasonable terms. This emphasis on financial metrics and credit ratings is shared by equity investors who also focus on cash flows, capital structure, and liquidity, much like debt investors. Investors understand the important role that a supportive regulatory environment plays in establishing a sound financial profile that will permit the utility access to debt and equity capital markets on reasonable terms in both favorable financial markets and during times of potential disruption and crisis.

Q11. WHAT PART DOES REGULATION PLAY IN ENSURING THAT NORTHWESTERN HAS ACCESS TO CAPITAL UNDER REASONABLE TERMS AND ON A SUSTAINABLE BASIS?

A11. Regulatory signals are a major driver of investors' risk assessment for utilities. Investors recognize that constructive regulation is a key ingredient in supporting utility credit ratings and financial integrity. Security analysts study commission orders and regulatory policy statements to advise investors about where to put their money. As Moody's noted, "the regulatory environment is the most important driver of our outlook because it sets the pace for cost recovery."[4] Similarly, S&P observed that, "Regulatory advantage is the most heavily weighted factor when S&P Global Ratings analyzes a regulated utility's business risk profile."[5] Value Line summarizes these sentiments:

> As we often point out, the most important factor in any utility's success, whether it provides electricity, gas, or water, is the regulatory climate in which it operates. Harsh regulatory conditions can make it nearly impossible for the best run utilities to earn a reasonable return on their investment.[6]

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[4] Moody's Investors Service, *Regulation Will Keep Cash Flow Stable As Major Tax Break Ends*, Industry Outlook (Feb. 19, 2014).

[5] S&P Global Ratings, *Assessing U.S. Investors-Owned Utility Regulatory Environments*, RatingsExpress (Aug. 10, 2016).

[6] Value Line Investment Survey, *Water Utility Industry* (Jan. 13, 2017) at p. 1780.

In addition, the ROE set by regulators impacts investor confidence in not only the jurisdictional utility, but also in the ultimate parent company that is the entity that actually issues common stock.

Q12. DO CUSTOMERS BENEFIT BY ENHANCING THE UTILITY'S FINANCIAL FLEXIBILITY?

A12. Yes. Providing an ROE that is sufficient to maintain the Company's ability to attract capital under reasonable terms, even in times of financial and market stress, is not only consistent with the economic requirements embodied in the U.S. Supreme Court's *Hope* and *Bluefield* decisions, but it is also in customers' best interests. Customers enjoy the benefits that come from ensuring that the utility has the financial wherewithal to take whatever actions are required to ensure safe and reliable service.

B. Conclusions and Recommendations

Q13. WHAT ARE YOUR FINDINGS REGARDING A FAIR ROE FOR NORTHWESTERN?

A13. Considering the economic requirements necessary to support continuous access to capital under reasonable terms and the results of my analysis, I recommend a 10.7% ROE for NorthWestern's utility operations, which is consistent with the case-specific evidence presented in my testimony. The bases for my conclusion are summarized below:

- In order to reflect the risks and prospects associated with NorthWestern's utility business, my analyses focused on a proxy group of twenty-two utility firms.
- Because investors' required return on equity is unobservable and no single method should be viewed in isolation, I applied the DCF, CAPM, ECAPM, and risk premium methods to estimate a just and reasonable ROE for NorthWestern, as well as referencing the expected earnings approach.
- As summarized on Exhibit AMM-2, considering the average values resulting from these analyses, and giving less weight to extremes at

the high and low ends of the range, I conclude that the cost of equity falls in the 10.1% to 11.1% range.

- My evaluation of a fair ROE also incorporated an upward adjustment of 10 basis points to account for flotation costs, which are a legitimate cost incurred to raise equity capital supporting NorthWestern's investment in utility infrastructure. Incorporating this flotation cost adjustment resulted in my recommended ROE range of 10.2% to 11.2%.
- My ROE recommendation for NorthWestern's electric operations is the midpoint of this range, or 10.7%.

Q14. WHAT DID THE DCF RESULTS FOR YOUR SELECT GROUP OF NON-UTILITY FIRMS INDICATE WITH RESPECT TO YOUR EVALUATION?

A14. As shown on page 3 of Exhibit AMM-12, average DCF estimates for a low-risk group of firms in the competitive sector of the economy ranged from 10.4% to 10.9% before consideration of flotation costs. While I did not base my recommendations on these results, they confirm that an ROE for NorthWestern of 10.7% falls in a reasonable range to maintain the Company's financial integrity, provide a return commensurate with investments of comparable risk, and support the ability to attract capital.

C. Capital Structure

Q15. IS AN EVALUATION OF THE CAPITAL STRUCTURE MAINTAINED BY A UTILITY RELEVANT IN ASSESSING ITS RETURN ON EQUITY?

A15. Yes. Other things being equal, a higher debt ratio and lower common equity ratio, translates into increased financial risk for all investors. A greater amount of debt means more investors have a senior claim on available cash flow, thereby reducing the certainty that each will receive their contractual payments. This increases the risks to which lenders are exposed, and they require correspondingly higher rates of interest. From common shareholders' standpoint, a higher debt ratio means that there are proportionately more investors ahead of them, thereby increasing the uncertainty as to the amount of cash flow that will remain.

Q16. WHAT COMMON EQUITY RATIO IS IMPLICIT IN NORTHWESTERN'S CAPITAL STRUCTURE?

A16. NorthWestern's capital structure is presented in the Direct Testimony of Crystal Lail. As summarized in her testimony, the Company is requesting a capital structure composed of 49.5% long-term debt and 50.5% common equity.

Q17. HOW DOES THIS COMPARE TO THE AVERAGE EQUITY RATIOS MAINTAINED BY THE UTILITIES IN THE UTILITY GROUP?

A17. Exhibit AMM-4 presents the sources of long-term capital (long-term debt and common equity) used by the publicly traded firms in the Utility Group. As shown on page 1 of this Exhibit, at year-end 2022, common equity ratios for the Utility Group ranged between 33.0% and 63.5% and averaged 43.7%.

Q18. HOW DO THESE HISTORICAL CAPITALIZATION RATIOS COMPARE WITH INVESTORS' FORWARD-LOOKING EXPECTATIONS?

A18. Also shown on page 1 of Exhibit AMM-4, Value Line expects an average common equity ratio of 45.0% for the Utility Group over its three-to-five-year forecast horizon. Projected equity ratios for the individual firms in the Utility Group range from 32.0% to 59.5%.

Q19. WHAT CAPITALIZATION RATIOS ARE MAINTAINED BY COMPARABLE UTILITY OPERATING COMPANIES?

A19. Pages 2 and 3 of Exhibit AMM-4 display capital structure data for the group of utility operating companies owned by the firms in the Utility Group. As shown there, common equity ratios for these utilities ranged from 40.1% to 60.9% and averaged 51.8%.

Q20. DO ONGOING ECONOMIC AND CAPITAL MARKET UNCERTAINTIES ALSO INFLUENCE THE APPROPRIATE CAPITAL STRUCTURE FOR NORTHWESTERN?

A20. Yes. Financial flexibility plays a crucial role in ensuring the wherewithal of a utility to meet funding needs. Utilities with higher financial leverage may be foreclosed from or have limited access to additional borrowing, especially during times of financial market stress. As Moody's observed:

> Utilities are among the largest debt issuers in the corporate universe and typically require consistent access to capital markets to assure adequate sources of funding and to maintain financial flexibility. During times of distress and when capital markets are exceedingly volatile and tight, liquidity becomes critically important because access to capital markets may be difficult.[7]

S&P recently reiterated these concerns, noting that:

> Because of the industry's high capital spending and consistent dividends, negative discretionary cashflow is regularly more than $100 billion annually. To fund this large deficit, the industry requires consistent access to the capital markets. Rising interest rates, decreasing equity prices, and inflation could hamper consistent access to the capital markets, potentially pressuring credit quality.[8]

As a result, the Company's capital structure must maintain adequate equity to preserve the flexibility necessary to maintain continuous access to capital even during times of unfavorable energy or financial market conditions.

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[7] Moody's Investors Service, *FAQ on credit implications of the coronavirus outbreak*, Sector Comment (Mar. 26, 2020).

[8] S&P Global Ratings. *North American Regulated Utilities, The industry's outlook remains negative*, Industry Top Trends (Jan. 23, 2023).

Q21. WHAT OTHER FACTORS DO INVESTORS CONSIDER IN THEIR ASSESSMENT OF A COMPANY'S CAPITAL STRUCTURE?

A21. Utilities, including NorthWestern, are facing significant capital investment plans. Coupled with the potential for turmoil in capital markets, this warrants a stronger balance sheet to deal with an uncertain environment. As S&P recently noted:

> Under our base case, we expect that by 2024 the industry's capital spending will exceed $180 billion. Because of the industry's continued robust capital spending, we expect that industry will continue to generate negative discretionary cash flow. This requires that the industry has consistent access to the capital markets to finance capital spending and dividends requirements.[9]

In addition, the investment community also considers the impact of other considerations, such as leases, purchased power agreements, and postretirement benefit and asset retirement obligations in its evaluation of a utility's financial standing.

The rating agencies have recognized that NorthWestern's significant capital expenditures, coupled with the impact of ongoing regulatory lag, place significant downward pressure on its credit metrics. As Fitch observed, the Company's "large capex program continues to pressure leverage metrics with little to no headroom for deterioration at current levels."[10] Moody's noted that the Company's commitment to a balanced capital structure "will help to improve NorthWestern's financials metrics and bring stability to its credit profile."[11] A conservative financial profile, in the form of a reasonable common equity ratio, is consistent with the need to accommodate these uncertainties and maintain the continuous access to capital under reasonable terms that

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[9] S&P Global Ratings, *For The First Time Ever, The Median Investor-Owned Utility Ratings Falls To The 'BBB' Category*, RatingsDirect (Jan. 20, 2022).

[10] Fitch Ratings, Inc., *NorthWestern Corporation*, Rating Report (May 19, 2022).

[11] Moody's Investors Service, *Moody's affirms NorthWestern Corp. ratings; outlook changed to stable from negative*, Rating Action (May 11, 2022).

is required to fund operations and necessary system investment, even during times of adverse capital market conditions.

Q22. WHAT DOES THIS EVIDENCE SUGGEST WITH RESPECT TO NORTHWESTERN'S PROPOSED CAPITAL STRUCTURE?

A22. NorthWestern's ratemaking capital structure falls within the range of capital structure ratios maintained by the proxy group and is consistent with industry benchmarks for other electric utility operating companies. While industry averages provide one benchmark for comparison, each firm must select its capitalization based on the risks and prospects it faces, as well as its specific needs to access the capital markets. NorthWestern's proposed capital structure reflects the Company's ongoing efforts to maintain its credit standing and support access to capital on reasonable terms. The reasonableness of the Company's capital structure is reinforced by the ongoing uncertainties associated with the utility industry and the importance of supporting continued system investment, even during times of adverse industry or market conditions. Based on this evidence, I conclude that the Company's ratemaking capital structure represents a reasonable mix of capital sources from which to calculate NorthWestern's overall rate of return.

III. FUNDAMENTAL ANALYSES

Q23. WHAT IS THE PURPOSE OF THIS SECTION?

A23. This section briefly reviews the operations and finances of NorthWestern. As a predicate to my quantitative analyses, I also examine conditions impacting todays' capital markets and the general economy. An understanding of the fundamental factors driving the risks and prospects of utilities is essential in developing an informed opinion of investors' expectations and requirements that are the basis of a fair ROE.

A. NorthWestern Energy

Q24. BRIEFLY DESCRIBE NORTHWESTERN AND ITS SOUTH DAKOTA UTILITY OPERATIONS.

A24. NorthWestern provides electricity and natural gas to approximately 764,200 customers in Montana, South Dakota, and Nebraska.[12] Around 18.3% of NorthWestern's rate base and earnings are related to its South Dakota utility operations.

The regulated electric utility business in South Dakota serves more than 64,700 customers and includes generation, transmission, and distribution. In 2022, residential, commercial, and other sales accounted for 38%, 60%, and 2%, respectively, of the Company's South Dakota retail electric utility revenue. Retail electric load requirements are supplied by owned and contracted resources and market purchases. The nameplate capacity of Company-owned and contracted generating capacity include approximately 80 MW of wind, 211 MW of coal, and 138 MW of natural gas resources. The Company's electric transmission and distribution network consists of approximately 3,650 miles of overhead and underground lines. Estimated 2022 year-end rate base attributable to NorthWestern's South Dakota electric operations is approximately $800 million,[13] with total annual revenues of approximately $178 million from residential and commercial customers. NorthWestern is a member of SPP, a FERC-approved transmission organization, and provides regional transmission service pursuant to the SPP Open Access Transmission Tariff.

The regulated natural gas utility business in South Dakota includes transmission and distribution. Natural gas is distributed to approximately 49,200 customers in 80

[12] Unless otherwise noted, the information in this section comes from the NorthWestern Corporation, SEC Form 10-K, for the fiscal year ended December 31, 2022.

[13] NorthWestern Corporation, *Siebert Williams West Coast Utilities Conference* (Mar. 15-16, 2023) at 6.

South Dakota communities over a system of approximately 1,724 miles of underground distribution pipelines. The natural gas transmission system consists of approximately 55 miles of transmission pipeline. Estimated 2022 year-end rate base attributable to NorthWestern's South Dakota natural gas operations is approximately $98 million,[14] with total annual revenues of approximately $68 million from residential and commercial customers.

Q25. WHERE DOES NORTHWESTERN OBTAIN THE CAPITAL USED TO FINANCE ITS INVESTMENT IN UTILITY PLANT?

A25. Common equity capital supporting the South Dakota electric and natural gas utility operations is provided through retained earnings and from the sale of common stock, with NorthWestern being listed on NASDAQ. The Company also issues long-term debt and has been assigned an issuer credit rating of "BBB" by S&P and a long-term rating of "Baa2" by Moody's. Meanwhile, Fitch downgraded the Company's long-term issuer default rating from "BBB+" to "BBB" on March 24, 2022.[15]

Q26. DOES NORTHWESTERN ANTICIPATE THE NEED FOR CAPITAL GOING FORWARD?

A26. Yes. The Company must undertake investments to meet growing peak demand needs and provide for necessary maintenance and replacements of its utility systems as it continues to provide safe and reliable service to its customers. Company-wide utility capital additions are expected to total approximately $2.4 billion through 2027.[16] These

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[14] *Id.*

[15] Fitch Ratings Ltd., *Fitch downgrades NorthWestern Corp. to 'BBB'; Outlook Stable*, Rating Action Commentary (Mar. 24, 2022).

[16] NorthWestern Corporation, SEC Form 10-K for the fiscal year ended December 31, 2022, at 45. Of this amount, approximately $255 million relates to NorthWestern's electric utility system in South Dakota, while $72 million relates to gas utility systems in South Dakota and Nebraska.

planned capital additions are significant, given NorthWestern's total estimated rate base of $4.5 billion.[17] Continued support for NorthWestern's financial integrity and flexibility will be instrumental in attracting the capital necessary to fund these projects in an effective manner.

B. Outlook for Capital Costs

Q27. PLEASE SUMMARIZE CURRENT ECONOMIC CONDITIONS.

A27. U.S. real GDP contracted 3.4% during 2020, but with the easing of lockdowns accompanying the COVID-19 vaccine rollout, the economic outlook improved significantly in 2021, with GDP growing at a pace of 5.7%. Regional increases in COVID-19 cases, expiration of government assistance payments, and declines in wholesale trade led GDP to decline in the first two quarters of 2022. More recently, expanding exports and higher consumer spending led real GDP to grow by 3.2% and 2.9% in the third and fourth quarters of 2022, respectively.[18] Meanwhile, indicators of employment remained stable, with the national unemployment rate at 3.5% in March 2023.[19]

The underlying risk and price pressures associated with the COVID-19 pandemic were overshadowed by a dramatic increase in geopolitical risks in early 2022. These events have also been accompanied by heightened economic uncertainties as inflationary pressures due to COVID-19 supply chain disruptions were further stoked by sharp increases in global commodity prices. The substantial disruption in the energy

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[17] *Id.* at 20.

[18] https://www.bea.gov/news/2023/gross-domestic-product-fourth-quarter-and-year-2022-advance-estimate (last visited Feb. 6, 2023).

[19] https://www.bls.gov/news.release/pdf/empsit.pdf (last visited Apr. 16, 2023).

economy and dramatic rise in inflation led to sharp declines in global equity markets as investors reacted to the related exposures. S&P concluded that:

> The balance of risks is firmly on the downside—with rapid monetary tightening potentially pushing major economies into recession; growing geopolitical tensions exacerbating Europe's energy crisis; lingering high prices pressuring costs and eroding households' purchasing power; and China grappling with structural factors that are undermining its economic growth.[20]

Stimulative monetary and fiscal policies, coupled with economic ramifications stemming from supply-chain disruptions and rapid price rises in the energy and commodities markets, have led to increasing concern that inflation may remain significantly above the Federal Reserve's longer-run benchmark of 2%. In June 2022, CPI inflation peaked at its highest level since November 1981. Since then, CPI inflation has gradually moderated to 5.0% in March 2023.[21] The so-called "core" price index, which excludes more volatile energy and food costs, rose at an annual rate of 5.6% in March 2023. Similarly, PCE inflation rose 5.0% in February 2023, or 4.6% after excluding more volatile food and energy costs.[22] As Federal Reserve Chair Powell has noted:

> Although inflation has moderated recently, it remains too high. The longer the current bout of high inflation continues, the greater the chance that expectations of higher inflation will become entrenched.[23]

More recently, turmoil in the banking sector has shaken investor confidence and increased volatility in bond and equity markets. The Federal Reserve and U.S. Treasury

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[20] S&P Global Ratings, *Global Credit Conditions Q4 2022: Darkening Horizons*, Comments (Sept. 29, 2022).

[21] https://www.bls.gov/news.release/cpi.nr0.htm (last visited Apr. 14, 2023).

[22] https://www.bea.gov/news/2023/personal-income-and-outlays-february-2023 (last visited Apr. 14, 2023).

[23] Federal Reserve, *Transcript of Chair Powell's Press Conference* (Feb. 1, 2023), https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20230201.pdf (last visited Feb. 21, 2023).

took quick and dramatic action to shore up banks' liquidity needs and strengthen public confidence in the banking system, but as Moody's noted, "bank stress has added uncertainty to the outlook."[24]

Q28. HOW HAVE THESE DEVELOPMENTS IMPACTED THE FEDERAL RESERVE'S MONETARY POLICIES?

A28. As of its policy meeting in March 2023, the FOMC has responded to concerns over accelerating inflation by raising the benchmark range for the federal funds rate by a total of 4.75% since March 2022.[25] In addition to these increases, Chair Powell has surmised that the significant draw-down of its balance sheet holdings that began in June 2022 could be the equivalent of another one quarter percent rate hike over the course of a year.[26] Chair Powell noted that, "The process of getting inflation back down to 2 percent has a long way to go and is likely to be bumpy,"[27] with the recent banking crisis amply demonstrating these latent risks.

Q29. WHAT IMPACT DO RISING INFLATION EXPECTATIONS HAVE ON THE RETURN THAT EQUITY INVESTORS REQUIRE FROM NORTHWESTERN?

A29. Implicit in the required rate of return for long-term capital—whether debt or common equity—is compensation for expected inflation. This is highlighted in the textbook, *Financial Management, Theory and Practice*:

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[24] Moody's Investors Service, *Baseline US macro forecasts unchanged but outlook more uncertain*, Sector Comment (Apr. 12. 2023).

[25] The FOMC is a committee composed of twelve members that serves as the monetary policymaking body of the Federal Reserve System.

[26] Federal Reserve, *Transcript of Chair Powell's Press Conference* (May 4, 2022), https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20220504.pdf.

[27] https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20230322.pdf.

> The four most fundamental factors affecting the cost of money are (1) production opportunities, (2) time preferences for consumption, (3) risk, and (4) inflation.[28]

In other words, a part of investors' required return is intended to compensate for the erosion of purchasing power due to rising price levels. This inflation premium is added to the real rate of return (pure risk-free rate plus risk premium) to determine the nominal required return. As a result, higher inflation expectations lead to an increase in the cost of equity capital.

Q30. HAVE THESE DEVELOPMENTS IMPACTED THE RISKS FACED BY UTILITIES AND THEIR INVESTORS?

A30. Yes. Concerns over weakening credit quality prompted S&P to revise its outlook for the regulated utility industry from "stable" to "negative."[29] As S&P explained:

> Even before the current downturn and COVID-19, a confluence of factors, including the adverse impacts of tax reform, historically high capital spending, and associated increased debt, resulted in little cushion in ratings for unexpected operating challenges.[30]

Meanwhile, rising inflation expectations also pose a challenge for utilities, with S&P recently noting that "the threat of inflation comes at a time when credit metrics are already under pressure relative to downside ratings thresholds."[31] S&P noted that "risk

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[28] Eugene F. Brigham, Louis C. Gapenski, and Michael C. Ehrhardt, *Financial Management, Theory and Practice*, Ninth Edition (1999) at 126.

[29] S&P Global Ratings, *COVID-19: The Outlook For North American Regulated Utilities Turns Negative*, RatingsDirect (April 2, 2020).

[30] S&P Global Ratings, *North American Regulated Utilities Face Tough Financial Policy Tradeoffs To Avoid Ratings Pressure Amid The COVID-19 Pandemic*, RatingsDirect (May 11, 2020).

[31] S&P Global Ratings, *Will Rising Inflation Threaten North American Investor-Owned Regulated Utilities' Credit Quality?* (Jul. 20, 2021).

will continue to pressure the credit quality of the industry in 2022."[32] As S&P elaborated:

> Recently, several new credit risks have emerged, including inflation, higher interest rates, and rising commodity prices. Persistent pressure from any of these risks would likely lead to a further weakening of the industry's credit quality in 2022.[33]

Similarly, on November 10, 2022, Moody's revised its outlook for the regulated utilities sector to "negative" from "stable," citing "increasingly challenging business and financial conditions stemming from higher natural gas prices, inflation and rising interest rates."[34]

In affirming its negative outlook on the industry, S&P recently cited weak financial measures, rising energy prices and capital spending, and increased environmental risks as key challenges, noting that, "The industry outlook remains negative and has been negative since early 2020."[35] Value Line echoed these sentiments for electric utilities in the Western US, concluding that:

> The current macroeconomic environment is a challenging period for this group. The main difficulties ae wage inflation, higher interest rates, and high commodity prices for raw materials and purchased power.[36]

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[32] S&P Global Ratings, *For The First Time Ever, The Median Investor-Owned Utility Ratings Falls To The 'BBB' Category*, RatingsDirect (Jan. 20, 2022).

[33] *Id*.

[34] Moody's Investors Service, *Regulated Gas Utilities--US, 2023 outlook negative due to higher natural gas prices, inflation and rising interest rates,* Outlook (Nov. 10, 2022).

[35] S&P Global Ratings, *North American Regulated Utilities, The industry's outlook remains negative*, Industry Top Trends (Jan. 23, 2023).

[36] The Value Line Investment Survey, *Electric Utility (West) Industry* (Apr. 21, 2023).

Q31. DO CHANGES IN UTILITY COMPANY BETA VALUES CORROBORATE AN INCREASE IN INDUSTRY RISK?

A31. Yes. As I explain later, beta is used by the investment community as an important guide to investors' risk perceptions. As shown subsequently in Table 3, the average beta for the Utility Group is 0.90.[37] Prior to the pandemic, the average beta for this same group of electric utilities was 0.57.[38]

The significant shift in pre- and post-pandemic beta values for the Utility Group is further exemplified in Figure 1 below. As illustrated there, average beta values for the Utility Group increased significantly with the beginning of the pandemic in March 2020, continued to increase during 2021, and has remained elevated. This dramatic increase in a primary gauge of investors' risk perceptions is further proof of the rise in the risk of utility common stocks.

FIGURE 1
UTILITY GROUP BETA VALUES

[37] As indicated on Exhibit AMM-7, this is based on data as of March 31, 2023.

[38] The Value Line Investment Survey, *Summary & Index* (Feb. 14, 2020).

Q32. HAVE INCREASED RISKS AND HIGHER INFLATION RESULTED IN HIGHER CAPITAL COSTS?

A32. Yes. While the cost of equity is unobservable, yields on long-term bonds provide a widely referenced benchmark for the direction of capital costs, including required returns on common stocks. Table 2 below compares the average yields on Treasury securities and Baa-rated public utility bonds during March 2023 with those prevailing in 2021.

TABLE 2
BOND YIELD TRENDS

Series	March 2023	2021	Change (bps)
10-Year Treasury Bonds	3.66%	1.44%	222
30-Year Treasury Bonds	3.77%	2.05%	172
Baa Utility Bonds	5.68%	3.35%	233

As shown above, trends in bond yields document a substantial increase in the returns on long-term capital demanded by investors. With respect to utility bond yields—which are the most relevant indicator in gauging the implications for the Company's common equity investors—average yields are now over 230 basis points above the level prevailing during 2021.

Q33. WHAT IMPLICATIONS DO THESE TRENDS HAVE IN EVALUATING A FAIR ROE FOR NORTHWESTERN?

A33. The upward move in interest rates suggests that long-term capital costs—including the cost of equity—have increased significantly. Exposure to rising interest rates, inflation, and capital expenditure requirements also reinforce the importance of buttressing NorthWestern's credit standing. Considering the potential for financial market instability, competition with other investment alternatives, and investors' sensitivity to

risk exposures in the utility industry, maintaining credit strength is a key ingredient in maintaining access to capital at reasonable cost.

Q34. WOULD IT BE REASONABLE TO DISREGARD THE IMPLICATIONS OF CURRENT CAPITAL MARKET CONDITIONS IN ESTABLISHING A FAIR ROE FOR NORTHWESTERN?

A34. No. They reflect the reality in which NorthWestern must attract and retain capital. The standards underlying a fair rate of return require an authorized ROE for the Company that is competitive with other investments of comparable risk and sufficient to preserve its ability to maintain access to capital on reasonable terms. These standards can only be met by considering the requirements of investors over the time period when the rates established in this proceeding will be in effect. If the upward shift in investors' risk perceptions and required rates of return for long-term capital is not incorporated in the allowed ROE, the results will fail to meet the comparable earnings standard that is fundamental in determining the cost of capital. From a more practical perspective, failing to provide investors with the opportunity to earn a rate of return commensurate with NorthWestern's risks will weaken its financial integrity, while hampering the Company's ability to attract the necessary capital.

IV. DETERMINATION OF THE PROXY GROUP

Q35. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A35. This section explains the basis for the proxy group I used to estimate the cost of equity, examines alternative objective indicators of investment risk for these firms, and compares the investment risks applicable to NorthWestern with my reference group.

Q36. WHAT KEY PRINCIPLES UNDERPIN THE EVALUATION OF A PROXY GROUP?

A36. The United States Supreme Court's *Hope* and *Bluefield* decisions[39] establish a standard of comparison between a subject utility and other companies of comparable risk in determining a just and reasonable ROE. The generally accepted approach is to select a group of companies that are of similar risk to the subject utility (the "proxy group"), and then to perform various quantitative analyses based on the proxy group to estimate investors' required returns. The results of these analyses, in turn, are used to evaluate a range of reasonableness and a final recommendation for the ROE attributable to the subject utility.

A. Proxy Group Criteria

Q37. HOW DO YOU IMPLEMENT QUANTITATIVE METHODS TO ESTIMATE THE COST OF COMMON EQUITY FOR NORTHWESTERN?

A37. Application of quantitative methods to estimate the cost of common equity requires observable capital market data, such as stock prices and beta values. Moreover, even for a firm with publicly traded stock, the cost of common equity can only be estimated. As a result, applying quantitative models using observable market data only produces an estimate that inherently includes some degree of observation error. Thus, the accepted approach to increase confidence in the results is to apply quantitative methods to a proxy group of publicly traded companies that investors regard as risk comparable. The results of the analysis on the sample of companies are relied upon to establish a range of reasonableness for the cost of equity for the specific company at issue.

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[39] *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679 (1923) (*Bluefield*); *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) (*Hope*).

Q38. HOW DO YOU IDENTIFY THE PROXY GROUP OF UTILITIES RELIED ON FOR YOUR ANALYSES?

A38. To reflect the risks and prospects associated with NorthWestern's jurisdictional utility operations, I began with the following criteria to identify a proxy group of utilities:

1. Included in the Electric Utility Industry groups compiled by Value Line.
2. Corporate credit ratings from Moody's and S&P within one notch of the Company's current ratings. For Moody's, this resulted in a ratings range of Baa3, Baa2, and Baa1; for S&P the range is BBB-, BBB, and BBB+.
3. Paid common dividends over the last six months and have not announced a dividend cut since that time.
4. No ongoing involvement in a major merger or acquisition that would distort quantitative results.

Q39. IS THERE ANY OTHER PUBLICLY TRADED UTILITY THAT IS RELEVANT IN ESTABLISHING A PROXY GROUP?

A39. Yes. Emera Inc.'s electric and gas utility operations are comparable to those of the other utilities in the proxy group.[40] Although Value Line currently includes Emera Inc. in its power industry group, rather than its utility groups, Emera Inc.'s regulated electric and gas utility operations are its dominant businesses and account for more than 95% of consolidated net income,[41] with its Florida utility operations accounting for 65% of consolidated net income.[42] Thus, investors would regard Emera Inc. as a comparable investment alternative that is relevant to an evaluation of the required rate of return for NorthWestern.

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[40] In addition to Emera, Inc., I also considered Algonquin Power & Utilities Company. While this company would be regarded as a comparable utility investment opportunity by investors, it did not meet my required screening criteria due to a major acquisition, which is ongoing.

[41] Emera Inc., *Investors Presentation* (March & April 2023). https://s25.q4cdn.com/978989322/files/doc_presentations/2022/03/March-2022-Marketing-Presentation_FINAL.pdf (last visited Mar. 23, 2022).

[42] *Id.*

These criteria result in a proxy group of twenty-two companies, which I refer to as the "Utility Group."[43]

B. Relative Risks of the Utility Group and NorthWestern

Q40. HOW DO YOU EVALUATE INVESTORS' RISK PERCEPTIONS FOR THE UTILITY GROUP?

A40. My evaluation of relative risk considers five published benchmarks that are widely relied on by investors; namely, credit ratings from Moody's and S&P, along with Value Line's Safety Rank, Financial Strength Rating, and beta values. Credit ratings are assigned by independent rating agencies for the purpose of providing investors with a broad assessment of the creditworthiness of a firm. Ratings generally extend from triple-A (the highest) to D (in default). Other symbols (*e.g.*, "+" or "-") are used to show relative standing within a category. Because the rating agencies' evaluation includes all of the factors normally considered important in assessing a firm's relative credit standing, corporate credit ratings provide broad, objective measures of overall investment risk that are readily available to investors. Widely cited in the investment community and referenced by investors, credit ratings are also frequently used as a primary risk indicator in establishing proxy groups to estimate the cost of common equity.

While credit ratings provide the most widely referenced benchmark for investment risks, other quality rankings published by investment advisory services also provide relative assessments of risks that are considered by investors in forming their expectations for common stocks. Value Line's primary risk indicator is its Safety Rank, which ranges from "1" (Safest) to "5" (Riskiest). This overall risk measure is intended to capture the total risk of a stock and incorporates elements of stock price stability and

[43] Of these twenty-two companies, sixteen are combination electric/natural gas utilities, while six are electric utilities.

financial strength. Given that Value Line is perhaps the most widely available source of investment advisory information, its Safety Rank provides useful guidance regarding the risk perceptions of investors.

The Financial Strength Rating is designed as a guide to overall financial strength and creditworthiness, with the key inputs including financial leverage, business volatility measures, and company size. Value Line's Financial Strength Ratings range from "A++" (strongest) down to "C" (weakest) in nine steps. These objectives, published indicators incorporate consideration of a broad spectrum of risks, including financial and business position, relative size, and exposure to firm-specific factors.

Finally, beta measures a utility's stock price volatility relative to the market as a whole and reflects the tendency of a stock's price to follow changes in the market. A stock that tends to respond less to market movements has a beta less than 1.00, while stocks that tend to move more than the market have betas greater than 1.00. Beta is the only relevant measure of investment risk under modern capital market theory and is widely cited in academics and in the investment industry as a guide to investors' risk perceptions.

Q41. HOW DO THE OVERALL RISK OF YOUR PROXY GROUP COMPARE TO NORTHWESTERN?

A41. Table 3 compares the Utility Group with the Company across the five key indices of investment risk discussed above.

TABLE 3
COMPARISON OF RISK INDICATORS

			Value Line		
	S&P	Moody's	Safety Rank	Financial Strength	Beta
Utility Group	BBB+	Baa2	2	A	0.90
NorthWestern Corp.	BBB	Baa2	2	B++	0.90

Q42. WHAT DOES THIS COMPARISON INDICATE REGARDING INVESTORS' ASSESSMENT OF THE RELATIVE RISKS ASSOCIATED WITH YOUR UTILITY GROUP?

A42. NorthWestern's S&P rating is lower than the average for the Utility Group, indicating slightly greater risk, while the average Moody's credit rating corresponding to the Utility Group is identical to that of NorthWestern. The average Value Line Safety Rank and beta values for the Utility Group are identical to those assigned to the Company. Meanwhile, the average Financial Strength rating for the Utility Group indicates lower risk compared to NorthWestern. Considered together, a comparison of these objective measures indicates that investors would likely conclude that the overall investment risks for the firms in the Utility Group are comparable to, if not slightly less risky than NorthWestern.

Q43. DO YOU CONSIDER THE IMPLICATIONS OF REGULATORY MECHANISMS IN YOUR EVALUATION?

A43. Yes. In response to increasing sensitivity over fluctuations in costs and the importance of advancing other public interest goals such as reliability, energy conservation, and safety, utilities and their regulators have sought to mitigate cost recovery uncertainty and align the interest of utilities and their customers. As a result, adjustment mechanisms, cost trackers, and future test years have become increasingly prevalent, along with alternatives to traditional ratemaking such as formula rates and multi-year rate plans. *RRA Regulatory Focus* concluded in its most recent review of adjustment clauses that:

> More recently and with greater frequency, commissions have approved mechanisms that permit the costs associated with the construction of new generation or delivery infrastructure to be used, effectively including these items in rate base without the need for a full rate case. In some instances, these mechanisms may even provide the utilities a cash return on construction work in progress.

> . . . [C]ertain types of adjustment clauses are more prevalent than others. For example, those that address electric fuel and gas commodity charges are in place in all jurisdictions. Also, about two-thirds of all utilities have riders in place to recover costs related to energy efficiency programs, and roughly half of the utilities have some type of decoupling mechanism in place.[44]

As shown on Exhibit AMM-4, and reflective of this trend, the companies in the Utility Group operate under a wide variety of cost adjustment mechanisms, which encompass revenue decoupling and adjustment clauses designed to address rising capital investment outside of a traditional rate case and increasing costs of environmental compliance measures, as well as riders to recover the cost of environmental compliance measures, bad debt expenses, certain taxes and fees, post-retirement employee benefit costs and transmission-related charges.

Q44. WHAT REGULATORY MECHANISMS ARE APPLICABLE TO NORTHWESTERN'S UTILITY OPERATIONS IN SOUTH DAKOTA?

A44. NorthWestern operates under an adjustment mechanism for electric fuel and purchased power costs and a purchased gas adjustment mechanism, which are universal to the companies in the Utility Group. Beyond these provisions, the Company operates under trackers for Ad Valorem taxes and electric transmission costs paid to other parties.

Q45. DOES THE COMPANY'S LACK OF REGULATORY MECHANISMS SET IT APART FROM THE FIRMS IN THE UTILITY GROUP?

A45. Yes. The mechanisms currently in place for the Company's South Dakota jurisdictional utility operations are more limited than those approved for other firms in the industry. In contrast to many of the specific operating companies associated with the firms in the Utility Group, the Commission has not approved cost tracking mechanisms to address ongoing investment in generation capacity or allowed for timely recovery of significant

[44] S&P Global Market Intelligence, *Adjustment Clause: A state-by-state overview*, RRA Regulatory Focus (Jul. 18, 2022).

capital investment in other facilities. Nor does NorthWestern benefit from a normalization adjustment or decoupling mechanism to insulate margins from weather fluctuations or declining usage. Further, South Dakota has routinely relied on a historical test year approach, which also creates a lag in cost recovery. Regulatory adjustment mechanisms have important implications for a utility's financial health and relative risk. Thus, while existing regulatory clauses would be regarded as supportive, investors would view the risks of NorthWestern as higher than the proxy group in this important respect.

Q46. ARE YOU RECOMMENDING A SPECIFIC ADDER TO THE COMPANY'S BASE ROE TO REFLECT ITS RELATIVE LACK OF REGULATORY MECHANISMS?

A46. No. While this factor indicates more risk for NorthWestern relative to other utilities, I am not proposing a specific ROE adder to account for these greater uncertainties. This serves to emphasize the conservative nature of my ROE recommendation.

V. CAPITAL MARKET ESTIMATES AND ANALYSES

Q47. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A47. This section presents capital market estimates of the cost of equity. First, I discuss the concept of the cost of common equity, along with the risk-return tradeoff principle fundamental to capital markets. Next, I describe the quantitative analyses I conducted to estimate the cost of common equity for the Utility Group.

A. Economic Standards

Q48. WHAT FUNDAMENTAL ECONOMIC PRINCIPLE UNDERLIES THE COST OF EQUITY CONCEPT?

A48. The concept of the cost of equity concept is based on the tenet that investors are risk averse. In capital markets where relatively risk-free assets are available (e.g., U.S. Treasury securities), investors can be induced to hold riskier assets only if they are

offered a premium, or additional return, above the rate of return on a risk-free asset. Because all assets compete for investor funds, riskier assets must yield a higher expected rate of return than safer assets to induce investors to invest and hold them.

Given this risk-return tradeoff, the required rate of return (k) from an asset (i) can generally be expressed as:

$$k_i = R_f + RP_i$$

where: R_f = Risk-free rate of return, and
RP_i = Risk premium required to hold riskier asset i.

Thus, the required rate of return for a particular asset at any time is a function of: (1) the yield on risk-free assets, and (2) the asset's relative risk, with investors demanding correspondingly larger risk premiums for bearing greater risk.

Q49. IS THERE EVIDENCE THAT THE RISK-RETURN TRADEOFF PRINCIPLE OPERATES IN THE CAPITAL MARKETS?

A49. Yes. The risk-return tradeoff can be documented in segments of the capital markets where required rates of return can be directly inferred from market data and where generally accepted measures of risk exist. Bond yields, for example, reflect investors' expected rates of return, and bond ratings measure the risk of individual bond issues. Comparing the observed yields on government securities, which are considered free of default risk, to the yields on bonds of various rating categories demonstrates that the risk-return tradeoff does, in fact, exist.

Q50. DOES THE RISK-RETURN TRADEOFF OBSERVED WITH FIXED INCOME SECURITIES EXTEND TO COMMON STOCKS AND OTHER ASSETS?

A50. It is widely accepted that the risk-return tradeoff evidenced with long-term debt extends to all assets. Documenting the risk-return tradeoff for assets other than fixed income securities, however, is complicated by two factors. First, there is no standard measure of risk applicable to all assets. Second, for most assets—including common stock—

required rates of return cannot be observed. Yet there is every reason to believe that investors demonstrate risk aversion in deciding whether to hold common stocks and other assets, just as when choosing among fixed-income securities.

Q51. IS THIS RISK-RETURN TRADEOFF LIMITED TO DIFFERENCES BETWEEN FIRMS?

A51. No. The risk-return tradeoff principle applies not only to investments in different firms, but also to different securities issued by the same firm. The securities issued by a utility vary considerably in risk because they have different characteristics and priorities. As noted earlier, the last investors in line are common shareholders. They share in the net earnings, if any, that remain after all other claimants have been paid. As a result, the rate of return that investors require from a utility's common stock, the most junior and riskiest of its securities, must be considerably higher than the yield offered by the utility's senior, long-term debt.

Q52. WHAT ARE THE CHALLENGES IN DETERMINING A JUST AND REASONABLE ROE FOR A REGULATED ENTERPRISE?

A52. The actual return investors require is not directly observable. Different methodologies have been developed to estimate investors' expected and required return on capital, but these theoretical tools produce a range of estimates, based on different assumptions and inputs. The DCF method, which is frequently referenced and relied on by regulators, is only one theoretical approach to gain insight into the return investors require. There are a number of other methodologies for estimating the cost of capital and the ranges produced by these approaches can vary widely.

Q53. IS IT CUSTOMARY TO CONSIDER THE RESULTS OF MULTIPLE APPROACHES WHEN EVALUATING A JUST AND REASONABLE ROE?

A53. Yes. In my experience, financial analysts and regulators routinely consider the results of alternative approaches in evaluating a fair ROE. No single method can be regarded

as failsafe, with all approaches having advantages and shortcomings. As FERC has noted, "[t]he determination of rate of return on equity starts from the premise that there is no single approach or methodology for determining the correct rate of return."[45] Similarly, a publication of the Society of Utility and Regulatory Financial Analysts concluded that:

> Each model requires the exercise of judgment as to the reasonableness of the underlying assumptions of the methodology and on the reasonableness of the proxies used to validate the theory. Each model has its own way of examining investor behavior, its own premises, and its own set of simplifications of reality. Each method proceeds from different fundamental premises, most of which cannot be validated empirically. Investors clearly do not subscribe to any singular method, nor does the stock price reflect the application of any one single method by investors.[46]

As this treatise succinctly observed, "no single model is so inherently precise that it can be relied on solely to the exclusion of other theoretically sound models."[47] Similarly, *New Regulatory Finance* concluded that:

> There is no single model that conclusively determines or estimates the expected return for an individual firm. Each methodology possesses its own way of examining investor behavior, its own premises, and its own set of simplifications of reality. Each method proceeds from different fundamental premises that cannot be validated empirically. Investors do not necessarily subscribe to any one method, nor does the stock price reflect the application of any one single method by the price-setting investor. There is no monopoly as to which method is used by investors. In the absence of any hard evidence as to which method outdoes the other, all relevant evidence should be used and weighted equally, in order to minimize judgmental error, measurement error, and conceptual infirmities.[48]

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[45] *Northwest Pipeline Co.*, Opinion No. 396-C, 81 FERC ¶ 61,036 at 4 (1997).

[46] David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Society of Utility and Regulatory Financial Analysts (2010) at 84.

[47] *Id*.

[48] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports, Inc. (2006) at 429.

Thus, while the DCF model is a recognized approach, it is not without shortcomings and does not otherwise eliminate the need to ensure that the "end result" is fair. The Indiana Utility Regulatory Commission has recognized this principle:

> There are three principal reasons for our unwillingness to place a great deal of weight on the results of any DCF analysis. One is. . . the failure of the DCF model to conform to reality. The second is the undeniable fact that rarely if ever do two expert witnesses agree on the terms of a DCF equation for the same utility – for example, as we shall see in more detail below, projections of future dividend cash flow and anticipated price appreciation of the stock can vary widely. And, the third reason is that the unadjusted DCF result is almost always well below what any informed financial analysis would regard as defensible, and therefore require an upward adjustment based largely on the expert witness's judgment. In these circumstances, we find it difficult to regard the results of a DCF computation as any more than suggestive.[49]

More recently, FERC recognized the potential for any application of the DCF model to produce unreliable results.[50]

As this discussion indicates, consideration of the results of alternative approaches reduces the potential for error associated with any single quantitative method. Just as investors inform their decisions using a variety of methodologies, my evaluation of a fair ROE for the Company considered the results of multiple financial models.

Q54. WHAT DOES THIS DISCUSSION IMPLY WITH RESPECT TO ESTIMATING THE ROE FOR A UTILITY?

A54. Although the ROE cannot be observed directly, it is a function of the returns available from other investment alternatives and the risks of the investment. Because it is not readily observable, the ROE for a particular utility must be estimated by analyzing information about capital market conditions generally, assessing the relative risks of the

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[49] *Ind. Michigan Power Co.*, Cause No. 38728, 116 PUR4th 1, 17-18 (IURC 8/24/1990).

[50] *Coakley v. Bangor Hydro-Elec. Co.*, Opinion No. 531, 147 FERC ¶ 61,234 at P 41 (2014).

company specifically, and employing alternative quantitative methods that focus on investors' required rates of return. These methods typically attempt to infer investors' required rates of return from stock prices, interest rates, or other capital market data.

B. Discounted Cash Flow Analyses

Q55. HOW IS THE DCF MODEL USED TO ESTIMATE THE COST OF COMMON EQUITY?

A55. DCF models assume that the price of a share of common stock is equal to the present value of the expected cash flows (i.e., future dividends and stock price) that will be received while holding the stock, discounted at investors' required rate of return. Rather than developing annual estimates of cash flows into perpetuity, the DCF model can be simplified to a "constant growth" form:[51]

$$P_0 = \frac{D_1}{k_e - g}$$

where: P_0 = Current price per share;
D_1 = Expected dividend per share in the coming year;
k_e = Cost of equity; and,
g = Investors' long-term growth expectations.

The cost of common equity (k_e) can be isolated by rearranging terms within the equation:

[51] The constant growth DCF model is dependent on a number of strict assumptions, which in practice are never met. These include a constant growth rate for both dividends and earnings; a stable dividend payout ratio; the discount rate exceeds the growth rate; a constant growth rate for book value and price; a constant earned rate of return on book value; no sales of stock at a price above or below book value; a constant price-earnings ratio; a constant discount rate (*i.e.*, no changes in risk or interest rate levels and a flat yield curve); and all the above extend to infinity. Nevertheless, the DCF method provides a workable and practical approach to estimate investors' required return that is widely referenced in utility ratemaking.

$$k_e = \frac{D_1}{P_0} + g$$

This constant growth form of the DCF model recognizes that the rate of return to stockholders consists of two parts: 1) dividend yield (D_1/P_0); and 2) growth (g). In other words, investors expect to receive a portion of their total return in the form of current dividends and the remainder through price appreciation.

Q56. WHAT STEPS ARE REQUIRED TO APPLY THE CONSTANT GROWTH DCF MODEL?

A56. The first step in implementing the constant growth DCF model is to determine the expected dividend yield (D_1/P_0) for the firm in question. This is usually calculated based on an estimate of dividends to be paid in the coming year divided by the current price of the stock. The second, and more controversial, step is to estimate investors' long-term growth expectations (g) for the firm. The final step is to add the firm's dividend yield and estimated growth rate to arrive at an estimate of its cost of common equity.

Q57. HOW DO YOU DETERMINE THE DIVIDEND YIELDS FOR THE FIRMS IN THE UTILITY GROUP?

A57. I rely on Value Line's estimates of dividends to be paid by each of these utilities over the next twelve months as D_1. This annual dividend is then divided by a 30-day average stock price for each utility to arrive at the expected dividend yield. The expected dividends, stock prices, and resulting dividend yields for the firms in the Utility Group are presented on page 1 of Exhibit AMM-5. As shown there, dividend yields for the firms in the Utility Group range from 2.5% to 5.1% and average 3.9%.

Q58. WHAT IS THE NEXT STEP IN APPLYING THE CONSTANT GROWTH DCF MODEL?

A58. The next step is to evaluate long-term growth expectations, or "g", for the firm in question. In constant growth DCF theory, earnings, dividends, book value, and market

price are all assumed to grow in lockstep, and the growth horizon of the DCF model is infinite. But implementation of the DCF model is more than just a theoretical exercise; it is an attempt to replicate the mechanism investors used to arrive at observable stock prices. A wide variety of techniques can be used to derive growth rates, but the only "*g*" that matters in applying the DCF model is the value that investors expect.

Q59. WHAT ARE INVESTORS MOST LIKELY TO CONSIDER IN DEVELOPING THEIR LONG-TERM GROWTH EXPECTATIONS?

A59. Implementation of the DCF model is solely concerned with replicating the forward-looking evaluation of real-world investors. In the case of utilities, dividend growth rates are not likely to provide a meaningful guide to investors' current growth expectations. Utility dividend policies reflect the need to accommodate business risks and investment requirements in the industry, as well as potential uncertainties in the capital markets. As a result, dividend growth in the utility industry generally lags growth in earnings as utilities conserve financial resources.

A measure that plays a pivotal role in determining investors' long-term growth expectations is future trends in EPS, which provide the source for future dividends and ultimately support share prices. The importance of earnings in evaluating investors' expectations and requirements is well accepted in the investment community, and surveys of analytical techniques relied on by professional analysts indicate that growth in earnings is far more influential than trends in DPS.

The availability of projected EPS growth rates is also key to investors relying on this measure as compared to future trends in DPS. Apart from Value Line, investment advisory services do not generally publish comprehensive DPS growth projections, and this scarcity of dividend growth rates relative to the abundance of earnings forecasts attests to their relative influence. The fact that securities analysts focus on EPS growth, and that DPS growth rates are not routinely published, indicates that projected EPS

growth rates are likely to provide a superior indicator of the future long-term growth expected by investors.

Q60. DO THE GROWTH RATE PROJECTIONS OF SECURITY ANALYSTS CONSIDER HISTORICAL TRENDS?

A60. Yes. Professional security analysts study historical trends extensively in developing their projections of future earnings. Hence, to the extent there is any useful information in historical patterns, that information is incorporated into analysts' growth forecasts.

Q61. WHAT GROWTHG RATES ARE SECURITY ANALYSTS CURRENTLY PROJECTING FOR THE FIRMS IN THE PROXY GROUP?

A61. EPS growth projections for each of the firms in the Utility Group reported by Value Line, IBES, and Zacks are displayed on page 2 of Schedule AMM-5.

Q62. WHAT OTHER TECHNIQUE CAN BE USED TO ESTIMATE INVESTORS' EXPECTATIONS OF FUTURE LONG-TERM GROWTH WHEN APPLYING THE CONSTANT GROWTH DCF MODEL?

A62. In constant growth theory, growth in book equity will be equal to the product of the earnings retention ratio (one minus the dividend payout ratio) and the earned rate of return on book equity. Furthermore, if the earned rate of return and the payout ratio are constant over time, growth in earnings and dividends will be equal to growth in book value. Even though these conditions are never met in practice, this "sustainable growth" approach may provide a rough guide for evaluating a firm's growth prospects and is sometimes proposed in regulatory proceedings.

The sustainable growth rate is calculated by the formula, g = br+sv, where "b" is the expected retention ratio, "r" is the expected earned return on equity, "s" is the percent of common equity expected to be issued annually as new common stock, and "v" is the equity accretion rate. Under DCF theory, the "sv" factor is a component of the growth rate designed to capture the impact of issuing new common stock at a price

above, or below, book value. The sustainable, "br+sv" growth rates for each firm in the proxy group are summarized on page 2 of Exhibit AMM-5, with the underlying details being presented in Exhibit AMM-6.

The sustainable growth rate analysis shown in Exhibit AMM-6 incorporates an "adjustment factor" because Value Line's reported returns are based on year-end book values. Since earnings is a flow over the year while book value is determined at a given point in time, the measurement of earnings and book value are distinct concepts. It is this fundamental difference between a flow (earnings) and point estimate (book value) that makes it necessary to adjust to mid-year in calculating the ROE. Given that book value will increase or decrease over the year, using year-end book value (as Value Line does) understates or overstates the average investment that corresponds to the flow of earnings. To address this concern, earnings must be matched with a corresponding representative measure of book value, or the resulting ROE will be distorted. The adjustment factor determined in Exhibit AMM-6, is solely a means of converting Value Line's end-of-period values to an average return over the year, and the formula for this adjustment is supported in recognized textbooks and has been adopted by other regulators.[52]

Q63. ARE THERE SIGNIFICANT SHORTCOMINGS ASSOCIATED WITH THE "BR+SV" GROWTH RATE?

A63. Yes. First, in order to calculate the sustainable growth rate, it is necessary to develop estimates of investors' expectations for four separate variables; namely, "b", "r", "s", and "v." Given the inherent difficulty in forecasting each parameter and the difficulty of estimating the expectations of investors, the potential for measurement error is significantly increased when using four variables, as opposed to referencing a direct

[52] *See,* Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 305-306; *Bangor Hydro-Electric Co. et al*., 122 FERC ¶ 61,265 at n.12 (2008).

projection for EPS growth. Second, empirical research in the finance literature indicates that sustainable growth rates are not as significantly correlated to measures of value, such as share prices, as are analysts' EPS growth forecasts.[53] The "sustainable growth" approach is included for completeness, but evidence indicates that analysts' forecasts provide a superior and more direct guide to investors' growth expectations. Accordingly, I give less weight to cost of equity estimates based on br+sv growth rates in evaluating the results of the DCF model.

Q64. WHAT COST OF COMMON EQUITY ESTIMATES ARE IMPLIED FOR THE UTILITY GROUP USING THE DCF MODEL?

A64. After combining the dividend yields and respective growth projections for each utility, the resulting cost of common equity estimates are shown on page 3 of Exhibit AMM-5.

Q65. IN EVALUATING THE RESULTS OF THE CONSTANT GROWTH DCF MODEL, IS IT APPROPRIATE TO ELIMINATE ILLOGICAL ESTIMATES AT THE EXTREME LOW OR HIGH END OF THE RANGE?

A65. Yes. It is essential that cost of equity estimates resulting from quantitative methods pass fundamental tests of reasonableness and economic logic. Accordingly, DCF estimates that are implausibly low or high should be eliminated.

Q66. HAVE OTHER REGULATORS EMPLOYED SUCH TESTS?

A66. Yes. FERC has noted that adjustments are justified where applications of the DCF approach and other methods produce illogical results. FERC evaluates low-end DCF results against observable yields on long-term public utility debt and has recognized that it is appropriate to eliminate estimates that do not sufficiently exceed this threshold.[54]

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[53] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports, Inc. (2006) at 307.

[54] *See, e.g.*, *Southern California Edison Co*., 131 FERC ¶ 61,020 at P 55 (2010).

FERC's current practice is to exclude low-end cost of estimates that fall below the six-month average yield on Baa-rated utility bonds, plus 20% of the CAPM market risk premium.[55] In addition, FERC also excluding estimates that are "irrationally or anomalously high."[56] Similarly, the Staff of the MDPSC has also eliminated DCF values where they do not offer a sufficient premium above the cost of debt to be attractive to an equity investor.[57]

Q67. DO YOU EXCLUDE ANY ESTIMATES AT THE LOW OR HIGH END OF THE RANGE OF RESULTS?

A67. Yes. As highlighted on page 3 of Exhibit AMM-5, I eliminate sixteen low-end DCF estimates ranging from -7.6% to 7.3%, as well as high-end DCF estimates of 19.8% and 20.4%. After removing these illogical values, lower end of the DCF results is set by a cost of equity estimate of 7.4%, while the upper end is established by a cost of equity estimate of 14.9%. While a 14.9% cost of equity estimate may exceed the majority of the remaining values, low-end DCF estimates in the 7.4% to 8.1% range are assuredly far below investors' required rate of return. Taken together and considered along with the balance of the results, the remaining values provide a reasonable basis on which to frame the range of plausible DCF estimates and evaluate investors' required rate of return.

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[55] Based on the six-month average yield at March 2023 of 5.75% and the 7.8% market risk premium shown on Exhibit AMM-7, this implies a current low-end threshold of approximately 7.3%.

[56] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 171 FERC ¶ 61,154 at P 152 (2020).

[57] See, *e.g.*, Maryland Public Service Commission, Case No. 9670, *Direct Testimony and Exhibits of Drew M. McAuliffe* (Dec. 2, 2021) at 15-16.

Q68. WHAT COST OF EQUITY ESTIMATES ARE IMPLIED BY YOUR DCF RESULTS FOR THE UTILITY GROUP?

A68. As shown on page 3 of Exhibit AMM-5 and summarized in Table 4, after eliminating illogical values, application of the constant growth DCF model resulted in the following cost of equity estimates:

TABLE 4
DCF RESULTS – UTILITY GROUP

Growth Rate	Average	Midpoint
Value Line	9.4%	10.1%
IBES	10.4%	10.2%
Zacks	10.0%	11.5%
br + sv	9.1%	9.3%

C. Capital Asset Pricing Model

Q69. PLEASE DESCRIBE THE CAPM.

A69. The CAPM is a theory of market equilibrium that measures risk using the beta coefficient. Assuming investors are fully diversified, the relevant risk of an individual asset (e.g., common stock) is its volatility relative to the market as a whole, with beta reflecting the tendency of a stock's price to follow changes in the market. A stock that tends to respond less to market movements has a beta less than 1.0, while stocks that tend to move more than the market have betas greater than 1.0. The CAPM is mathematically expressed as:

$$R_j = R_f + \beta_j(R_m - R_f)$$

where: R_j = required rate of return for stock j;
R_f = risk-free rate;
R_m = expected return on the market portfolio; and,
β_j = beta, or systematic risk, for stock j.

Under the CAPM formula above, a stock's required return is a function of the risk-free rate (R_f), plus a risk premium that is scaled to reflect the relative volatility of a

firm's stock price, as measured by beta (β). Like the DCF model, the CAPM is an *ex-ante,* or forward-looking model based on expectations of the future. As a result, to produce a meaningful estimate of investors' required rate of return, the CAPM must be applied using estimates that reflect the expectations of actual investors in the market, not with backward-looking, historical data.

Q70. WHY IS THE CAPM APPROACH A RELEVANT COMPONENT WHEN EVALUATING THE COST OF EQUITY FOR NORTHWESTERN?

A70. The CAPM approach (which also forms the foundation of the ECAPM) generally is considered to be the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. Because this is the dominant model for estimating the cost of equity outside the regulatory sphere, the CAPM (and ECAPM) provides important insight into investors' required rate of return for utility stocks.

Q71. HOW DO YOU APPLY THE CAPM TO ESTIMATE THE ROE?

A71. Application of the CAPM to the Utility Group is based on a forward-looking estimate for investors' required rate of return from common stocks presented in Exhibit AMM-7. To capture the expectations of today's investors in current capital markets, the expected market rate of return was estimated by conducting a DCF analysis on the dividend paying firms in the S&P 500.

The dividend yield for each firm is obtained from Value Line, and the growth rate is equal to the average of the earnings growth projections for each firm published by IBES, Zacks, and Value Line, with each firm's dividend yield and growth rate being weighted by its proportionate share of total market value. After removing companies with growth rates that were negative or greater than 20%, the weighted average of the projections for the individual firms implies an average growth rate over the next five years of 9.5%. Combining this average growth rate with a year-ahead dividend yield of

2.1% results in a current cost of common equity estimate for the market as a whole (R_m) of 11.6%. Subtracting a 3.8% risk-free rate based on the average yield on 30-year Treasury bonds for the six month period ending March 2023 produced a market equity risk premium of 7.8%.

Q72. WHAT IS THE SOURCE OF THE BETA VALUES YOU USED TO APPLY THE CAPM?

A72. I relied on the beta values reported by Value Line, which in my experience is the most widely referenced source for beta in regulatory proceedings. As noted in *New Regulatory Finance*:

> Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors. … Value Line betas are computed on a theoretically sound basis using a broadly based market index, and they are adjusted for the regression tendency of betas to converge to 1.00.[58]

Q73. WHAT ELSE SHOULD BE CONSIDERED IN APPLYING THE CAPM?

A73. Financial research indicates that the CAPM does not fully account for observed differences in rates of return attributable to firm size. Accordingly, a modification is required to account for this size effect. As explained by Morningstar:

> One of the most remarkable discoveries of modern finance is that of a relationship between company size and return. … The relationship between company size and return cuts across the entire size spectrum; it is not restricted to the smallest stocks. … This size-rated phenomenon has prompted a revision to the CAPM, which includes a size premium.[59]

According to the CAPM, the expected return on a security should consist of the riskless rate, plus a premium to compensate for the systematic risk of the particular security. The degree of systematic risk is represented by the beta coefficient. The need

[58] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports (2006) at 71.

[59] Morningstar, *Ibbotson SBBI 2015 Classic Yearbook*, at pp. 99, 108.

for the size adjustment arises because differences in investors' required rates of return that are related to firm size are not fully captured by beta. To account for this, researchers have developed size premiums that need to be added to account for the level of a firm's market capitalization in determining the CAPM cost of equity.[60] Accordingly, my CAPM analysis also incorporates an adjustment to recognize the impact of size distinctions, as measured by the market capitalization for the firms in the Utility Group.

Q74. WHAT IS THE BASIS FOR THE SIZE ADJUSTMENT?

A74. The size adjustment required in applying the CAPM is based on the finding that *after controlling for risk differences reflected in beta*, the CAPM overstates returns to companies with larger market capitalizations and understates returns for relatively smaller firms. The size adjustments utilized in my analysis are sourced from Kroll, who now publish the well-known compilation of capital market series originally developed by Professor Roger G. Ibbotson of the Yale School of Management, and most recently published by Kroll. Calculation of the size adjustments involve the following steps:

1. Divide all stocks traded on the NYSE, NYSE MKT, and NASDAQ indices into deciles based on their market capitalization.
2. Using the average beta value for each decile, calculate the implied excess return over the risk-free rate using the CAPM.
3. Compare the calculated excess returns based on the CAPM to the actual excess returns for each decile, with the difference being the increment of return that is related to firm size, or "size adjustment."

New Regulatory Finance observed that "small market-cap stocks experience higher returns than large market-cap stocks with equivalent betas," and concluded that

[60] Originally compiled by Ibbotson Associates and published in their annual yearbook entitled, *Stocks, Bonds, Bills and Inflation*, these size premia are now developed by Kroll and presented in its *2022 Supplementary CRSP Decile Size Study Data*.

"the CAPM understates the risk of smaller utilities, and a cost of equity based purely on a CAPM beta will therefore produce too low an estimate."[61]

Q75. WHAT IS THE IMPLIED ROE FOR THE UTILITY GROUP USING THE CAPM APPROACH?

A75. As shown on Exhibit AMM-7, after adjusting for the impact of firm size , the CAPM approach implies an average ROE for the Utility Group of 11.2%.

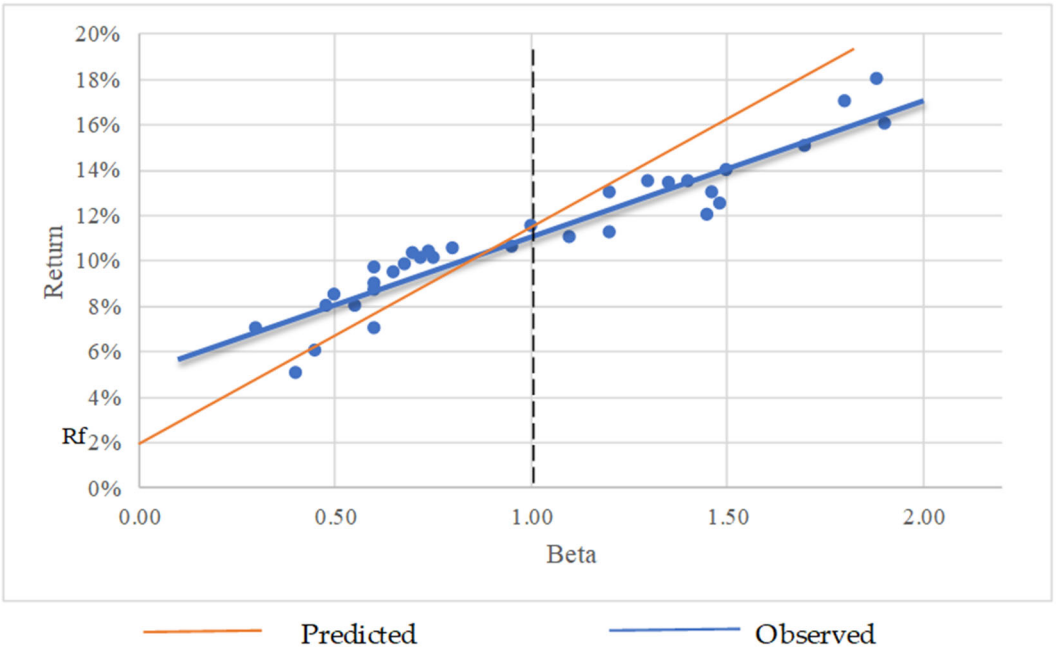
D. Empirical Capital Asset Pricing Model

Q76. HOW DOES THE ECAPM APPROACH DIFFER FROM TRADITIONAL APPLICATIONS OF THE CAPM?

A76. Empirical tests of the CAPM have shown that low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. In other words, the CAPM tends to overstate the actual sensitivity of the cost of capital to beta, with low-beta stocks tending to have higher returns and high-beta stocks tending to have lower risk returns than predicted by the CAPM. This is illustrated graphically in Figure 2:

[61] Roger A. Morin, *New Regulatory Finance* 187 (Pub. Utils. Reports, Inc., 2006).

FIGURE 2
CAPM – PREDICTED VS. OBSERVED RETURNS



Because the betas of utility stocks, including those in the Utility Group, are generally less than 1.0, this implies that cost of equity estimates based on the traditional CAPM would understate the cost of equity. This empirical finding is widely reported in the finance literature, as summarized in *New Regulatory Finance*:

> As discussed in the previous section, several finance scholars have developed refined and expanded versions of the standard CAPM by relaxing the constraints imposed on the CAPM, such as dividend yield, size, and skewness effects. These enhanced CAPMs typically produce a risk-return relationship that is flatter than the CAPM prediction in keeping with the actual observed risk-return relationship. The ECAPM makes use of these empirical relationships.[62]

As discussed in *New Regulatory Finance*,[63] based on a review of the empirical evidence, the expected return on a security is related to its risk by the ECAPM, which is represented by the following formula:

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[62] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports (2006) at 189.

[63] *Id.* at 190.

$$R_j = R_f + 0.25(R_m - R_f) + 0.75[\beta_j(R_m - R_f)]$$

Like the CAPM formula presented earlier, the ECAPM represents a stock's required return as a function of the risk-free rate (R_f), plus a risk premium. In the formula above, this risk premium is composed of two parts: (1) the market risk premium ($R_m - R_f$) weighted by a factor of 25%, and (2) a company-specific risk premium based on the stock's relative volatility [$\beta_j(R_m - R_f)$] weighted by 75%. This ECAPM equation, and its associated weighting factors, recognizes the observed relationship between standard CAPM estimates and the cost of capital documented in the financial research, and corrects for the understated returns that would otherwise be produced for low beta stocks.

Q77. HAVE OTHER REGULATORS RELIED ON THE ECAPM?

A77. Yes. Staff witnesses for the MDPSC have relied on this approach in prior testimony, noting that "the ECAPM model adjusts for the tendency of the CAPM model to underestimate returns for low Beta stocks," and concluding that, "the ECAPM gives a more realistic measure of the ROE than the CAPM model does."[64] The Staff of the Colorado Public Utilities Commission has recognized that, "The ECAPM is an empirical method that attempts to enhance the CAPM analysis by flattening the risk-return relationship,"[65] and relied on the same ECAPM equation presented above.[66]

The New York Department of Public Service also routinely incorporates the results of the ECAPM approach, which it refers to as the "zero-beta CAPM."[67] The Regulatory Commission of Alaska has also relied on the ECAPM approach, noting that:

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[64] *Direct Testimony and Exhibits of Julie McKenna*, Maryland PSC Case No. 9299 (Oct. 12, 2012) at 9.

[65] Proceeding No. 13AL-0067G, *Answer Testimony and Schedules of Scott England* (July 31, 2013) at 47.

[66] *Id.* at 48.

[67] *See, e,g.,* New York Department of Public Service, Cases 19-E-0065 19-G-0066, *Prepared Fully Redacted Testimony of Staff Finance Panel* (May 2019) at 94-95.

> Tesoro averaged the results it obtained from CAPM and ECAPM while at the same time providing empirical testimony that the ECAPM results are more accurate then [sic] traditional CAPM results. The reasonable investor would be aware of these empirical results. Therefore, we adjust Tesoro's recommendation to reflect only the ECAPM result.[68]

The Wyoming Office of Consumer Advocate, an independent division of the Wyoming Public Service Commission, has also relied on this ECAPM formula,[69] as has a witness for the Office of Arkansas Attorney General.[70] In a 2018 decision, the Montana Public Service Commission determined that "[t]he evidence in this proceeding has convinced the Commission that the [ECAPM] should be the primary method for estimating . . . the cost of equity."[71]

Q78. WHAT COST OF EQUITY IS INDICATED BY THE ECAPM?

A78. My application of the ECAPM is based on the same forward-looking market rate of return, risk-free rates, and beta values discussed earlier in connections with the CAPM. As shown on Exhibit AMM-8, applying the forward-looking ECAPM based on the average yield on 30-year Treasury bonds for the six month period ending March 2023 results in an average cost of equity estimate 11.4% after incorporating the size adjustment corresponding to the market capitalization of the individual utilities.

E. Utility Risk Premium

Q79. BRIEFLY DESCRIBE THE RISK PREMIUM METHOD.

A79. The risk premium method extends the risk-return tradeoff observed with bonds to estimate investors' required rate of return on common stocks. The cost of equity is estimated by first determining the additional return investors require to forgo the relative safety of bonds and to bear the greater risks associated with common stock, and by then

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[68] Regulatory Commission of Alaska, Order No. P-97-004(151) (Nov. 27, 2002) at 145.

[69] Docket No. 30011-97-GR-17, *Pre-Filed Direct Testimony of Anthony J. Ornelas* (May 1, 2018) at 52-53.

[70] Docket No. 17-071-U, *Direct Testimony of Marlon F. Griffing, PH.D.* (May 29, 2018) at 33-35.

[71] Montana Public Service Commission, Docket No. D2017.9.80, Order No. 7575c (Sep. 26, 2018) at P 114.

adding this equity risk premium to the current yield on bonds. Like the DCF model, the risk premium method is capital market oriented. However, unlike DCF models, which indirectly impute the cost of equity, risk premium methods directly estimate investors' required rate of return by adding an equity risk premium to observable bond yields.

Q80. IS THE RISK PREMIUM APPROACH A WIDELY ACCEPTED METHOD FOR ESTIMATING THE COST OF EQUITY?

A80. Yes. The risk premium approach is based on the fundamental risk-return principle that is central to finance, which holds that investors will require a premium in the form of a higher return to assume additional risk. This method is routinely referenced by the investment community and in academia and regulatory proceedings[72] and provides an important tool in estimating a just and reasonable ROE for NorthWestern.

Q81. HOW DO YOU IMPLEMENT THE RISK PREMIUM METHOD?

A81. Estimates of equity risk premiums for utilities are based on surveys of previously authorized ROEs. Authorized ROEs presumably reflect regulatory commissions' best estimates of the cost of equity, however determined, at the time they issued their final orders. Such ROEs should represent a balanced and impartial outcome that considers the need to maintain a utility's financial integrity and ability to attract capital. Moreover, allowed returns are an important consideration for investors and have the potential to influence other observable investment parameters, including credit ratings and borrowing costs. Thus, when considered in the context of a complete and rigorous analysis, this data provides a logical and frequently referenced basis for estimating equity risk premiums for regulated utilities.

[72] *See, e.g.,* James C. Bonbright, Albert L. Danielsen, David R. Kamerschen, *Principles of Public Utility Rates,* Pub. Util. Reports, Inc. (1988) at 322 (noting, "The risk premium approach is probably the second most popular approach to estimating the cost of equity.").

Q82. HOW DO YOU CALCULATE THE EQUITY RISK PREMIUMS BASED ON ALLOWED RETURNS?

A82. The ROEs authorized for electric utilities by regulatory commissions across the U.S. are compiled by S&P Global Market Intelligence and published in its *RRA Regulatory Focus* report. On page 2 of Exhibit AMM-9, the average yield on public utility bonds is subtracted from the average allowed ROE to calculate equity risk premiums for each year between 1974 and 2022.[73] As shown there, over this period these equity risk premiums average 3.89%, and the yields on public utility bonds average 7.83%.

Q83. IS THERE ANY CAPITAL MARKET RELATIONSHIP THAT MUST BE CONSIDERED WHEN IMPLEMENTING THE RISK PREMIUM METHOD?

A83. Yes. Equity risk premiums are not constant and tend to move inversely with interest rates. In other words, when interest rate levels are relatively high, equity risk premiums narrow, and when interest rates are relatively low, equity risk premiums widen. The implication of this inverse relationship is that the cost of equity does not move as much as, or in lockstep with interest rates. Accordingly, for a 1% increase or decrease in interest rates, the cost of equity may only rise or fall some fraction of 1%. Therefore, when implementing the risk premium method, adjustments may be required to incorporate this inverse relationship if current interest rate levels have diverged from the average interest rate level represented in the data set.

Current bond yields are lower than those prevailing over the risk premium study period. Given that equity risk premiums move inversely with interest rates, these lower bond yields also imply an increase in the equity risk premium. In other words, higher required equity risk premiums offset the impact of declining interest rates on the ROE.

[73] My analysis encompasses the entire period for which published data is available.

Q84. IS THIS INVERSE RELATIONSHIP CONFIRMED BY PUBLISHED FINANCIAL RESEARCH?

A84. Yes. There is considerable empirical evidence that when interest rates are relatively high, equity risk premiums narrow, and when interest rates are relatively low, equity risk premiums are greater. This inverse relationship between equity risk premiums and interest rates has been widely reported in the financial literature. As summarized by *New Regulatory Finance*:

> Published studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates – rising when rates fell and declining when rates rose.[74]

Other regulators have also recognized that, while the cost of equity trends in the same direction as interest rates, these variables do not move in lockstep.[75] This relationship is illustrated in the figure on page 3 of Exhibit AMM-9.

Q85. WHAT ROE IS IMPLIED BY THE RISK PREMIUM METHOD USING SURVEYS OF ALLOWED RETURNS?

A85. Based on the regression output between the interest rates and equity risk premiums displayed on page 3 of Exhibit AMM-9, the equity risk premium increases by approximately 43 basis points for each percentage point drop in the yield on average public utility bonds. As illustrated on page 1 of Exhibit AMM-9 with an average yield on public utility bonds for the six month period ending March 2023 of 5.49%, this implies a current equity risk premium of 4.89%. Adding this equity risk premium to the

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[74] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports (2006) at 128.

[75] *See, e.g.*, California Public Utilities Commission, Decision 08-05-035 (May 29, 2008); Entergy Mississippi Formula Rate Plan FRP-7, https://cdn.entergy-mississippi.com/userfiles/content/price/tariffs/eml_frp.pdf (last visited Apr. 25, 2023); *Martha Coakley et al. v. Bangor Hydro-Elec. Co. et al.*, 147 FERC ¶ 61,234 at P 147 (2014).

average yield on Baa utility bonds for the six month period ending March 2023 implies a current ROE of 10.64%.

F. Expected Earnings Approach

Q86. WHAT OTHER ANALYSES DO YOU CONDUCT TO ESTIMATE THE ROE?

A86. I also evaluate the ROE using the expected earnings method. Reference to rates of return available from alternative investments of comparable risk can provide an important benchmark in assessing the return necessary to assure confidence in the financial integrity of a firm and its ability to attract capital. This expected earnings approach is consistent with the economic underpinnings for a just and reasonable rate of return established by the U.S. Supreme Court in *Bluefield* and *Hope*. Moreover, it avoids the complexities and limitations of capital market methods and instead focuses on the returns earned on book equity, which are readily available to investors.

Q87. WHAT ECONOMIC PREMISE SERVES AS THE FOUNDATION FOR THE EXPECTED EARNINGS APPROACH?

A87. The simple, but powerful concept underlying the expected earnings approach is that investors compare each investment alternative with the next best opportunity. If the utility is unable to offer a return similar to that available from other opportunities of comparable risk, investors will become unwilling to supply the capital on reasonable terms. For existing investors, denying the utility an opportunity to earn what is available from other similar risk alternatives prevents them from earning their opportunity cost of capital. While I am not a lawyer and do not offer a legal opinion, from my position as a financial economist this outcome would violate the *Hope* and *Bluefield* standards and undermine the utility's access to capital on reasonable terms.

Q88. HOW IS THE EXPECTED EARNINGS APPROACH TYPICALLY IMPLEMENTED?

A88. The traditional comparable earnings test identifies a group of companies that are believed to be comparable in risk to the utility. The actual earnings of those companies on the book value of their investment are then compared to the allowed return of the utility. While the traditional comparable earnings test is implemented using historical data taken from the accounting records, it is also common to use projections of returns on book investment, such as those published by recognized investment advisory publications (*e.g.*, Value Line). Because these returns on book value equity are analogous to the allowed return on a utility's rate base, this measure of opportunity costs results in a direct, "apples to apples" comparison.

Moreover, regulators do not set the returns that investors earn in the capital markets, which are a function of dividend payments and fluctuations in common stock prices—both of which are outside their control. Regulators can only establish the allowed ROE, which is applied to the book value of a utility's investment in rate base, as determined from its accounting records. This is analogous to the expected earnings approach, which measures the return that investors expect the utility to earn on book value. As a result, the expected earnings approach provides a meaningful guide to ensure that the allowed ROE is similar to what other utilities of comparable risk will earn on invested capital. This expected earnings test does not require theoretical models to indirectly infer investors' perceptions from stock prices or other market data. As long as the proxy companies are similar in risk, their expected earned returns on invested capital provide a direct benchmark for investors' opportunity costs that is independent of fluctuating stock prices, market-to-book ratios, debates over DCF growth rates, or the limitations inherent in any theoretical model of investor behavior.

Q89. WHAT ROE IS INDICATED FOR NORTHWESTERN BASED ON THE EXPECTED EARNINGS APPROACH?

A89. For the firms in the Utility Group, the year-end returns on common equity projected by Value Line over its forecast horizon are shown on Exhibit AMM-10. As I explained earlier in my discussion of the br+sv growth rates used in applying the DCF model, Value Line's returns on common equity are calculated using year-end equity balances, which understates the average return earned over the year.[76] Accordingly, these year-end values were converted to average returns using the same adjustment factor discussed earlier and developed on Exhibit AMM-6. As shown on Exhibit AMM-10, Value Line's projections for the Utility Group suggest an average ROE of 11.1%.

G. Flotation Costs

Q90. WHAT OTHER CONSIDERATION IS RELEVANT IN SETTING THE RETURN ON EQUITY FOR A UTILITY?

A90. The common equity used to finance the investment in utility assets is provided from either the sale of stock in the capital markets or from retained earnings not paid out as dividends. When equity is raised through the sale of common stock, there are costs associated with "floating" the new equity securities. These flotation costs include services such as legal, accounting, and printing, as well as the fees and discounts paid to compensate brokers for selling the stock to the public. Also, some argue that the "market pressure" from the additional supply of common stock and other market factors may further reduce the amount of funds a utility nets when it issues common equity.

[76] For example, to compute the annual return on a passbook savings account with a beginning balance of $1,000 and an ending balance of $5,000, the interest income would be divided by the average balance of $3,000. Using the $5,000 balance at the end of the year would understate the actual return.

Q91. ARE EQUITY FLOTATION COSTS PARTICULARLY RELEVANT TO NORTHWESTERN?

A91. Yes. In order to finance a substantial capital expenditures program and maintain the Company's credit standing, NorthWestern will continue to rely on additional sales of common stock to raise new capital. As Fitch reported, "To enhance liquidity, the company raised $200 million of equity through common stock issuances in 2021 and plans to issue $299 million of equity in 2022 under its equity forward agreement."[77] Moody's noted that the Company's stable outlook was dependent in part on "management's commitment to issue around $300 million of incremental equity by February 2023."[78]

Q92. IS THERE AN ESTABLISHED MECHANISM FOR A UTILITY TO RECOGNIZE EQUITY ISSUANCE COSTS?

A92. No. While debt flotation costs are recorded on the books of the utility, amortized over the life of the issue, and thus increase the effective cost of debt capital, there is no similar accounting treatment to ensure that equity flotation costs are recorded and ultimately recognized. No rate of return is authorized on flotation costs necessarily incurred to obtain a portion of the equity capital used to finance plant. In other words, equity flotation costs are not included in a utility's rate base because neither that portion of the gross proceeds from the sale of common stock used to pay flotation costs is available to invest in plant and equipment, nor are flotation costs capitalized as an intangible asset. Unless some provision is made to recognize these issuance costs, a utility's revenue requirements will not fully reflect all of the costs incurred for the use of investors' funds. Because there is no accounting convention to accumulate the flotation costs associated with equity

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[77] Fitch Ratings, Inc., *NorthWestern Corporation*, Rating Report (May 19, 2022).

[78] Moody's Investors Service, *Moody's affirms NorthWestern Corp. ratings; outlook changed to stable from negative*, Rating Action (May 11, 2022).

issues, they must be accounted for indirectly, with an upward adjustment to the cost of equity being the most appropriate mechanism.

Q93. IS THERE ACADEMIC EVIDENCE THAT SUPPORTS A FLOTATION COST ADJUSTMENT?

A93. Yes. The financial literature and evidence in this case provides a sound theoretical and practical basis to include consideration of flotation costs for NorthWestern. An adjustment for flotation costs associated with past sales of common stock is appropriate, even when the utility is not contemplating any new sales of common stock. The need for a flotation cost adjustment to compensate for past common stock offerings has been recognized in the financial literature. In a *Public Utilities Fortnightly* article, for example, Brigham, Aberwald, and Gapenski demonstrated that even if no further stock issues are contemplated, a flotation cost adjustment in all future years is required to keep shareholders whole, and that the flotation cost adjustment must consider total equity, including retained earnings.[79] Similarly, *New Regulatory Finance* contains the following discussion:

> Another controversy is whether the flotation cost allowance should still be applied when the utility is not contemplating an imminent common stock issue. Some argue that flotation costs are real and should be recognized in calculating the fair rate of return on equity, but only at the time when the expenses are incurred. In other words, the flotation cost allowance should not continue indefinitely, but should be made in the year in which the sale of securities occurs, with no need for continuing compensation in future years. This argument implies that the company has already been compensated for these costs and/or the initial contributed capital was obtained freely, devoid of any flotation costs, which is an unlikely assumption, and certainly not applicable to most utilities. … The flotation cost adjustment cannot be strictly forward-

[79] E. F. Brigham, D. A. Aberwald, and L. C. Gapenski, *Common Equity Flotation Costs and Rate Making*, Pub. Util. Fortnightly (May 2, 1985).

looking unless all past flotation costs associated with past issues have been recovered.[80]

Q94. CAN YOU ILLUSTRATE WHY INVESTORS WILL NOT HAVE THE OPPORTUNITY TO EARN THEIR REQUIRED ROE UNLESS A FLOTATION COST ADJUSTMENT IS INCLUDED?

A94. Yes. Assume a utility sells $10 worth of common stock at the beginning of year 1. If the utility incurs flotation costs of $0.48 (5% of the net proceeds), then only $9.52 is available to invest in rate base. Assume that common shareholders' required rate of return is 10.5%, the expected dividend in year 1 is $0.50 (*i.e.*, a dividend yield of 5%), and that growth is expected to be 5.5% annually. As developed in Table 5 below, if the allowed rate of return on common equity is only equal to the utility's 10.5% "bare bones" cost of equity, common stockholders will not earn their required rate of return on their $10 investment, since growth will only be 5.25%, instead of 5.5%:

TABLE 5
NO FLOTATION COST ADJUSTMENT

Year	Common Stock	Retained Earnings	Total Equity	Market Price	M/B Ratio	Allowed ROE	EPS	DPS	Payout Ratio
1	$ 9.52	$ -	$ 9.52	$10.00	1.050	10.50%	$ 1.00	$ 0.50	50.0%
2	$ 9.52	$ 0.50	$ 10.02	$10.52	1.050	10.50%	$ 1.05	$ 0.53	50.0%
3	$ 9.52	$ 0.53	$ 10.55	$11.08	1.050	10.50%	$ 1.11	$ 0.55	50.0%
Growth			**5.25%**	**5.25%**			**5.25%**	**5.25%**	

The reason that investors never really earn 10.5% on their investment in the above example is that the $0.48 in flotation costs initially incurred to raise the common stock is not treated like debt issuance costs (*i.e.*, amortized into interest expense and therefore increasing the embedded cost of debt), nor is it included as an asset in rate base.

Including a flotation cost adjustment allows investors to be fully compensated for the impact of these costs. One commonly referenced method for calculating the

[80] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports, Inc. (2006) at 335.

flotation cost adjustment is to multiply the dividend yield by a flotation cost percentage. Thus, with a 5% dividend yield and a 5% flotation cost percentage, the flotation cost adjustment in the above example would be approximately 25 basis points. As shown in Table 6 below, by allowing a rate of return on common equity of 10.75% (a 10.5% cost of equity plus a 25 basis point flotation cost adjustment), investors earn their 10.5% required rate of return, since actual growth is now equal to 5.5%:

TABLE 6
INCLUDING FLOTATION COST ADJUSTMENT

Year	Common Stock	Retained Earnings	Total Equity	Market Price	M/B Ratio	Allowed ROE	EPS	DPS	Payout Ratio
1	$ 9.52	$ -	$ 9.52	$10.00	1.050	10.75%	$ 1.02	$ 0.50	48.9%
2	$ 9.52	$ 0.52	$ 10.04	$10.55	1.050	10.75%	$ 1.08	$ 0.53	48.9%
3	$ 9.52	$ 0.55	$ 10.60	$11.13	1.050	10.75%	$ 1.14	$ 0.56	48.9%
Growth			**5.50%**	**5.50%**			**5.50%**	**5.50%**	

The only way for investors to be fully compensated for issuance costs is to include an ongoing adjustment to account for past flotation costs when setting the return on common equity. This is the case regardless of whether the utility is expected to issue additional shares of common stock in the future.

Q95. WHAT IS THE MAGNITUDE OF THE ADJUSTMENT TO THE "BARE BONES" COST OF EQUITY TO ACCOUNT FOR ISSUANCE COSTS?

A95. The most common method used to account for flotation costs in regulatory proceedings is to apply an average flotation-cost percentage to a utility's dividend yield. In Exhibit AMM-11, I present a survey of recent open-market common stock issues for each company in Value Line's electric and gas utility industries. For all companies in the electric and gas industries, flotation costs averaged 2.7%. This data includes NorthWestern's 2021 public offering where it incurred issuance costs equal to approximately 3.3% of the gross proceeds. Applying the average 2.7% expense

percentage to the Utility Group dividend yield of 3.9% produces a flotation cost adjustment on the order of 10 basis points.

Q96. HAVE OTHER REGULATORS RECOGNIZED FLOTATION COSTS IN EVALUATING A FAIR AND REASONABLE ROE?

A96. Yes. For example, in Docket No. UE-991606 the Washington Utilities and Transportation Commission concluded that a flotation cost adjustment of 25 basis points should be included in the allowed return on equity.[81] In Case No. INT-G-16-02 the staff of the Idaho Public Utilities Commission noted that applying a flotation cost percentage to the dividend yield "is referred to as the 'conventional' approach. Its use in regulatory proceedings is widespread, and the formula is outlined in several corporate finance textbooks."[82]

More recently, the Wyoming Office of Consumer Advocate, an independent division of the Wyoming Public Service Commission, recommended a 10 basis point flotation cost adjustment.[83] Similarly, the South Dakota Public Utilities Commission has recognized the impact of issuance costs, concluding that, "recovery of reasonable flotation costs is appropriate."[84] Another example of a regulator that approves common stock issuance costs is the Mississippi Public Service Commission, which routinely includes a flotation cost adjustment in its Rate Stabilization Adjustment Rider formula.[85] The Public Utilities Regulatory Authority of Connecticut[86] the Minnesota Public

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[81] *Third Supplemental Order*, Washington Utilities and Transportation Commission Docket No. UE-991606, *et al.* (September 2000) at 95.

[82] Case No. INT-G-16-02, *Direct Testimony of Mark Rogers* (Dec. 16, 2016) at 18.

[83] Docket No. 30011-97-GR-17, *Pre-Filed Direct Testimony of Anthony J. Ornelas* (May 1, 2018) at 52-53.

[84] *Northern States Power Co*, EL11-019, Final Decision and Order at P 22 (2012).

[85] *See*, *e.g.*, Entergy Mississippi Formula Rate Plan FRP-7, https://cdn.entergy-mississippi.com/userfiles/content/price/tariffs/eml_frp.pdf (last visited Apr. 25, 2023)

[86] *See, e.g.*, Docket No. 14-05-06, Decision (Dec. 17, 2014) at 133-134.

Utilities Commission,[87] and the Virginia State Corporation Commission[88] have also recognized that flotation costs are a legitimate expense worthy of consideration in setting a fair and reasonable ROE.

VI. NON-UTILITY BENCHMARK

Q97. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A97. This section presents the results of my DCF analysis applied to a group of low-risk firms in the competitive sector, which I refer to as the "Non-Utility Group." This analysis was not relied on to arrive at my recommended ROE range of reasonableness; however, it is my opinion that this is a relevant consideration in evaluating just and reasonable ROEs for the Company's utility operations.

Q98. DO UTILITIES HAVE TO COMPETE WITH NON-REGULATED FIRMS FOR CAPITAL?

A98. Yes. The cost of capital is an opportunity cost based on the returns that investors could realize by putting their money in other alternatives. Clearly, the total capital invested in utility stocks is only the tip of the iceberg of total common stock investment, and there is a plethora of other enterprises available to investors beyond those in the utility industry. Utilities must compete for capital, not just against firms in their own industry, but with other investment opportunities of comparable risk. Indeed, modern portfolio theory is built on the assumption that rational investors will hold a diverse portfolio of stocks, not just companies in a single industry.

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[87] *See, e.g.,* Docket No. E001/GR-10-276, Findings of Fact, Conclusions, and Order at 9.

[88] Roanoke Gas Company, Case No. PUR-2018-00013, *Final Order*, (Jan. 24, 2020) at 6.

Q99. IS IT CONSISTENT WITH THE *BLUEFIELD* AND *HOPE* CASES TO CONSIDER INVESTORS' COST OF EQUITY FOR NON-UTILITY COMPANIES?

A99. Yes. The cost of equity capital in the competitive sector of the economy forms the very underpinning for utility ROEs because regulation purports to serve as a substitute for the actions of competitive markets. The United States Supreme Court has recognized that it is the degree of risk, not the nature of the business, which is relevant in evaluating an allowed ROE for a utility. The *Bluefield* case refers to "business undertakings attended with comparable risks and uncertainties." It does not restrict consideration to other utilities. Similarly, the *Hope* case states:

> By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.[89]

As in the *Bluefield* decision, there is nothing to restrict "other enterprises" solely to the utility industry.

Q100. DOES CONSIDERATION OF THE RESULTS FOR THE NON-UTILITY GROUP IMPROVE THE RELIABILITY OF DCF RESULTS?

A100. Yes. The estimates of growth from the DCF model depend on analysts' forecasts. It is possible for utility growth rates to be distorted by short-term trends in the industry, or by the industry falling into favor or disfavor by analysts. Such distortions could result in biased DCF estimates for utilities. Because the Non-Utility Group includes low risk companies from more than one industry, it helps to insulate against any possible distortion that may be present in results for a particular sector.

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[89] *Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 391 (1944).

Q101. WHAT CRITERIA DO YOU APPLY TO DEVELOP THE NON-UTILITY GROUP?

A101. My comparable risk proxy group was composed of those United States companies followed by Value Line that:

1) pay common dividends;

2) have a Safety Rank of "1";

3) have a Financial Strength Rating of "A" or greater;

4) have a beta value of 0.95 or less; and

5) have investment grade credit ratings from Moody's and S&P.

Q102. HOW DO THE OVERALL RISKS OF YOUR NON-UTILITY GROUP COMPARE TO THE PROXY GROUP OF ELECTRIC UTILITIES?

A102. Table 7 compares the Non-Utility Group to the Electric Group and NorthWestern across the five key indices of investment risk discussed earlier.

TABLE 7
COMPARISON OF RISK INDICATORS

			Value Line		
	S&P	Moody's	Safety Rank	Financial Strength	Beta
Non-Utility Group	A-	A2	1	A+	0.80
Utility Group	BBB+	Baa2	2	A	0.90
NorthWestern Corp.	BBB	Baa2	2	B++	0.90

As shown above, considered together the risk indicators for the Non-Utility Group generally suggest less risk than for the Utility Group and NorthWestern.

The companies that make up the Non-Utility Group, which are shown in Exhibit AMM-12, represent the pinnacle of corporate America. These firms, which include household names such as Coca-Cola, McDonald's, Procter & Gamble, and Walmart, have long corporate histories, well-established track records, and conservative risk

profiles. Many of these companies pay dividends on a par with utilities, with the average dividend yield for the group exceeding 2%. Moreover, because of their significance and name recognition, these companies receive intense scrutiny by the investment community, which increases confidence that published growth estimates are representative of the consensus expectations reflected in common stock prices.

Q103. WHAT ARE THE RESULTS OF YOUR DCF ANALYSIS FOR THE NON-UTILITY GROUP?

A103. I applied the DCF model to the Non-Utility Group using the same analysts' EPS growth projections described earlier for the Utility Group. The results of my DCF analysis for the Non-Utility Group are presented in Exhibit AMM-12. As summarized in Table 8, below, after eliminating illogical values, application of the constant growth DCF model resulted in the following cost of equity estimates:

TABLE 8
DCF RESULTS – NON-UTILITY GROUP

Growth Rate	Average	Midpoint
Value Line	10.9%	11.9%
IBES	10.4%	10.7%
Zacks	10.9%	12.1%

As discussed earlier, reference to the Non-Utility Group is consistent with established regulatory principles. Required returns for utilities should be in line with those of non-utility firms of comparable risk operating under the constraints of free competition. Because the actual cost of equity is unobservable, and DCF results inherently incorporate a degree of error, cost of equity estimates for the Non-Utility Group provide an important benchmark in evaluating a just and reasonable ROE for NorthWestern.

Q104. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A104. Yes, it does.

EXHIBIT AMM-1

QUALIFICATIONS OF ADRIEN M. MCKENZIE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Adrien M. McKenzie. My business address is 3907 Red River Street, Austin, Texas 78751.

Q. PLEASE STATE YOUR OCCUPATION.

A. I am a principal in FINCAP, Inc., a firm engaged primarily in financial, economic, and policy consulting in the field of public utility regulation.

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I received B.A. and M.B.A. degrees with a major in finance from The University of Texas at Austin and hold the Chartered Financial Analyst (CFA®) designation. Since joining FINCAP in 1984, I have participated in consulting assignments involving a broad range of economic and financial issues, including cost of capital, cost of service, rate design, economic damages, and business valuation. I have extensive experience in economic and financial analysis for regulated industries, and in preparing and supporting expert witness testimony before courts, regulatory agencies, and legislative committees throughout the U.S. and Canada. I have personally sponsored direct and rebuttal testimony in over 180 proceedings filed with the Federal Energy Regulatory Commission ("FERC") and regulatory agencies in Alaska, Arkansas, Colorado, District of Columbia, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Montana, Nebraska, New Mexico, Ohio, Oklahoma, Oregon, South Dakota, Texas, Virginia, Washington, West Virginia, and Wyoming. My testimony addressed the establishment of risk-comparable proxy groups, the application of alternative quantitative methods, and the consideration

of regulatory standards and policy objectives in establishing a fair rate of return on equity for regulated electric, gas, and water utility operations. In connection with these assignments, my responsibilities have included critically evaluating the positions of other parties and preparation of rebuttal testimony, representing clients in settlement negotiations and hearings, and assisting in the preparation of legal briefs.

FINCAP was formed in 1979 as an economic and financial consulting firm serving clients in both the regulated and competitive sectors. FINCAP conducts assignments ranging from broad qualitative analyses and policy consulting to technical analyses and research. The firm's experience is in the areas of public utilities, valuation of closely-held businesses, and economic evaluations (e.g., damage and cost/benefit analyses). Prior to joining FINCAP, I was employed by an oil and gas firm and was responsible for operations and accounting. I am a member of the CFA Institute. A resume containing the details of my qualifications and experience is attached below.

ADRIEN M. McKENZIE

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Summary of Qualifications

Adrien McKenzie has an MBA in finance from the University of Texas at Austin and holds the Chartered Financial Analyst (CFA®) designation. He has over 30 years of experience in economic and financial analysis for regulated industries, and in preparing and supporting expert witness testimony before courts, regulatory agencies, and legislative committees throughout the U.S. and Canada. Assignments have included a broad range of economic and financial issues, including cost of capital, cost of service, rate design, economic damages, and business valuation.

Employment

President FINCAP, Inc. (June 1984 to June 1987) (April 1988 to present)	Economic consulting firm specializing in regulated industries and valuation of closely-held businesses. Assignments have involved electric, gas, telecommunication, and water/sewer utilities, with clients including utilities, consumer groups, municipalities, regulatory agencies, and cogenerators. Areas of participation have included rate of return, revenue requirements, rate design, tariff analysis, avoided cost, forecasting, and negotiations. Develop cost of capital analyses using alternative market models for electric, gas, and telephone utilities. Prepare pre-filed direct and rebuttal testimony, participate in settlement negotiations, respond to interrogatories, evaluate opposition testimony, and assist in the areas of cross-examination and the preparations of legal briefs. Other assignments have involved preparation of technical reports, valuations, estimation of damages, industry studies, and various economic analyses in support of litigation.
Manager, McKenzie Energy Company (Jan. 1981 to May. 1984)	Responsible for operations and accounting for firm engaged in the management of working interests in oil and gas properties.

Education

M.B.A., Finance, University of Texas at Austin (Sep. 1982 to May. 1984)	Program included coursework in corporate finance, accounting, financial modeling, and statistics. Received Dean's Award for Academic Excellence and Good Neighbor Scholarship. Professional Report: *The Impact of Construction Expenditures on Investor-Owned Electric Utilities*
B.B.A., Finance, University of Texas at Austin (Jan. 1981 to May 1982)	Electives included capital market theory, portfolio management, and international economics and finance. Elected to Beta Gamma Sigma business honor society. Dean's List 1981-1982.
Simon Fraser University, Vancouver, Canada and University of Hawaii at Manoa, Honolulu, Hawaii (Jan. 1979 to Dec 1980)	Coursework in accounting, finance, economics, and liberal arts.

Professional Associations

Received Chartered Financial Analyst (CFA®) designation in 1990.

Member – CFA Institute.

Bibliography

"A Profile of State Regulatory Commissions," A Special Report by the Electricity Consumers Resource Council (ELCON), Summer 1991.

"The Impact of Regulatory Climate on Utility Capital Costs: An Alternative Test," with Bruce H. Fairchild, *Public Utilities Fortnightly* (May 25, 1989).

Presentations

"ROE at FERC: Issues and Methods," *Expert Briefing on Parallels in ROE Issues between AER, ERA, and FERC*, Jones Day (Sydney, Melbourne, and Perth, Australia) (April 15, 2014).

Cost of Capital Working Group eforum, Edison Electric Institute (April 24, 2012).

"Cost-of-Service Studies and Rate Design," General Management of Electric Utilities (A Training Program for Electric Utility Managers from Developing Countries), Austin, Texas (October 1989 and November 1990 and 1991).

Representative Assignments

Mr. McKenzie has prepared and sponsored prefiled testimony submitted in over 150 regulatory proceedings. In addition to filings before regulatory agencies in Alaska, Arkansas, Colorado, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Montana, Nebraska, New Mexico, Ohio, Oklahoma, Oregon, South Dakota, Texas, Virginia, Washington, West Virginia, and Wyoming, Mr. McKenzie has considerable expertise in preparing expert analyses and testimony before the Federal Energy Regulatory Commission ("FERC") on the issue of rate of return on equity ("ROE"), and has broad experience in applying and evaluating the results of quantitative methods to estimate a fair ROE. Other representative assignments have included developing cost of service and cost allocation studies, the application of econometric models to analyze the impact of anti-competitive behavior and estimate lost profits; development of explanatory models for nuclear plant capital costs in connection with prudency reviews; and the analysis of avoided cost pricing for cogenerated power.

SUMMARY OF RESULTS

Method	Average
DCF	
Value Line	9.4%
IBES	10.4%
Zacks	10.0%
Internal br + sv	9.1%
CAPM	11.2%
ECAPM	11.4%
Utility Risk Premium	10.6%
Expected Earnings	11.1%

ROE Recommendation			
Cost of Equity	10.1%	--	11.1%
Flotation Cost Adjustment			
Electric Group Dividend Yield		3.90%	
Flotation Cost Expense Factor		2.65%	
Flotation Cost Adjustment		0.10%	
Recommended ROE Range			
Range	**10.2%**	**--**	**11.2%**
Midpoint		**10.7%**	

CAPITAL STRUCTURE **Exhibit AMM-3**

UTILITY GROUP

		At Year-end 2022 (a)			Value Line Projected (b)		
	Company	**Debt**	**Preferred**	**Common Equity**	**Debt**	**Preferred**	**Common Equity**
1	ALLETE	36.5%	0.0%	63.5%	40.5%	0.0%	59.5%
2	Ameren Corp.	56.9%	0.0%	43.1%	51.0%	0.5%	48.5%
3	Avista Corp.	49.6%	0.0%	50.4%	48.5%	0.0%	51.5%
4	Black Hills Corp.	57.2%	0.0%	42.8%	50.0%	0.0%	50.0%
5	CenterPoint Energy	61.9%	3.0%	35.1%	55.0%	2.5%	42.5%
6	CMS Energy Corp.	65.2%	1.0%	33.8%	61.5%	1.0%	37.5%
7	Dominion Energy	60.2%	2.5%	37.2%	57.0%	2.0%	41.0%
8	DTE Energy Co.	63.4%	0.0%	36.6%	61.0%	0.0%	39.0%
9	Duke Energy Corp.	57.9%	1.6%	40.5%	61.0%	1.5%	37.5%
10	Edison International	62.8%	4.2%	33.0%	60.5%	7.5%	32.0%
11	Emera Inc.	58.8%	5.1%	36.1%	57.0%	0.0%	43.0%
12	Entergy Corp.	66.1%	0.6%	33.3%	67.0%	0.0%	33.0%
13	Exelon Corp.	60.0%	0.0%	40.0%	64.5%	0.0%	35.5%
14	Hawaiian Elec.	57.9%	0.6%	41.4%	50.0%	0.5%	49.5%
15	IDACORP, Inc.	43.8%	0.0%	56.2%	50.0%	0.0%	50.0%
16	NorthWestern Corp.	48.3%	0.0%	51.7%	49.0%	0.0%	51.0%
17	OGE Energy Corp.	50.8%	0.0%	49.2%	50.0%	0.0%	50.0%
18	Otter Tail Corp.	40.4%	0.0%	59.6%	42.5%	0.0%	57.5%
19	Pinnacle West Capital	55.8%	0.0%	44.2%	54.5%	0.0%	45.5%
20	Pub Sv Enterprise Grp.	56.8%	0.0%	43.2%	54.5%	0.0%	45.5%
21	Sempra Energy	46.6%	1.7%	51.7%	46.0%	1.5%	52.5%
22	Southern Company	61.4%	0.0%	38.6%	63.0%	0.0%	37.0%
	Minimum	**36.5%**	**0.0%**	**33.0%**	**40.5%**	**0.0%**	**32.0%**
	Maximum	**66.1%**	**5.1%**	**63.5%**	**67.0%**	**7.5%**	**59.5%**
	Average	**55.4%**	**0.9%**	**43.7%**	**54.3%**	**0.8%**	**45.0%**

(a) 2022 SEC Form 10-K reports.

(b) The Value Line Investment Survey (Jan. 20, Feb. 10 and Mar. 10, 2023).

ELECTRIC GROUP OPERATING COS.

		At Year-End 2022 (a)		
	Operating Company	**Debt**	**Preferred**	**Common Equity**
1	**ALLETE**			
	ALLETE, Inc. (Minnesota Power)	40.3%	0.0%	59.7%
2	**AMEREN CORP.**			
	Ameren Illinois Co.	43.9%	0.4%	55.6%
	Union Electric Co.	48.6%	0.6%	50.7%
3	**AVISTA CORP.**			
	Avista Corp.	49.3%	0.0%	50.7%
	Alaska Electric Light & Power	39.1%	0.0%	60.9%
4	**BLACK HILLS CORP.**			
	Black Hills Power	49.9%	0.0%	50.1%
	Cheyenne Light Fuel & Power	57.2%	0.0%	42.8%
	Black Hills/Colorado Electric Utility Co	52.1%	0.0%	47.9%
5	**CENTERPOINT ENERGY**			
	Centerpoint Energy Houston Electric	56.0%	0.0%	44.0%
6	**CMS ENERGY**			
	Consumers Energy Co.	50.2%	0.2%	49.6%
7	**DOMINION ENERGY**			
	Virginia Electric & Power	48.4%	0.0%	51.6%
	Dominion Energy South Carolina	45.2%	0.0%	54.8%
8	**DTE ENERGY CO.**			
	DTE Electric Co.	50.0%	0.0%	50.0%
9	**DUKE ENERGY**			
	Duke Energy Carolinas	48.0%	0.0%	52.0%
	Duke Energy Florida	51.8%	0.0%	48.2%
	Duke Energy Indiana	47.8%	0.0%	52.2%
	Duke Energy Ohio	40.5%	0.0%	59.5%
	Duke Energy Progress	51.8%	0.0%	48.2%
	Duke Energy Kentucky	47.0%	0.0%	53.0%
10	**EDISON INTERNATIONAL**			
	Southern California Edison Co.	55.8%	4.1%	40.1%
11	**EMERA INC.**			
	Tampa Electric Co.	41.9%	0.0%	58.1%
12	**ENTERGY CORP.**			
	Entergy Arkansas Inc.	52.4%	0.0%	47.6%
	Entergy Louisiana LLC	53.0%	0.0%	47.0%
	Entergy Mississippi Inc.	53.3%	0.0%	46.7%
	Entergy New Orleans Inc.	52.4%	0.0%	47.6%
	Entergy Texas Inc.	51.9%	0.7%	47.4%

ELECTRIC GROUP OPERATING COS.

	Operating Company	At Year-End 2022 (a) Debt	Preferred	Common Equity
13	**EXELON CORP.**			
	Delmarva Power and Light	49.8%	0.0%	50.2%
	Baltimore Gas & Electric Co.	46.0%	0.0%	54.0%
	Commonweath Edison Co.	44.5%	0.0%	55.5%
	PECO Energy Co.	46.3%	0.0%	53.7%
	Potomac Electric Power Co.	49.8%	0.0%	50.2%
	Atlantic City Electric Co.	50.1%	0.0%	49.9%
14	**HAWAIIAN ELEC.**			
	Hawaiian Electric Co.	41.5%	0.8%	57.7%
15	**IDACORP**			
	Idaho Power Co.	45.5%	0.0%	54.5%
16	**NORTHWESTERN CORP.**			
	NorthWestern Corporation	49.7%	0.0%	50.3%
17	**OGE ENERGY CORP.**			
	Oklahoma G&E	44.2%	0.0%	55.8%
18	**OTTER TAIL CORP.**			
	Otter Tail Power Co.	45.1%	0.0%	54.9%
19	**PINNACLE WEST CAPITAL**			
	Arizona Public Service Co.	49.1%	0.0%	50.9%
20	**PUB SV ENTERPRISE GRP**			
	Pub Service Electric & Gas Co.	44.7%	0.0%	55.3%
21	**SEMPRA ENERGY**			
	San Diego Gas & Electric	49.8%	0.0%	50.2%
	Oncor Electric Delivery	43.3%	0.0%	56.7%
22	**SOUTHERN CO.**			
	Alabama Power Co.	47.6%	0.0%	52.4%
	Georgia Power Co.	44.2%	0.0%	55.8%
	Mississippi Power Co.	44.4%	0.0%	55.6%
	Minimum	**39.1%**	**0.0%**	**40.1%**
	Maximum	**57.2%**	**4.1%**	**60.9%**
	Average	**48.0%**	**0.2%**	**51.8%**

(a) Data from 2022 SEC Form 10-K and FERC Form 1 reports. Debt includes current maturities.

UTILITY GROUP

		Type of Adjustment Clause (a)									(b)	(c)
			Conserv.			New Capital					Future	Formula
			Program	Decoupling		Trad.	Renewables/	Delivery	Environ.	Trans.	Test	Rates /
	Company	Fuel/PPA	Expense	Full	Partial	Generation	Non-Trad.	Infra.	Compliance	Costs	Year	MRP
1	ALLETE	✓	✓	--	--	--	✓	--	--	✓	C	✓
2	Ameren Corp.	✓	✓	--	✓	--	✓	✓	✓	✓	O,P	✓
3	Avista Corp.	✓	✓	✓	--	--	--	--	--	--	P	✓
4	Black Hills Corp.	✓	✓	--	✓	✓	✓	--	✓	✓	O	✓
5	CenterPoint Energy	✓	✓	--	✓	--	--	✓	✓	✓	--	✓
6	CMS Energy Corp.	✓	✓	--	--	--	✓	--	--	✓	C	--
7	Dominion Energy	✓	✓	--	--	✓	✓	✓	✓	✓	--	✓
8	DTE Energy Co.	✓	✓	--	--	--	✓	--	--	✓	C	--
9	Duke Energy Corp.	✓	✓	--	✓	✓	✓	✓	✓	✓	C,O,P	✓
10	Edison International	✓	--	✓	--	--	--	--	--	--	C	✓
11	Emera Inc.	✓	✓	--	--	✓	✓	--	✓	--	C	✓
12	Entergy Corp.	✓	✓	--	✓	✓	✓	✓	✓	✓	O,P	✓
13	Exelon Corp.	D	✓	✓	✓	--	✓	✓	✓	✓	O,P	✓
14	Hawaiian Elec.	✓	✓	--	--	--	✓	--	--	--	C	✓
15	IDACORP, Inc.	✓	✓	✓	--	--	--	--	--	--	C,P	--
16	NorthWestern Corp.	✓	✓	--	--	--	--	--	--	--	--	--
17	OGE Energy Corp.	✓	✓	--	✓	✓	✓	✓	✓	✓	P	✓
18	Otter Tail Corp.	✓	✓	--	--	✓	✓	✓	✓	✓	C,O	✓
19	Pinnacle West Capital	✓	✓	--	✓	--	✓	--	✓	✓	--	✓
20	Pub Sv Enterprise Grp.	D	✓	--	✓	--	--	✓	✓	--	P	--
21	Sempra Energy	✓	✓	✓	--	--	--	✓	--	✓	C	✓
22	Southern Company	✓	--	--	✓	✓	✓	--	✓	--	C,O	✓

Notes

D - Delivery-only utility.

C - Fully-forecasted test years commonly used in the state listed for this operating company.

O - Fully-forecasted test years occasionally used in the state listed for this operating company.

P - Partially-forecasted test years commonly or occasionally used in the state listed for this operating company.

Source: Exhibit AMM-4, pages 2-5, contain operating company data that are aggregated into the parent company data on this page.

ELECTRIC GROUP OPERATING COS.

			Type of Adjustment Clause (a)																(b)	(c)
					Conserv.					New Capital									Future	Formula
					Program		Decoupling			Trad.		Renewables/		Delivery		Environ.		Trans.	Test	Rates /
	Company	State	Fuel/PPA		Expense		Full		Partial	Generation		Non-Trad.		Infra.		Compliance		Costs	Year	MRP
1	**ALLETE**																			
	Minnesota Power Enterprises Inc.	MN	✓		✓		--		--	--		✓		--		--		✓	C	✓
2	**AMEREN CORP.**																			
	Ameren Illinois Co.	IL	D	*	✓		--		✓	* --		✓		--		✓	*	✓	O	✓
	Union Electric Co.	MO	✓		✓	*	--		✓	* --		✓	*	✓	*	--	*	✓	* P	--
3	**AVISTA CORP.**																			
	Alaska Electric Light & Power Co.	AK	✓		--		--		--	--		--		--		--		--	--	--
	Avista Corp.	ID	✓	*	✓		✓	*	--	--		--		--		--		--	P	--
	Avista Corp.	WA	✓	*	✓		✓		--	* --		--		--		--		--	--	✓
4	**BLACK HILLS CORP.**																			
	Black Hills Colorado Electric Inc.	CO	✓		✓		--		--	✓	*	✓		--		--		✓	--	✓
	Black Hills Power Inc.	SD	✓		--		--		--	--		--		--		✓	*	✓	* --	--
	Cheyenne Light Fuel & Power Co.	WY	✓		✓		--		✓	* --		--		--		--		--	O	--
5	**CENTERPOINT ENERGY**																			
	Southern Indiana Gas & Electric Co.	IN	✓		✓		--		✓	* --		--		✓	*	✓	*	✓	--	✓
	CenterPoint Energy Houston Electric LLC	TX	--	*	✓		--		--	--		--		✓		--		✓	--	✓
6	**CMS ENERGY**																			
	Consumers Energy Co.	MI	✓		✓		--	*	--	--		✓		--		--		✓	* C	--
7	**DOMINION ENERGY**																			
	Virginia Electric & Power Co.	NC	✓		✓	*	--		--	* --		✓	*	--		✓		--	--	--
	Dominion Energy South Carolina	SC	✓		✓		--		--	✓	*	--		--		✓		--	--	✓
	Virginia Electric & Power Co.	VA	✓		✓		--		--	✓		✓		✓		✓		✓	--	✓
8	**DTE ENERGY CO.**																			
	DTE Electric Co.	MI	✓		✓		--	*	--	--		✓		--		--		✓	* C	--
9	**DUKE ENERGY**																			
	Duke Energy Florida LLC	FL	✓		✓		--		--	✓	*	✓	*	--	*	✓		--	C	✓
	Duke Energy Indiana LLC	IN	✓		✓		--		✓	* --		✓		✓	*	✓	*	✓	--	✓
	Duke Energy Kentucky Inc.	KY	✓		✓		--		✓	* --		--		--		✓		--	O	--
	Duke Energy Carolinas LLC	NC	✓		✓	*	--		--	* --		✓	*	--		✓		--	--	--
	Duke Energy Progress LLC	NC	✓		✓	*	--		--	* --		✓	*	--		✓		--	--	--
	Duke Energy Ohio Inc.	OH	D	*	✓	*	--		✓	* --		✓		✓	*	--		✓	P	✓
	Duke Energy Progress LLC	SC	✓		✓		--		--	--	*	--		--		✓		--	--	✓
	Duke Energy Carolinas LLC	SC	✓		✓		--		--	--	*	--		--		✓		--	--	✓

ELECTRIC GROUP OPERATING COS.

			Type of Adjustment Clause (a)																(b)	(c)
					Conserv.					New Capital									Future	Formula
					Program	Decoupling			Trad.	Renewables/		Delivery		Environ.		Trans.			Test	Rates /
	Company	State	Fuel/PPA		Expense	Full	Partial		Generation	Non-Trad.		Infra.		Compliance		Costs			Year	MRP
10	**EDISON INTERNATIONAL**																			
	Southern California Edison Co.	CA	✓		--	✓	--		--		--		--		--		--		C	✓
11	**EMERA INC.**																			
	Tampa Electric Co.	FL	✓		✓	--	--		✓	*	✓	*	--	*	✓		--		C	✓
12	**ENTERGY CORP.**																			
	Entergy Arkansas LLC	AR	✓		✓	--	✓	*	✓	*	✓	*	✓	*	--		✓		P	✓
	Entergy New Orleans LLC	LA	✓		✓	--	--		--		✓		--		✓	*	✓	*	O	✓
	Entergy Louisiana LLC	LA	✓		✓	* --	✓	*	--		--		--		✓		--		O	✓
	Entergy Mississippi LLC	MS	✓		--	--	✓	*	--		--		--		--		✓		O	✓
	Entergy Texas Inc.	TX	✓	*	✓	--	--		✓	*	--		✓		--		✓		--	✓
13	**EXELON CORP.**																			
	Delmarva Power & Light Co.	DE	D	*	✓	--	--		--		--		✓	*	--		✓		P	--
	Potomac Electric Power Co.	DC	D	*	--	--	✓	*	--		✓	*	✓	*	--		--		P	--
	Commonwealth Edison Co.	IL	D	*	✓	--	--		--		✓		✓	*	✓	*	✓		O	✓
	Baltimore Gas & Electric Co.	MD	D	*	✓	✓	--		--		--		--		--		--		P	--
	Delmarva Power & Light Co.	MD	D	*	✓	✓	--		--		--		--		--		--		P	--
	Potomac Electric Power Co.	MD	D	*	✓	✓	--		--		--		✓	*	--		--		P	--
	Atlantic City Electric Co.	NJ	D	*	✓	* --	✓	*	--		--		✓	*	✓	*	--		P	--
	PECO Energy Co.	PA	D	*	✓	--	--		--		--		✓	*	--		✓		O	--
14	**HAWAIIAN ELEC.**																			
	Hawaiian Electric Co.	HI	✓		✓	--	--		--		✓	*	--		--		--		C	✓
	Hawaii Electric Light Co.	HI	✓		✓	--	--		--		--		--		--		--		C	✓
	Maui Electric Co.	HI	✓		✓	--	--		--		✓	*	--		--		--		C	✓
15	**IDACORP, INC.**																			
	Idaho Power Co.	ID	✓	*	✓	✓	* --		--		--		--		--		--		P	--
	Idaho Power Co.	OR	✓		✓	--	--		--		--		--		--		--		C	--
16	**NORTHWESTERN CORP.**																			
	NorthWestern Corp.	MT	✓	*	✓	--	--		--		--		--		--		--		--	--
	NorthWestern Corp.	SD	✓		✓	--	--		--		--		--		--		--		--	--
17	**OGE ENERGY CORP.**																			
	Oklahoma Gas & Electric Co.	AR	✓		✓	--	✓	*	✓		✓		✓		✓		✓		P	--
	Oklahoma Gas & Electric Co.	OK	✓		✓	* --	✓	*	--		--		✓	*	✓	*	✓	*	--	✓

ELECTRIC GROUP OPERATING COS.

			Type of Adjustment Clause (a)																		(b)	(c)
					Conserv.					New Capital											Future	Formula
					Program		Decoupling			Trad.		Renewables/		Delivery		Environ.		Trans.			Test	Rates /
	Company	State	Fuel/PPA		Expense		Full	Partial		Generation		Non-Trad.		Infra.		Compliance		Costs			Year	MRP
18	**OTTER TAIL CORP.**																					
	Otter Tail Power Co.	MN	✓		✓		--	--		--		✓		--		✓		✓			C	--
	Otter Tail Power Co.	ND	✓		--		--	--		✓	*	✓	*	✓	*	✓	*	✓	*		O	✓
	Otter Tail Power Corp.	SD	✓		✓		--	--		✓	*	--		✓		✓		--			--	--
19	**PINNACLE WEST CAPITAL**																					
	Arizona Public Service Co.	AZ	✓		✓		--	✓	*	--		✓		--		✓		✓			--	✓
20	**PUB SV ENTERPRISE GRP**																					
	Public Service Electric & Gas Co.	NJ	D	*	✓	*	--	✓	*	--		--		✓	*	✓	*	--			P	--
21	**SEMPRA ENERGY**																					
	San Diego Gas & Electric Co.	CA	✓		--		✓	--		--		--		--		--		--			C	✓
	Oncor Electric Delivery Co.	TX	D	*	✓		--	--		--		--		✓		--		✓			--	✓
22	**SOUTHERN CO.**																					
	Alabama Power Co.	AL	✓	*	--		--	--		✓	*	✓		--		✓	*	--			C	✓
	Georgia Power Co.	GA	✓		--		--	--		✓	*	--		--		✓	*	--			C	✓
	Mississippi Power Co.	MS	✓		--		--	✓	*	--		--		--		✓	*	--			O	✓

(a) S&P Global Market Intelligence, *Adjustment clauses: A state by state overview* , Regulatory Focus Topical Special Report (Jul. 18, 2022).

(b) Edison Electric Institute, *Alternative Regulation for Emerging Utility Challenges: 2015 Update* (Nov. 11, 2015).

(c) Formula rates and Multiyear Rate plans approved in the state listed for this operating company. *See* , U.S. Department of Energy, *State Performance-Based Regulation Using Multiyear Rate Plans for U.S. Electric Utilities* ,GRID Modernization Laboratory Consortium (Jul. 2017); The Brattle Group, *Exploring the Use of Alternative Regulatory Mechanisms to Establish New Base Rates* , Joint Utilities of Maryland

Notes

D - Delivery-only utility.

C - Fully-forecasted test years commonly used in the state listed for this operating company.

O - Fully-forecasted test years occasionally used in the state listed for this operating company.

P - Partially-forecasted test years commonly or occasionally used in the state listed for this operating company.

* For additional context around the specific recovery mechanisms available to the particular operating companies in each state, see the source document.

DIVIDEND YIELD

	Company	(a) Price	(b) Dividends	Yield
1	ALLETE	$ 61.92	$ 2.71	4.4%
2	Ameren Corp.	$ 84.03	$ 2.52	3.0%
3	Avista Corp.	$ 41.11	$ 1.84	4.5%
4	Black Hills Corp.	$ 61.80	$ 2.50	4.0%
5	CenterPoint Energy	$ 28.46	$ 0.76	2.7%
6	CMS Energy Corp.	$ 60.10	$ 1.95	3.2%
7	Dominion Energy	$ 55.51	$ 2.75	5.0%
8	DTE Energy Co.	$ 108.71	$ 3.81	3.5%
9	Duke Energy Corp.	$ 95.49	$ 4.02	4.2%
10	Edison International	$ 67.47	$ 2.95	4.4%
11	Emera Inc.	$ 54.30	$ 2.76	5.1%
12	Entergy Corp.	$ 104.69	$ 4.28	4.1%
13	Exelon Corp.	$ 41.21	$ 1.44	3.5%
14	Hawaiian Elec.	$ 39.02	$ 1.44	3.7%
15	IDACORP, Inc.	$ 104.16	$ 3.16	3.0%
16	NorthWestern Corp.	$ 56.81	$ 2.56	4.5%
17	OGE Energy Corp.	$ 36.13	$ 1.70	4.7%
18	Otter Tail Corp.	$ 69.99	$ 1.76	2.5%
19	Pinnacle West Capital	$ 75.82	$ 3.48	4.6%
20	Pub Sv Enterprise Grp.	$ 59.49	$ 2.28	3.8%
21	Sempra Energy	$ 149.16	$ 4.80	3.2%
22	Southern Company	$ 65.96	$ 2.72	4.1%
	Average			**3.9%**

(a) Average of closing prices for 30 trading days ended Mar. 29, 2023.
(b) The Value Line Investment Survey, Summary & Index (Mar. 31, 2023).

GROWTH RATES

		(a)	(b)	(c)	(d)
		Earnings Growth			**br+sv**
	Company	**V Line**	**IBES**	**Zacks**	**Growth**
1	ALLETE	6.0%	8.7%	7.3%	4.8%
2	Ameren Corp.	6.5%	6.7%	6.9%	5.8%
3	Avista Corp.	3.5%	5.2%	5.2%	4.3%
4	Black Hills Corp.	6.0%	5.4%	2.2%	6.2%
5	CenterPoint Energy	6.5%	-1.1%	7.0%	4.9%
6	CMS Energy Corp.	6.5%	8.0%	8.0%	6.5%
7	Dominion Energy	4.0%	6.1%	14.9%	5.9%
8	DTE Energy Co.	4.5%	7.4%	6.0%	6.2%
9	Duke Energy Corp.	5.0%	5.3%	5.4%	3.6%
10	Edison International	16.0%	7.0%	3.0%	6.7%
11	Emera Inc.	7.5%	4.3%	n/a	4.5%
12	Entergy Corp.	0.5%	6.6%	6.0%	3.2%
13	Exelon Corp.	n/a	6.3%	6.6%	4.5%
14	Hawaiian Elec.	4.5%	1.3%	3.1%	4.6%
15	IDACORP, Inc.	4.5%	3.0%	3.0%	3.6%
16	NorthWestern Corp.	3.5%	4.5%	1.7%	3.5%
17	OGE Energy Corp.	6.5%	-12.3%	10.2%	5.0%
18	Otter Tail Corp.	4.5%	9.0%	n/a	4.7%
19	Pinnacle West Capital	0.5%	7.1%	n/a	3.3%
20	Pub Sv Enterprise Grp.	4.5%	2.4%	4.3%	4.9%
21	Sempra Energy	7.0%	4.1%	5.4%	4.7%
22	Southern Company	6.5%	7.3%	4.0%	6.8%

(a) The Value Line Investment Survey (Jan. 20, Feb. 10 and Mar. 10, 2023).
(b) www.finance.yahoo.com (retreived Mar. 30, 2023).
(c) www.zacks.com (retrieved Mar. 30, 2023).
(d) See Exhibit AMM-6.

COST OF EQUITY ESTIMATES

		(a)	(a)	(a)	(a)
	Company	**V Line**	**IBES**	**Zacks**	**br+sv Growth**
1	ALLETE	10.4%	13.1%	11.7%	9.2%
2	Ameren Corp.	9.5%	9.7%	9.9%	8.8%
3	Avista Corp.	8.0%	9.7%	9.7%	8.8%
4	Black Hills Corp.	10.0%	9.4%	6.2%	10.2%
5	CenterPoint Energy	9.2%	1.6%	9.7%	7.6%
6	CMS Energy Corp.	9.7%	11.2%	11.3%	9.8%
7	Dominion Energy	9.0%	11.0%	19.8%	10.9%
8	DTE Energy Co.	8.0%	10.9%	9.5%	9.7%
9	Duke Energy Corp.	9.2%	9.5%	9.6%	7.8%
10	Edison International	20.4%	11.4%	7.3%	11.0%
11	Emera Inc.	12.6%	9.4%	n/a	9.6%
12	Entergy Corp.	4.6%	10.7%	10.1%	7.3%
13	Exelon Corp.	n/a	9.8%	10.1%	7.9%
14	Hawaiian Elec.	8.2%	5.0%	6.8%	8.3%
15	IDACORP, Inc.	7.5%	6.0%	6.0%	6.7%
16	NorthWestern Corp.	8.0%	9.0%	6.2%	8.1%
17	OGE Energy Corp.	11.2%	-7.6%	14.9%	9.8%
18	Otter Tail Corp.	7.0%	11.5%	n/a	7.2%
19	Pinnacle West Capital	5.1%	11.6%	n/a	7.8%
20	Pub Sv Enterprise Grp.	8.3%	6.2%	8.2%	8.7%
21	Sempra Energy	10.2%	7.4%	8.6%	7.9%
22	Southern Company	10.6%	11.4%	8.1%	10.9%
	Average (b)	**9.4%**	**10.4%**	**10.0%**	**9.1%**

(a) Sum of dividend yield (Exhibit AMM-5, p. 1) and respective growth rate (Exhibit AMM-5, p. 2).

(b) Excludes highlighted values.

UTILITY GROUP

		(a)	(a)	(a)	(b)	(c)	(d)	(e)		(f)	(g)		
		2026					Adjustment			"sv" Factor			
	Company	EPS	DPS	BVPS	b	r	Factor	Adjusted r	br	s	v	sv	br + sv
1	ALLETE	$5.00	$3.00	$54.00	40.0%	9.3%	1.0246	9.5%	3.8%	0.0271	0.3647	0.99%	4.8%
2	Ameren Corp.	$5.50	$3.30	$55.00	40.0%	10.0%	1.0296	10.3%	4.1%	0.0339	0.5000	1.70%	5.8%
3	Avista Corp.	$2.85	$2.05	$34.95	28.1%	8.2%	1.0305	8.4%	2.4%	0.0498	0.3922	1.95%	4.3%
4	Black Hills Corp.	$5.25	$2.95	$50.75	43.8%	10.3%	1.0297	10.7%	4.7%	0.0340	0.4514	1.53%	6.2%
5	CenterPoint Energy	$1.85	$0.95	$19.00	48.6%	9.7%	1.0187	9.9%	4.8%	0.0025	0.3667	0.09%	4.9%
6	CMS Energy Corp.	$3.75	$2.30	$26.00	38.7%	14.4%	1.0105	14.6%	5.6%	0.0148	0.6000	0.89%	6.5%
7	Dominion Energy	$5.10	$3.30	$43.40	35.3%	11.8%	1.0392	12.2%	4.3%	0.0305	0.5308	1.62%	5.9%
8	DTE Energy Co.	$8.30	$4.65	$60.75	44.0%	13.7%	1.0192	13.9%	6.1%	0.0007	0.5881	0.04%	6.2%
9	Duke Energy Corp.	$6.80	$4.30	$70.00	36.8%	9.7%	1.0133	9.8%	3.6%	0.0004	0.4043	0.02%	3.6%
10	Edison International	$6.30	$3.50	$47.45	44.4%	13.3%	1.0337	13.7%	6.1%	0.0106	0.5255	0.55%	6.7%
11	Emera Inc.	$4.70	$3.06	$45.35	34.9%	10.4%	1.0105	10.5%	3.7%	0.0185	0.4503	0.83%	4.5%
12	Entergy Corp.	$6.50	$5.00	$73.00	23.1%	8.9%	1.0289	9.2%	2.1%	0.0277	0.3787	1.05%	3.2%
13	Exelon Corp.	$3.00	$1.80	$28.75	40.0%	10.4%	0.9820	10.2%	4.1%	0.0078	0.4524	0.35%	4.5%
14	Hawaiian Elec.	$2.60	$1.60	$25.50	38.5%	10.2%	1.0209	10.4%	4.0%	0.0124	0.4632	0.57%	4.6%
15	IDACORP, Inc.	$6.10	$4.00	$67.30	34.4%	9.1%	1.0238	9.3%	3.2%	0.0101	0.4272	0.43%	3.6%
16	NorthWestern Corp.	$4.00	$2.68	$50.00	33.0%	8.0%	1.0277	8.2%	2.7%	0.0361	0.2308	0.83%	3.5%
17	OGE Energy Corp.	$3.15	$1.85	$26.00	41.3%	12.1%	1.0091	12.2%	5.0%	-	0.3882	0.00%	5.0%
18	Otter Tail Corp.	$3.65	$2.20	$34.25	39.7%	10.7%	1.0195	10.9%	4.3%	0.0079	0.4731	0.37%	4.7%
19	Pinnacle West Capital	$5.25	$3.66	$59.25	30.3%	8.9%	1.0172	9.0%	2.7%	0.0139	0.3763	0.52%	3.3%
20	Pub Sv Enterprise Grp.	$4.50	$2.80	$33.75	37.8%	13.3%	1.0151	13.5%	5.1%	(0.0037)	0.5645	-0.21%	4.9%
21	Sempra Energy	$11.25	$5.82	$102.65	48.3%	11.0%	1.0224	11.2%	5.4%	(0.0145)	0.4736	-0.69%	4.7%
22	Southern Company	$5.15	$3.10	$32.25	39.8%	16.0%	1.0216	16.3%	6.5%	0.0050	0.6206	0.31%	6.8%

UTILITY GROUP

		(a)	(a)	(h)	(a)	(a)	(h)	(i)	(a)	(a)		(j)	(a)	(a)	(i)
		2021			2026			Chg	2026				Common Shares		
	Company	Eq Ratio	Tot Cap	Com Eq	Eq Ratio	Tot Cap	Com Eq	Equity	High	Low	Avg.	M/B	2021	2026	Growth
1	ALLETE	57.8%	$4,465	$2,581	59.5%	$5,550	$3,302	5.1%	$100.0	$70.0	$85.0	1.574	56.01	61.00	1.72%
2	Ameren Corp.	44.0%	$24,193	$10,645	48.5%	$29,500	$14,308	6.1%	$120.0	$100.0	$110.0	2.000	262.00	285.00	1.70%
3	Avista Corp.	52.5%	$4,105	$2,155	51.5%	$5,675	$2,923	6.3%	$65.0	$50.0	$57.5	1.645	71.50	83.00	3.03%
4	Black Hills Corp.	40.3%	$6,914	$2,786	50.0%	$7,500	$3,750	6.1%	$105.0	$80.0	$92.5	1.823	64.74	71.00	1.86%
5	CenterPoint Energy	39.0%	$25,675	$10,013	42.5%	$28,400	$12,070	3.8%	$35.0	$25.0	$30.0	1.579	628.92	634.00	0.16%
6	CMS Energy Corp.	34.5%	$20,350	$7,021	37.5%	$20,800	$7,800	2.1%	$75.0	$55.0	$65.0	2.500	291.30	300.00	0.59%
7	Dominion Energy	38.5%	$66,344	$25,542	41.0%	$92,200	$37,802	8.2%	$105.0	$80.0	$92.5	2.131	810.40	870.00	1.43%
8	DTE Energy Co.	37.0%	$28,000	$10,360	39.0%	$32,200	$12,558	3.9%	$170.0	$125.0	$147.5	2.428	205.69	206.00	0.03%
9	Duke Energy Corp.	43.1%	$109,744	$47,300	37.5%	$144,100	$54,038	2.7%	$135.0	$100.0	$117.5	1.679	769.00	770.00	0.03%
10	Edison International	33.2%	$41,959	$13,930	32.0%	$61,000	$19,520	7.0%	$120.0	$80.0	$100.0	2.107	380.38	390.00	0.50%
11	Emera Inc.	42.1%	$27,171	$11,427	43.0%	$29,490	$12,690	2.1%	$95.0	$70.0	$82.5	1.819	266.00	279.80	1.02%
12	Entergy Corp.	35.2%	$36,810	$12,957	33.0%	$52,410	$17,295	5.9%	$135.0	$100.0	$117.5	1.610	211.18	230.00	1.72%
13	Exelon Corp.	49.1%	$70,107	$34,423	35.5%	$81,000	$28,755	-3.5%	$60.0	$45.0	$52.5	1.826	979.00	1000.00	0.43%
14	Hawaiian Elec.	52.8%	$4,524	$2,389	49.5%	$5,950	$2,945	4.3%	$55.0	$40.0	$47.5	1.863	109.31	113.00	0.67%
15	IDACORP, Inc.	57.2%	$4,669	$2,671	50.0%	$6,775	$3,388	4.9%	$130.0	$105.0	$117.5	1.746	50.52	52.00	0.58%
16	NorthWestern Corp.	47.8%	$4,893	$2,339	51.0%	$6,050	$3,086	5.7%	$75.0	$55.0	$65.0	1.300	54.06	62.00	2.78%
17	OGE Energy Corp.	53.0%	$8,962	$4,750	50.0%	$10,400	$5,200	1.8%	$50.0	$35.0	$42.5	1.635	200.20	200.20	0.00%
18	Otter Tail Corp.	58.5%	$2,041	$1,194	57.5%	$2,525	$1,452	4.0%	$75.0	$55.0	$65.0	1.898	41.63	42.50	0.41%
19	Pinnacle West Capital	46.1%	$12,820	$5,910	45.5%	$15,425	$7,018	3.5%	$110.0	$80.0	$95.0	1.603	113.01	118.00	0.87%
20	Pub Sv Enterprise Grp.	48.7%	$29,657	$14,443	45.5%	$36,900	$16,790	3.1%	$85.0	$70.0	$77.5	2.296	504.00	500.00	-0.16%
21	Sempra Energy	53.3%	$47,069	$25,088	52.5%	$59,800	$31,395	4.6%	$225.0	$165.0	$195.0	1.900	316.92	305.00	-0.76%
22	Southern Company	35.6%	$78,285	$27,869	37.0%	$93,500	$34,595	4.4%	$100.0	$70.0	$85.0	2.636	1060.00	1070.00	0.19%

(a) The Value Line Investment Survey (Jan. 20, Feb. 10 and Mar. 10, 2023).
(b) "b" is the retention ratio, computed as (EPS-DPS)/EPS.
(c) "r" is the rate of return on book equity, computed as EPS/BVPS.
(d) Computed using the formula 2*(1+5-Yr. Change in Equity)/(2+5 Yr. Change in Equity).
(e) Product of average year-end "r" for 2026 and Adjustment Factor.
(f) Product of change in common shares outstanding and M/B Ratio.
(g) Computed as 1 - B/M Ratio.
(h) Product of total capital and equity ratio.
(i) Five-year rate of change.
(j) Average of High and Low expected market prices divided by 2026 BVPS.

UTILITY GROUP

		(a)	(b)		(c)		(d)		(e)	(f)	
		Market Return (R_m)									
	Company	**Div Yield**	**Proj. Growth**	**Cost of Equity**	**Risk-Free Rate**	**Risk Premium**	**Beta**	**Unadjusted K_e**	**Market Cap**	**Size Adjustment**	**CAPM Result**
1	ALLETE	2.1%	9.5%	11.6%	3.8%	7.8%	0.90	10.8%	$3,500	0.93%	11.8%
2	Ameren Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	0.85	10.4%	$22,000	0.45%	10.9%
3	Avista Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	0.90	10.8%	$3,200	0.93%	11.8%
4	Black Hills Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	0.95	11.2%	$4,600	0.58%	11.8%
5	CenterPoint Energy	2.1%	9.5%	11.6%	3.8%	7.8%	1.10	12.4%	$17,900	0.45%	12.8%
6	CMS Energy Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	0.80	10.0%	$17,400	0.45%	10.5%
7	Dominion Energy	2.1%	9.5%	11.6%	3.8%	7.8%	0.80	10.0%	$52,200	-0.26%	9.8%
8	DTE Energy Co.	2.1%	9.5%	11.6%	3.8%	7.8%	0.95	11.2%	$22,900	0.45%	11.7%
9	Duke Energy Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	0.85	10.4%	$78,300	-0.26%	10.2%
10	Edison International	2.1%	9.5%	11.6%	3.8%	7.8%	0.95	11.2%	$25,900	0.45%	11.7%
11	Emera Inc.	2.1%	9.5%	11.6%	3.8%	7.8%	0.70	9.3%	$14,300	0.45%	9.7%
12	Entergy Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	0.95	11.2%	$23,000	0.45%	11.7%
13	Exelon Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	n/a	n/a	$41,500	-0.26%	n/a
14	Hawaiian Elec.	2.1%	9.5%	11.6%	3.8%	7.8%	0.85	10.4%	$4,600	0.58%	11.0%
15	IDACORP, Inc.	2.1%	9.5%	11.6%	3.8%	7.8%	0.80	10.0%	$5,500	0.58%	10.6%
16	NorthWestern Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	0.90	10.8%	$3,400	0.93%	11.8%
17	OGE Energy Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	1.00	11.6%	$7,300	0.57%	12.2%
18	Otter Tail Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	0.90	10.8%	$3,000	0.93%	11.8%
19	Pinnacle West Capital	2.1%	9.5%	11.6%	3.8%	7.8%	0.90	10.8%	$8,500	0.57%	11.4%
20	Pub Sv Enterprise Grp.	2.1%	9.5%	11.6%	3.8%	7.8%	0.90	10.8%	$30,500	0.45%	11.3%
21	Sempra Energy	2.1%	9.5%	11.6%	3.8%	7.8%	0.95	11.2%	$49,400	-0.26%	11.0%
22	Southern Company	2.1%	9.5%	11.6%	3.8%	7.8%	0.90	10.8%	$71,300	-0.26%	10.6%
	Average (g)							**10.8%**			**11.2%**

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (retrieved Mar. 16, 2023)..

(b) Average of weighted average earnings growth rates from IBES, Value Line, and Zacks for dividend-paying stocks in the S&P 500 based on data from Refinitiv, as provided by fidelity.com (retrieved Mar. 16, 2023), www.valueline.com (retrieved Mar. 16, 2023)., and www.zacks.com (retrieved Mar. 16, 2023). Eliminated growth rates that were greater than 20%, as well as all negative values.

(c) Average yield on 30-year Treasury bonds for six-months ending Mar. 2023 based on data from Moody's Investors Service.

(d) The Value Line Investment Survey, Summary & Index (Mar. 31, 2023).

(e) The Value Line Investment Survey (Jan. 20, Feb. 10 and Mar. 10, 2023).

(f) Kroll, 2023 Supplementary CRSP Decile Size Study Data Exhibits.

(g) Excludes highlighted values.

UTILITY GROUP

		(a)	(b)		(c)		(d)		(e)	(d)				(f)	(g)	
		Market Return (R_m)					**Unadjusted RP**		**Beta Adjusted RP**							
	Company	**Div Yield**	**Proj. Growth**	**Cost of Equity**	**Risk-Free Rate**	**Risk Premium**	**Weight**	***RP*** [1]	**Beta**	**Weight**	***RP*** [2]	**Total RP**	**Unadjusted K_e**	**Market Cap**	**Size Adjustment**	**ECAPM Result**
1	ALLETE	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.90	75%	5.3%	7.2%	11.0%	$3,500	0.93%	11.9%
2	Ameren Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.85	75%	5.0%	6.9%	10.7%	$22,000	0.45%	11.2%
3	Avista Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.90	75%	5.3%	7.2%	11.0%	$3,200	0.93%	11.9%
4	Black Hills Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.95	75%	5.6%	7.5%	11.3%	$4,600	0.58%	11.9%
5	CenterPoint Energy	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	1.10	75%	6.4%	8.4%	12.2%	$17,900	0.45%	12.6%
6	CMS Energy Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.80	75%	4.7%	6.6%	10.4%	$17,400	0.45%	10.9%
7	Dominion Energy	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.80	75%	4.7%	6.6%	10.4%	$52,200	-0.26%	10.2%
8	DTE Energy Co.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.95	75%	5.6%	7.5%	11.3%	$22,900	0.45%	11.8%
9	Duke Energy Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.85	75%	5.0%	6.9%	10.7%	$78,300	-0.26%	10.5%
10	Edison International	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.95	75%	5.6%	7.5%	11.3%	$25,900	0.45%	11.8%
11	Emera Inc.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.70	75%	4.1%	6.0%	9.8%	$14,300	0.45%	10.3%
12	Entergy Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.95	75%	5.6%	7.5%	11.3%	$23,000	0.45%	11.8%
13	Exelon Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	n/a	75%	n/a	n/a	n/a	$41,500	-0.26%	n/a
14	Hawaiian Elec.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.85	75%	5.0%	6.9%	10.7%	$4,600	0.58%	11.3%
15	IDACORP, Inc.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.80	75%	4.7%	6.6%	10.4%	$5,500	0.58%	11.0%
16	NorthWestern Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.90	75%	5.3%	7.2%	11.0%	$3,400	0.93%	11.9%
17	OGE Energy Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	1.00	75%	5.9%	7.8%	11.6%	$7,300	0.57%	12.2%
18	Otter Tail Corp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.90	75%	5.3%	7.2%	11.0%	$3,000	0.93%	11.9%
19	Pinnacle West Capital	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.90	75%	5.3%	7.2%	11.0%	$8,500	0.57%	11.6%
20	Pub Sv Enterprise Grp.	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.90	75%	5.3%	7.2%	11.0%	$30,500	0.45%	11.5%
21	Sempra Energy	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.95	75%	5.6%	7.5%	11.3%	$49,400	-0.26%	11.0%
22	Southern Company	2.1%	9.5%	11.6%	3.8%	7.8%	25%	2.0%	0.90	75%	5.3%	7.2%	11.0%	$71,300	-0.26%	10.8%
	Average (h)												**11.0%**			**11.4%**

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (retrieved Mar. 16, 2023)..

(b) Average of weighted average earnings growth rates from IBES, Value Line, and Zacks for dividend-paying stocks in the S&P 500 based on data from Refinitiv, as provided by fidelity.com (retrieved Mar. 16, 2023), www.valueline.com (retrieved Mar. 16, 2023)., and www.zacks.com (retrieved Mar. 16, 2023). Eliminated growth rates that were greater than 20%, as well as all negative values.

(c) Average yield on 30-year Treasury bonds for six-months ending Mar. 2023 based on data from Moody's Investors Service.

(d) Roger A. Morin, *New Regulatory Finance* , Pub. Util. Reports, Inc. (2006) at 190.

(e) The Value Line Investment Survey, Summary & Index (Mar. 31, 2023).

(f) The Value Line Investment Survey (Jan. 20, Feb. 10 and Mar. 10, 2023).

(g) Kroll, 2023 Supplementary CRSP Decile Size Study Data Exhibits.

(h) Excludes highlighted values.

COST OF EQUITY ESTIMATE

Current Equity Risk Premium	
(a) Avg. Yield over Study Period	7.83%
(b) Average Utility Bond Yield	5.49%
Change in Bond Yield	-2.34%
(c) Risk Premium/Interest Rate Relationship	-0.4273
Adjustment to Average Risk Premium	1.00%
(a) Average Risk Premium over Study Period	3.89%
Adjusted Risk Premium	**4.89%**
Implied Cost of Equity	
(b) Baa Utility Bond Yield	5.75%
Adjusted Equity Risk Premium	4.89%
Risk Premium Cost of Equity	**10.64%**

(a) Exhibit AMM-9, page 2.
(b) Average bond yield on all utility bonds and 'Baa' subset for six-months ending Mar. 2023 based on data from Moody's Investors Service at www.credittrends.com.
(c) Exhibit AMM-9, page 3.

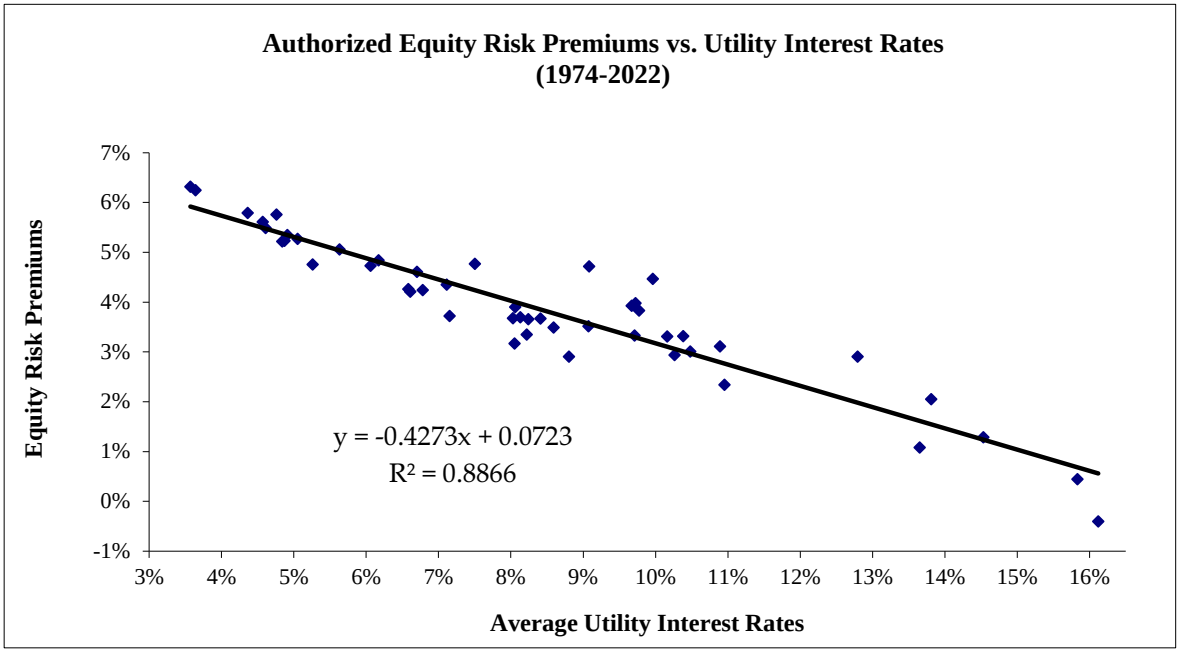
AUTHORIZED RETURNS

Year	(a) Allowed ROE	(b) Average Utility Bond Yield	Risk Premium
1974	13.10%	9.27%	3.83%
1975	13.20%	9.88%	3.32%
1976	13.10%	9.17%	3.93%
1977	13.30%	8.58%	4.72%
1978	13.20%	9.22%	3.98%
1979	13.50%	10.39%	3.11%
1980	14.23%	13.15%	1.08%
1981	15.22%	15.62%	-0.40%
1982	15.78%	15.33%	0.45%
1983	15.36%	13.31%	2.05%
1984	15.32%	14.03%	1.29%
1985	15.20%	12.29%	2.91%
1986	13.93%	9.46%	4.47%
1987	12.99%	9.98%	3.01%
1988	12.79%	10.45%	2.34%
1989	12.97%	9.66%	3.31%
1990	12.70%	9.76%	2.94%
1991	12.54%	9.21%	3.33%
1992	12.09%	8.57%	3.52%
1993	11.46%	7.56%	3.90%
1994	11.21%	8.30%	2.91%
1995	11.58%	7.91%	3.67%
1996	11.40%	7.74%	3.66%
1997	11.33%	7.63%	3.70%
1998	11.77%	7.00%	4.77%
1999	10.72%	7.55%	3.17%
2000	11.58%	8.09%	3.49%
2001	11.07%	7.72%	3.35%
2002	11.21%	7.53%	3.68%
2003	10.96%	6.61%	4.35%
2004	10.81%	6.20%	4.61%
2005	10.51%	5.67%	4.84%
2006	10.34%	6.08%	4.26%
2007	10.32%	6.11%	4.21%
2008	10.37%	6.65%	3.72%
2009	10.52%	6.28%	4.24%
2010	10.29%	5.56%	4.73%
2011	10.19%	5.13%	5.06%
2012	10.02%	4.26%	5.76%
2013	9.82%	4.55%	5.27%
2014	9.76%	4.41%	5.35%
2015	9.60%	4.37%	5.23%
2016	9.60%	4.11%	5.49%
2017	9.68%	4.07%	5.61%
2018	9.56%	4.34%	5.22%
2019	9.65%	3.86%	5.79%
2020	9.39%	3.07%	6.32%
2021	9.39%	3.14%	6.25%
2022	9.52%	4.76%	4.76%
Average	**11.72%**	**7.83%**	**3.89%**

(a) S&P Global Market Intelligence, *Major Rate Case Decisions*, RRA Regulatory Focus; *UtilityScope Regulatory Service*, Argus. Data for "general" rate cases (excluding limited-issue rider cases) beginning in 2006 (the first year such data presented by RRA).

(b) Moody's Investors Service.

REGRESSION RESULTS



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.941588
R Square	0.886588
Adjusted R Square	0.884175
Standard Error	0.004801
Observations	49

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.008469	0.008469	367.418596	0.000000
Residual	47	0.001083	0.000023		
Total	48	0.009552			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.072337	0.001875	38.582107	0.000000	0.068565	0.076109	0.068565	0.076109
X Variable 1	-0.427257	0.022290	-19.168166	0.000000	-0.472099	-0.382416	-0.472099	-0.382416

UTILITY GROUP

		(a)	(b)	(c)
	Company	**Expected Return on Common Equity**	**Adjustment Factor**	**Adjusted Return on Common Equity**
1	ALLETE	9.0%	1.0246	9.2%
2	Ameren Corp.	10.0%	1.0296	10.3%
3	Avista Corp.	8.0%	1.0305	8.2%
4	Black Hills Corp.	9.5%	1.0297	9.8%
5	CenterPoint Energy	10.0%	1.0187	10.2%
6	CMS Energy Corp.	14.0%	1.0105	14.1%
7	Dominion Energy	12.0%	1.0392	12.5%
8	DTE Energy Co.	12.5%	1.0192	12.7%
9	Duke Energy Corp.	9.0%	1.0133	9.1%
10	Edison International	13.0%	1.0337	13.4%
11	Emera Inc.	10.5%	1.0105	10.6%
12	Entergy Corp.	9.0%	1.0289	9.3%
13	Exelon Corp.	10.0%	0.9820	9.8%
14	Hawaiian Elec.	12.5%	1.0209	12.8%
15	IDACORP, Inc.	9.5%	1.0238	9.7%
16	NorthWestern Corp.	8.0%	1.0277	8.2%
17	OGE Energy Corp.	13.0%	1.0091	13.1%
18	Otter Tail Corp.	11.5%	1.0195	11.7%
19	Pinnacle West Capital	9.0%	1.0172	9.2%
20	Pub Sv Enterprise Grp.	13.5%	1.0151	13.7%
21	Sempra Energy	11.0%	1.0224	11.2%
22	Southern Company	14.5%	1.0216	14.8%
	Average (d)	**10.9%**		**11.1%**

(a) The Value Line Investment Survey (Jan. 20, Feb. 10 and Mar. 10, 2023).
(b) Adjustment to convert year-end return to an average rate of return from Exhibit AMM-6.
(c) (a) x (b).
(d) Excludes highlighted values.

FLOTATION COST STUDY

Exhibit AMM-11
Page 1 of 1

ELECTRIC & GAS UTILITIES

No.	Sym	Company	(1) Date	(2) Shares Issued	(3) Offering Price	(4) Underwriting Discount (per share)	(5) Underwriting Discount	(6) Offering Expense	(7) Total Flotation Costs	(8) Gross Proceeds Before Flot. Costs	(9) Flotation Cost (%)
1	ALE	ALLETE	4/1/2022	3,200,000	$63.00	$2.20500	$7,056,000	$700,000	$7,756,000	$201,600,000	3.847%
2	LNT	Alliant Energy	11/14/2019	3,717,502	$52.63	$0.39500	$1,468,413	$500,000	$1,968,413	$195,652,130	1.006%
3	AEE	Ameren Corp.	8/5/2019	7,549,205	$74.30	$0.12000	$905,905	$750,000	$1,655,905	$560,905,932	0.295%
4	AEP	American Elec Pwr	4/2/2009	69,000,000	$24.50	$0.73500	$50,715,000	$400,000	$51,115,000	$1,690,500,000	3.024%
5	AGR	Avangrid, Inc.					N/A				
6	AVA	Avista Corp.	12/13/2006	3,162,500	$25.05	$0.48000	$1,518,000	$300,000	$1,818,000	$79,220,625	2.295%
7	BKH	Black Hills Corp.	2/25/2020	1,222,942	$81.77	$0.73590	$899,963	$230,000	$1,129,963	$99,999,967	1.130%
8	CNP	CenterPoint Energy	9/27/2018	60,550,459	$27.25	$0.75000	$45,412,844	$1,000,000	$46,412,844	$1,650,000,008	2.813%
9	CMS	CMS Energy Corp.	3/31/2005	23,000,000	$12.25	$0.42880	$9,862,400	$325,000	$10,187,400	$281,750,000	3.616%
10	ED	Consolidated Edison (a)	6/17/2021	10,100,000	$76.92	$0.83000	$8,383,000	$450,000	$8,833,000	$776,892,000	1.137%
11	D	Dominion Energy (a)	3/29/2018	20,000,000	$67.33	$1.89420	$37,884,000	$450,000	$38,334,000	$1,346,516,000	2.847%
12	DTE	DTE Energy Co.	10/29/2019	2,400,000	$126.00	$3.15000	$7,560,000	$300,000	$7,860,000	$302,400,000	2.599%
13	DUK	Duke Energy Corp. (a)	11/18/2019	25,000,000	$85.99	$2.66000	$66,500,000	$592,000	$67,092,000	$2,149,750,000	3.121%
14	EIX	Edison International	5/13/2020	14,181,882	$56.41	$0.98718	$14,000,000	$1,000,000	$15,000,000	$799,999,964	1.875%
15	ETR	Entergy Corp.	6/8/2018	13,289,037	$75.25	$0.80000	$10,631,230	$650,000	$11,281,230	$1,000,000,034	1.128%
16	EVRG	Evergy Inc.					N/A				
17	ES	Eversource Energy	6/12/2020	6,000,000	$84.91	$1.35000	$8,100,000	$600,000	$8,700,000	$509,460,000	1.708%
18	EXC	Exelon Corp. (a)	8/8/2022	11,300,000	$43.32	$0.99000	$11,187,000	$900,000	$12,087,000	$489,516,000	2.469%
19	FE	FirstEnergy Corp.	9/15/2003	32,200,000	$30.00	$0.97500	$31,395,000	$423,000	$31,818,000	$966,000,000	3.294%
20	HE	Hawaiian Elec.	3/20/2013	7,000,000	$26.75	$1.00312	$7,021,840	$450,000	$7,471,840	$187,250,000	3.990%
21	IDA	IDACORP, Inc.	12/10/2004	4,025,000	$30.00	$1.20000	$4,830,000	$300,000	$5,130,000	$120,750,000	4.248%
22	NEE	NextEra Energy, Inc. (a)	11/3/2016	13,800,000	$124.00	$1.89000	$26,082,000	$750,000	$26,832,000	$1,711,200,000	1.568%
23	NWE	NorthWestern Corp.	11/18/2021	6,074,767	$53.50	$1.60500	$9,750,001	$900,000	$10,650,001	$325,000,035	3.277%
24	OGE	OGE Energy Corp.	8/22/2003	5,324,074	$21.60	$0.79000	$4,206,018	$325,000	$4,531,018	$114,999,998	3.940%
25	OTTR	Otter Tail Corp.					N/A				
26	PNW	Pinnacle West Capital	4/9/2010	6,900,000	$38.00	$1.33000	$9,177,000	$190,000	$9,367,000	$262,200,000	3.572%
27	PNM	PNM Resources	1/7/2020	5,375,000	$47.21	$1.99000	$10,696,250	$750,000	$11,446,250	$253,753,750	4.511%
28	POR	Portland General Elec.	10/27/2022	10,100,000	$43.00	$1.23625	$12,486,125	$515,000	$13,001,125	$434,300,000	2.994%
29	PPL	PPL Corp.	5/10/2018	55,000,000	$27.00	$0.29430	$16,186,500	$1,000,000	$17,186,500	$1,485,000,000	1.157%
30	PEG	Pub Sv Enterprise Grp.	10/2/2003	9,487,500	$41.75	$1.25250	$11,883,094	$350,000	$12,233,094	$396,103,125	3.088%
31	SRE	Sempra Energy	1/5/2018	26,869,158	$107.00	$1.92600	$51,749,998	$1,500,000	$53,249,998	$2,874,999,906	1.852%
32	SO	Southern Company (a)	8/18/2016	32,500,000	$49.30	$1.66000	$53,950,000	$557,000	$54,507,000	$1,602,250,000	3.402%
33	WEC	WEC Energy Group					N/A				
34	XEL	Xcel Energy Inc. (a)	10/30/2019	10,300,000	$62.69	$0.63000	$6,489,000	$650,000	$7,139,000	$645,707,000	1.106%
		Average									**2.564%**
1	ATO	Atmos Energy Corp.	11/30/2018	7,008,087	$92.75	$0.97690	$6,846,200	$1,000,000	$7,846,200	$650,000,069	1.207%
2	CPK	Chesapeake Utilities	9/23/2016	960,488	$62.26	$2.33000	$2,237,937	$162,046	$2,399,983	$59,799,983	4.013%
3	NJR	New Jersey Resources	12/4/2019	5,700,000	$41.25	$1.23750	$7,053,750	$500,000	$7,553,750	$235,125,000	3.213%
4	NI	NiSource Inc.	5/3/2017	N/A	N/A	N/A	$10,000,000	$57,950	$10,057,950	$500,000,000	2.012%
5	NWN	Northwest Nat. Holding Co.	3/30/2022	2,500,000	$50.00	$1.62500	$4,062,500	$450,000	$4,512,500	$125,000,000	3.610%
6	OGS	ONE Gas, Inc.					N/A				
7	SWX	Southwest Gas	3/9/2023	3,576,180	$60.12	$2.02910	$7,256,427	$538,000	$7,794,427	$214,999,942	3.625%
8	SR	Spire Inc.	5/9/2018	2,000,000	$63.05	$2.10938	$4,218,760	$325,000	$4,543,760	$126,100,000	3.603%
		Average									**3.040%**
		Average - Electric & Gas									**2.654%**

Column Notes:
(1-4) SEC Form 424B for each company (through April 10, 2023).
(5) Column (2) * Column (4)
(6) SEC Form 424B for each company (through April 10, 2023).
(7) Column (5) + Column (6)
(8) Column (2) * Column (3)
(9) Column (7) / Column (8)

Note (a): Underwriting discount computed as the difference between the current market price and the price offered to the issuing company by the underwriters.

DIVIDEND YIELD

	Company	Industry Group	(a) Price	(b) Dividends	Yield
1	3M Company	Diversified Co.	$106.36	$ 6.00	5.6%
2	Abbott Labs.	Med Supp Non-Invasive	$100.29	$ 2.04	2.0%
3	Air Products & Chem.	Chemical (Diversified)	$281.14	$ 7.00	2.5%
4	Allstate Corp.	Insurance (Prop/Cas.)	$120.44	$ 3.56	3.0%
5	Amdocs Ltd.	IT Services	$92.79	$ 1.74	1.9%
6	Amgen	Biotechnology	$234.21	$ 8.52	3.6%
7	Archer Daniels Midl'd	Food Processing	$79.03	$ 1.80	2.3%
8	Becton, Dickinson	Med Supp Invasive	$237.50	$ 3.68	1.5%
9	Bristol-Myers Squibb	Drug	$68.51	$ 2.31	3.4%
10	Brown & Brown	Financial Svcs. (Div.)	$55.82	$ 0.46	0.8%
11	Brown-Forman 'B'	Beverage	$63.90	$ 0.82	1.3%
12	Church & Dwight	Household Products	$84.48	$ 1.09	1.3%
13	Cisco Systems	Telecom. Equipment	$49.51	$ 1.56	3.2%
14	Coca-Cola	Beverage	$60.07	$ 1.84	3.1%
15	Colgate-Palmolive	Household Products	$72.99	$ 1.92	2.6%
16	Comcast Corp.	Cable TV	$36.81	$ 1.16	3.2%
17	Costco Wholesale	Retail Store	$488.50	$ 3.75	0.8%
18	Danaher Corp.	Diversified Co.	$247.94	$ 1.08	0.4%
19	Gen'l Mills	Food Processing	$80.16	$ 2.17	2.7%
20	Gilead Sciences	Drug	$80.65	$ 3.00	3.7%
21	Hershey Co.	Food Processing	$241.73	$ 4.27	1.8%
22	Home Depot	Retail Building Supply	$292.87	$ 8.36	2.9%
23	Hormel Foods	Food Processing	$41.24	$ 1.10	2.7%
24	Intercontinental Exch.	Brokers & Exchanges	$100.99	$ 1.68	1.7%
25	Johnson & Johnson	Med Supp Non-Invasive	$154.32	$ 4.52	2.9%
26	Kimberly-Clark	Household Products	$126.71	$ 4.72	3.7%
27	Lilly (Eli)	Drug	$325.23	$ 4.52	1.4%
28	Lockheed Martin	Aerospace/Defense	$475.63	$ 12.20	2.6%
29	Marsh & McLennan	Financial Svcs. (Div.)	$161.25	$ 2.48	1.5%
30	McCormick & Co.	Food Processing	$73.91	$ 1.56	2.1%
31	McDonald's Corp.	Restaurant	$267.83	$ 6.20	2.3%
32	McKesson Corp.	Med Supp Non-Invasive	$348.20	$ 2.28	0.7%
33	Merck & Co.	Drug	$107.28	$ 2.92	2.7%
34	Microsoft Corp.	Computer Software	$262.00	$ 2.73	1.0%
35	Mondelez Int'l	Food Processing	$66.46	$ 1.54	2.3%
36	NewMarket Corp.	Chemical (Specialty)	$347.55	$ 8.40	2.4%
37	Northrop Grumman	Aerospace/Defense	$461.03	$ 6.92	1.5%
38	Oracle Corp.	Computer Software	$87.33	$ 1.60	1.8%
39	PepsiCo, Inc.	Beverage	$175.49	$ 4.60	2.6%
40	Pfizer, Inc.	Drug	$40.85	$ 1.64	4.0%
41	Procter & Gamble	Household Products	$140.96	$ 3.65	2.6%
42	Progressive Corp.	Insurance (Prop/Cas.)	$141.53	$ 0.40	0.3%
43	Republic Services	Environmental	$129.80	$ 1.98	1.5%
44	Sherwin-Williams	Retail Building Supply	$219.55	$ 2.42	1.1%
45	Smucker (J.M.)	Food Processing	$150.87	$ 4.14	2.7%
46	Texas Instruments	Semiconductor	$174.94	$ 4.96	2.8%
47	Thermo Fisher Sci.	Precision Instrument	$551.89	$ 1.40	0.3%
48	Travelers Cos.	Insurance (Prop/Cas.)	$176.47	$ 3.72	2.1%
49	Verizon Communic.	Telecom. Services	$38.05	$ 2.64	6.9%
50	Walmart Inc.	Retail Store	$141.28	$ 2.32	1.6%
51	Waste Management	Environmental	$152.25	$ 2.80	1.8%
	Average				**2.3%**

(a) Average of closing prices for 30 trading days ended Mar. 29, 2023.

(b) The Value Line Investment Survey, *Summary & Index* (Mar. 31, 2023).

GROWTH RATES

		(a)	(b)	(c)
		Earnings Growth		
	Company	**V Line**	**IBES**	**Zacks**
1	3M Company	7.50%	0.09%	9.50%
2	Abbott Labs.	6.50%	8.30%	5.09%
3	Air Products & Chem.	11.50%	8.79%	11.68%
4	Allstate Corp.	3.50%	-2.19%	7.00%
5	Amdocs Ltd.	7.50%	11.07%	11.00%
6	Amgen	4.50%	4.12%	7.00%
7	Archer Daniels Midl'd	13.00%	-2.80%	6.39%
8	Becton, Dickinson	5.00%	6.30%	7.77%
9	Bristol-Myers Squibb	n/a	4.06%	5.70%
10	Brown & Brown	8.00%	13.22%	n/a
11	Brown-Forman 'B'	14.50%	8.85%	n/a
12	Church & Dwight	6.00%	7.81%	7.64%
13	Cisco Systems	8.50%	7.32%	6.50%
14	Coca-Cola	8.00%	6.06%	6.66%
15	Colgate-Palmolive	6.00%	6.02%	6.21%
16	Comcast Corp.	8.50%	6.40%	12.64%
17	Costco Wholesale	10.50%	9.90%	9.24%
18	Danaher Corp.	16.00%	3.31%	12.00%
19	Gen'l Mills	4.50%	7.04%	7.50%
20	Gilead Sciences	12.00%	2.52%	12.26%
21	Hershey Co.	9.00%	9.64%	7.67%
22	Home Depot	9.00%	2.22%	11.22%
23	Hormel Foods	7.50%	3.30%	5.83%
24	Intercontinental Exch.	7.00%	5.86%	5.40%
25	Johnson & Johnson	8.00%	3.94%	5.53%
26	Kimberly-Clark	7.00%	9.61%	9.86%
27	Lilly (Eli)	11.50%	22.87%	20.62%
28	Lockheed Martin	7.00%	9.55%	6.86%
29	Marsh & McLennan	10.50%	9.08%	8.46%
30	McCormick & Co.	4.50%	3.51%	6.92%
31	McDonald's Corp.	9.00%	7.75%	8.07%
32	McKesson Corp.	10.00%	11.87%	10.36%
33	Merck & Co.	8.50%	10.47%	8.01%
34	Microsoft Corp.	15.00%	11.90%	11.66%
35	Mondelez Int'l	7.50%	6.45%	7.14%
36	NewMarket Corp.	1.00%	7.70%	n/a
37	Northrop Grumman	9.50%	3.00%	3.45%
38	Oracle Corp.	10.00%	9.06%	8.00%
39	PepsiCo, Inc.	6.50%	7.55%	7.63%
40	Pfizer, Inc.	2.00%	-8.00%	9.00%
41	Procter & Gamble	5.50%	5.07%	6.14%
42	Progressive Corp.	6.50%	28.64%	23.89%
43	Republic Services	12.50%	8.97%	9.11%
44	Sherwin-Williams	7.00%	9.07%	10.30%
45	Smucker (J.M.)	4.00%	3.79%	4.00%
46	Texas Instruments	4.50%	10.00%	9.33%
47	Thermo Fisher Sci.	11.00%	7.77%	12.50%
48	Travelers Cos.	7.50%	8.83%	10.71%
49	Verizon Communic.	2.50%	0.13%	4.15%
50	Walmart Inc.	7.50%	5.09%	5.50%
51	Waste Management	6.50%	8.75%	10.88%

(a) The Value Line Investment Survey (various editions as of Mar. 31, 2023).

(b) www.finance.yahoo.com (retrieved Mar. 30, 2023).

(c) www.zacks.com (retrieved Mar. 30, 2023).

DCF COST OF EQUITY ESTIMATES

		(a)	(b)	(c)
		Earnings Growth		
	Company	**V Line**	**IBES**	**Zacks**
1	3M Company	13.1%	5.7%	15.1%
2	Abbott Labs.	8.5%	10.3%	7.1%
3	Air Products & Chem.	14.0%	11.3%	14.2%
4	Allstate Corp.	6.5%	0.8%	10.0%
5	Amdocs Ltd.	9.4%	12.9%	12.9%
6	Amgen	8.1%	7.8%	10.6%
7	Archer Daniels Midl'd	15.3%	-0.5%	8.7%
8	Becton, Dickinson	6.5%	7.8%	9.3%
9	Bristol-Myers Squibb	n/a	7.4%	9.1%
10	Brown & Brown	8.8%	14.0%	n/a
11	Brown-Forman 'B'	15.8%	10.1%	n/a
12	Church & Dwight	7.3%	9.1%	8.9%
13	Cisco Systems	11.7%	10.5%	9.7%
14	Coca-Cola	11.1%	9.1%	9.7%
15	Colgate-Palmolive	8.6%	8.7%	8.8%
16	Comcast Corp.	11.7%	9.6%	15.8%
17	Costco Wholesale	11.3%	10.7%	10.0%
18	Danaher Corp.	16.4%	3.7%	12.4%
19	Gen'l Mills	7.2%	9.7%	10.2%
20	Gilead Sciences	15.7%	6.2%	16.0%
21	Hershey Co.	10.8%	11.4%	9.4%
22	Home Depot	11.9%	5.1%	14.1%
23	Hormel Foods	10.2%	6.0%	8.5%
24	Intercontinental Exch.	8.7%	7.5%	7.1%
25	Johnson & Johnson	10.9%	6.9%	8.5%
26	Kimberly-Clark	10.7%	13.3%	13.6%
27	Lilly (Eli)	12.9%	24.3%	22.0%
28	Lockheed Martin	9.6%	12.1%	9.4%
29	Marsh & McLennan	12.0%	10.6%	10.0%
30	McCormick & Co.	6.6%	5.6%	9.0%
31	McDonald's Corp.	11.3%	10.1%	10.4%
32	McKesson Corp.	10.7%	12.5%	11.0%
33	Merck & Co.	11.2%	13.2%	10.7%
34	Microsoft Corp.	16.0%	12.9%	12.7%
35	Mondelez Int'l	9.8%	8.8%	9.5%
36	NewMarket Corp.	3.4%	10.1%	n/a
37	Northrop Grumman	11.0%	4.5%	5.0%
38	Oracle Corp.	11.8%	10.9%	9.8%
39	PepsiCo, Inc.	9.1%	10.2%	10.3%
40	Pfizer, Inc.	6.0%	-4.0%	13.0%
41	Procter & Gamble	8.1%	7.7%	8.7%
42	Progressive Corp.	6.8%	28.9%	24.2%
43	Republic Services	14.0%	10.5%	10.6%
44	Sherwin-Williams	8.1%	10.2%	11.4%
45	Smucker (J.M.)	6.7%	6.5%	6.7%
46	Texas Instruments	7.3%	12.8%	12.2%
47	Thermo Fisher Sci.	11.3%	8.0%	12.8%
48	Travelers Cos.	9.6%	10.9%	12.8%
49	Verizon Communic.	9.4%	7.1%	11.1%
50	Walmart Inc.	9.1%	6.7%	7.1%
51	Waste Management	8.3%	10.6%	12.7%
	Average (b)	**10.9%**	**10.4%**	**10.9%**

(a) Sum of dividend yield (p. 1) and respective growth rate (p. 2).
(b) Excludes highlighted figures.