Attachment C

Exhibit No. RG&E-100

Exhibit No. RG&E-100

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Rochester Gas & Electric Corporation	**)**	**Docket No. ER23-___-000**

PREPARED DIRECT TESTIMONY OF ADRIEN M. MCKENZIE, CFA

Dated: May 3, 2023

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GLOSSARY OF ACRONYMS

CAPM	Capital Asset Pricing Model
CLCPA	Climate Leadership and Community Protection Act
Commission	Federal Energy Regulatory Commission
CPI	Consumer Price Index
D.C. Circuit	United States Court of Appeals for the District of Columbia Circuit
DCF	Discounted Cash Flow
EEI	Edison Electric Institute
EIA	Energy Information Administration
EPS	earnings per share
FPA	Federal Power Act
FERC	Federal Energy Regulatory Commission
FOMC	Federal Open Market Committee
GDP	Gross Domestic Product
IBES	Institutional Brokers' Estimate System, now Refinitiv I/B/E/S Estimates
MISO TOs	Transmission-owning members of the Midcontinent Independent System Operator, Inc.
Moody's	Moody's Investors Service, Inc.
NYISO	New York Independent System Operator, Inc.
NYPSC	New York State Public Service Commission
NYSE	New York Stock Exchange
OATT	Open Access Transmission Tariff
PCE	Personal Consumption Expenditure Price Index
RG&E or the Company	Rochester Gas and Electric Corporation
ROE	return on equity
RRA	S&P Global Market Intelligence, RRA Regulatory Focus (formerly Regulatory Research Associates, Inc.)
S&P	S&P Global Ratings
SPP	Southwest Power Pool, Inc.
Value Line	The Value Line Investment Survey

I. INTRODUCTION

Q. Please state your name and business address.

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

Q. In what capacity are you employed?

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

Q. Please describe your qualifications and experience.

A. The details of my qualifications and experience are included in Exhibit No. RG&E-101 attached to my testimony.

A. Overview

Q. What is the purpose of your testimony?

A. Rate Schedule 19 of NYISO's OATT provides a mechanism for recovery of the costs of local transmission upgrades determined by the NYPSC to be necessary to meet New York State's climate and renewable energy goals, as required under New York State law.[1] Local transmission projects approved by the NYPSC ("CLCPA Eligible Projects") are authorized under Rate Schedule 19 for statewide cost allocation and recovery. To develop charges under Rate Schedule 19, transmission owners in New York that develop, construct and own CLCPA Eligible Projects must establish and have on file with the Commission a cost of service formula rate template for each such local transmission project. RG&E is a transmission owner in New York that may develop, construct and own CLCPA Eligible Projects.[2] In this proceeding, RG&E has proposed

[1] These New York State laws include, but is not limited to, the CLCPA.

[2] In addition to RG&E, the other transmission owners in New York presently responsible for local transmission districts include Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Niagara Mohawk Power Corporation d/b/a National Grid, New York State Electric & Gas Corporation, and Orange and Rockland Utilities, Inc.. Each transmission owner

(continued . . .)

a formula rate template and associated implementation protocols for determination of annual revenue requirements for CLCPA Eligible Projects recoverable on a statewide basis under Rate Schedule 19. Under Rate Schedule 19, each transmission owner's revenue requirements for one or more CLCPA Eligible Projects will be calculated using the lower of the NYPSC-approved ROE or an ROE approved by the Commission. In effect, therefore, the ROE approved by the Commission for CLCPA Eligible Projects will constitute a form of ceiling ROE, thereby assuring that revenue requirements for CLCPA Eligible Projects under Rate Schedule 19 will not reflect an ROE that exceeds a level that has been determined by the Commission to be just and reasonable and not unduly discriminatory or preferential.

The purpose of my testimony is to present to the Commission my independent analysis of a just and reasonable ROE ceiling for RG&E applicable to CLCPA Eligible Projects recovered under Rate Schedule 19 and as provided in the NYISO OATT.

Q. How is your testimony organized?

A. I first summarize my conclusions and recommendations regarding a just and reasonable ROE ceiling for RG&E applicable to Rate Schedule 19. Next, I present the details of the technical studies I rely on in reaching my conclusions. Specifically, I apply the two-step DCF methodology and the CAPM, in accordance with the approach adopted in Opinion No. 569-A.[3] While the Commission's ROE methodology also includes the Risk Premium method, in light of the D.C. Circuit's recent decision to vacate Opinion No. 569-A based on its determination that the Commission had not adequately addressed earlier criticisms of this approach,[4] I did not include the Risk Premium study

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in New York is responsible to secure Commission approval of annual revenue requirements for any CLCPA Eligible Projects before any statewide cost allocation and recovery may occur pursuant to Rate Schedule 19.

[3] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569-A, 171 FERC ¶ 61,154 (2020) ("Opinion No. 569-A"), *vacated & remanded sub nom. MISO Transmission Owners v. FERC,* No. 16-1325 (D.C. Cir. 2022).

[4] *MISO Transmission Owners v. FERC,* No. 16-1325 (D.C. Cir. 2022).

as a primary method in arriving at an ROE ceiling applicable to CLCPA Eligible Projects.

Rather, I apply the Risk Premium method, along with the Expected Earnings approach, as an alternative benchmark that should be considered as an additional reference point in evaluating a just and reasonable ROE ceiling. Both methods are widely relied upon to evaluate investors' required ROE for regulated utilities.

Q. What ROE ceiling do you recommend for RG&E based on your analyses?

A. Based on the results of my analyses, I recommend an ROE ceiling of 10.87% for RG&E, which corresponds to the upper end of the middle third of the composite zone of reasonableness.

B. Regulatory Standards

Q. What is the role of the ROE in setting a utility's rates?

A. The ROE compensates shareholders for the use of their capital to finance the investment necessary 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. To be consistent with sound regulatory economics and the standards set forth by the U.S. Supreme Court in *Bluefield*[5] and *Hope*,[6] a utility's allowed ROE should be sufficient to: (1) fairly compensate capital invested in the utility; (2) enable the utility to offer a return adequate to attract new capital on reasonable terms; and (3) maintain the utility's financial integrity.

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[5] *Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm'n of W. Va*., 262 U.S. 679 (1923) ("*Bluefield*").

[6] *FPC v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("*Hope*").

Q. What ultimately governs the selection of a fair ROE?

A. The Commission has recognized that a reasonable point estimate ROE should be determined based on the facts specific to each proceeding.[7] That point estimate must also meet the standards mandated by the U.S. Supreme Court.[8] As the Commission has reaffirmed, "[t]he Commission's ultimate task is to ensure that the resulting ROE satisfies the requirements of Hope and Bluefield."[9] This determination requires the Commission to consider all of the available evidence and identify an ROE that is just, reasonable, and sufficient to support RG&E's need to attract capital and earn a competitive return and, at the same time, promote the Commission's goal of encouraging investment in electric utility infrastructure.

Q. How does the evaluation of a just and reasonable ROE relate to attracting private capital to utility infrastructure investment?

A. Under the competitive market paradigm that serves as the foundation for investment choices, investors' expected ROE is the key economic signal that allocates finite capital among competing opportunities. The allowed ROE and a reasonable opportunity to earn it are key to ensuring the flow of investment capital for new utility facilities. Apart from the impact that economic and market turmoil can have on the availability of capital, electric utility facilities compete with alternative investments. Utilities and

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[7] *See, e.g., Midwest Indep. Transmission Sys. Operator, Inc.*, 106 FERC ¶ 61,302 at P 8 (2004) ("*Midwest ISO*"), *aff'd in relevant part sub. nom., Pub. Serv. Comm'n of Ky. v. FERC*, 397 F.3d 1004 (D.C. Cir. 2005).

[8] *See, e.g., id.*, 106 FERC ¶ 61,302 at PP 13-14. The Commission observed that:

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

Id. at P 13 (quoting *Bluefield*, 262 U.S. at 693).

[9] *Coakley Mass. Attorney Gen. v. Bangor Hydro-Electric Co.*, Opinion No. 531, 147 FERC ¶ 61,234 at P 144 (2014) ("Opinion No. 531"), *order on paper hearing*, Opinion No. 531-A, 149 FERC ¶ 61,032 (2014), *order on reh'g*, Opinion No. 531-B, 150 FERC ¶ 61,165 (2015), *vacated & remanded sub nom. Emera Me. v. FERC*, 854 F.3d 9 (D.C. Cir. 2017).

their investors must commit huge sums to expand the transmission grid with new and upgraded facilities and additional funding will be provided only if investors anticipate an opportunity to earn a return that is sufficient to compensate for the associated risks and commensurate with returns available from alternative investments of comparable risk.

Q. Is RG&E faced with financial pressures associated with planned capital expenditures?

A. Yes. RG&E's plans call for significant incremental capital investment to address system needs, including approved CLCPA Eligible Projects. In light of these capital requirements and financial pressures, support for RG&E's financial integrity and flexibility will be instrumental in attracting the capital necessary to fund these requirements.

Q. Is it important that investors have confidence that the regulatory environment is stable and constructive?

A. Yes. Past challenges for the economy and capital markets highlight the benefits of a fair and balanced ROE, and any departure from the path of supporting utility financial strength through a sound and stable ROE policy would be extremely shortsighted. Uncertainty and volatility undermine investor confidence, and regulatory signals are the primary driver of investors' risk assessments for utilities. Securities analysts study FERC and state commission orders and regulatory policy statements closely to gauge the financial impact of regulatory actions and to advise investors accordingly. If regulatory actions instill confidence that the regulatory environment is supportive, investors will provide the capital necessary to support needed investment. Alternatively, absent a commitment by regulators to promote a sound and stable environment for utility investment and follow through on expectations for ROEs that are competitive with alternative investment opportunities, the flow of capital into utility infrastructure may not continue. As a result, the need for a stable and constructive

regulatory environment, as well as regulatory certainty in supporting utility infrastructure investment, is as relevant today as ever.

Q. What do you mean by "regulatory certainty?"

A. Regulatory certainty exists when investors have confidence that prior regulatory decisions are predictive of future regulatory actions under similar circumstances. As the Commission has stated, it "strives to provide regulatory certainty through consistent approaches and actions."[10] The Commission's policy efforts focus on constructive and predictable rate regulation and have attracted large commitments of private capital to expand transmission infrastructure, reduce congestion, improve reliability, and secure access to new generation, including wind and other renewable resources. Nevertheless, with respect to ROE, the Commission has recognized the potential disincentive to investment stemming from uncertainties in the administrative process for determining a just and reasonable ROE. In Order No. 679-A, the Commission concluded that "our hearing procedures for determining ROE can create uncertainty for investors," and noted that:

> Although our processes are designed to provide a just and reasonable return, we recognize that there can be significant uncertainty as to the ultimate return because of the uncertainties associated with administrative determinations (*e.g.*, selection of the proxy group, changes in growth rates, etc.) This can itself constitute a substantial disincentive to new investment.[11]

Having recognized the problems associated with uncertainty in its ROE policies, the Commission should do what it can to ensure that the end results of its ROE determinations support the regulatory certainty needed for transmission infrastructure investment.

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[10] FERC, *About FERC*, https://www.ferc.gov/what-ferc (last visited Feb. 25, 2023).

[11] *Promoting Transmission Investment Through Pricing Reform*, Order No. 679-A, 117 FERC ¶ 61,345 at P 69 (2006), *order on reh'g*, 119 FERC ¶ 61,062 (2007).

II. ROE CEILING FOR RG&E

Q. What is the purpose of this section of your testimony?

A. This section of my testimony presents my independent evaluation of a just and reasonable ROE ceiling for RG&E. This section summarizes ROE policies at the Commission and examines conditions in the capital markets and the general economy. I present the results of the two-step DCF and CAPM approaches, as well as my conclusion that an ROE ceiling of 10.87% is warranted for RG&E.

A. ROE Methodology

Q. Please describe the ROE framework established by Opinion No. 569-A.

A. In Opinion No. 569-A, the Commission relied on three financial models to establish a just and reasonable ROE for the MISO TOs: (1) a two-step DCF model, (2) the CAPM, and (3) the Risk Premium approach. Under the methodology adopted in Opinion No. 569-A, the composite zone of reasonableness is computed by averaging the low and high boundaries of each model.[12] To administer Section 206 of the FPA, the Commission stratified the composite zone of reasonableness into three equal parts, which it characterized as "below average risk," "average risk," and "above average risk" ranges.[13] For a utility of average risk, the existing ROE is presumptively just and reasonable if it falls within the middle third of the composite zone. With the exception of minor corrections to certain inputs to the Risk Premium approach, the Commission affirmed these findings in Opinion No. 569-B.

More recently, on August 9, 2022, the D.C. Circuit vacated the ROE framework established in Opinion No. 569-A.[14] Specifically, the court found that the Commission

[12] Because the Risk Premium approach produces a single point estimate and not a range, the Commission imputed a range around the point estimate based on the average spread between the low and high boundaries of the two-step DCF and CAPM ranges.

[13] Opinion No. 569-A at P 194.

[14] *MISO Transmission Owners v. FERC*, No. 16-1325 (D.C. Cir. 2022).

had failed to offer a reasoned explanation for its decision to reintroduce the Risk Premium model in Opinion No. 569-A after initially rejecting it in Opinion No. 569. Ruling that the Commission's reliance on the Risk Premium approach was arbitrary and capricious, the D.C. Circuit vacated the underlying orders.

Q. Did the D.C. Circuit take issue with any other aspects of the Commission's ROE framework?

A. No. While a variety of challenges were raised to the two-step DCF and CAPM methodologies adopted by the Commission in Opinion No. 569-A, the court concluded that these arguments were unpersuasive.[15] Similarly, the D.C. Circuit also rejected an array of complaints to the Commission's policy that establishes presumptively reasonable ranges for purposes of administering FPA Section 206 by dividing the overall composite ROE range of reasonableness into thirds.

Q. In light of the D.C. Circuit's recent decision vacating Opinion No. 569-A, how do you evaluate the ROE ceiling for RG&E?

A. My analysis relies on the results of the two-step DCF and CAPM approaches applied by the Commission in Opinion No. 569-A and reviewed by the D.C. Circuit in its August 2022 decision. Similarly, my evaluation of a just and reasonable ROE ceiling for RG&E is premised on the upper end of the middle third of the composite zone of reasonableness. This approach is consistent with the presumptively reasonable ROE range for an average risk utility established by the Commission in Opinion No. 569-A and affirmed by the D.C. Circuit.

[15] *Id.*

Q. You do not rely on the results of the Risk Premium or Expected Earnings approaches to establish your recommended ceiling ROE. Do you agree with the criticisms of these approaches presented in Opinion Nos. 569 and 569-A?

A. No. While the D.C. Circuit concluded that Opinion No. 569-A did not offer adequate explanation for the Commission's decision to reinstate the Risk Premium method after rejecting it in Opinion No. 569, the Risk Premium method is a widely accepted and sound approach to estimating the cost of equity. It would be wholly appropriate for the Commission to retain the Risk Premium model and simply provide the explanation the court noted was lacking, based on record evidence in that proceeding.

Similarly, the Expected Earnings approach serves as a direct measure of the expected returns on equity that investors associate with companies of comparable risk and provides a meaningful guide to the return the utility should be expected to earn on its book equity investment. Given that rates are established on the basis of the book value of a utility's investment, this is a relevant measure of the ROE that is consistent with regulatory standards of comparable earnings and capital attraction established in *Hope* and *Bluefield*.

While an exhaustive defense of the Risk Premium and Expected Earnings approaches is beyond the scope of my testimony here and is not essential to evaluate a ceiling ROE for RG&E, I have included the results of these methods as additional ROE benchmarks that support the reasonableness of my recommendation.

B. Outlook for Capital Costs

Q. Please summarize current economic and capital market conditions.

A. 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.[16] Meanwhile, indicators of employment remained stable, with the national unemployment rate declining slightly from the previous month to 3.4% in January 2023.[17]

The underlying risk and price pressures associated with the COVID-19 pandemic were overshadowed by Russia's invasion of Ukraine on February 24, 2022. The dramatic increase in geopolitical risks has 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 economy and dramatic rise in inflation led to sharp declines in global equity markets as investors reacted to the related exposures. S&P noted that these uncertainties "could have profound effects on macroeconomic prospects and credit conditions around the world,"[18] and more recently 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.[19]

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

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

[17] https://www.bls.gov/news.release/pdf/empsit.nr0.htm (last visited Feb. 6, 2023).

[18] S&P Global Ratings, *Russia-Ukraine Military Conflict: Key takeaways From Out Articles,* Comments (Mar. 8, 2022).

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

significantly above the 2% longer-run benchmark cited by the Federal Reserve. In June 2022, CPI inflation peaked at its highest level since November 1981. Since then, CPI inflation has moderated somewhat to 6.5% in December 2022.[20] The so-called "core" price index, which excludes more volatile energy and food costs, rose at an annual rate of 5.7% in December 2022. Similarly, PCE inflation rose 5.5% in November 2022, or 5.1% after excluding more volatile food and energy costs.[21] 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.[22]

Q. How have these developments impacted the Federal Reserve's monetary policies?

A. As of its policy meeting in January 2023, the FOMC has responded to concerns over accelerating inflation by raising the benchmark range for the federal funds rate by a total of 4.50% since March 2022.[23] Chair Powell noted that:

> Today, the FOMC raised our policy interest rate by 25 basis points. We continue to anticipate that ongoing increases will be appropriate in order to attain a stance of monetary policy that is sufficiently restrictive to return inflation to 2 percent over time. In addition, we are continuing the process of significantly reducing the size of our balance sheet. Restoring price stability will likely require maintaining a restrictive stance for some time. . . . The historical record strongly cautions against prematurely loosening policy.[24]

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[20] https://www.bls.gov/news.release/pdf/cpi.pdf (last visited Jan. 24, 2023).

[21] https://www.bea.gov/news/2022/personal-income-and-outlays-july-2022 (last visited Oct. 28, 2022).

[22] 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).

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

[24] https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20230201.pdf.

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.[25]

Q. What impact do rising inflation expectations have on the return that equity investors require from electric utilities, including RG&E?

A. 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:

> The four most fundamental factors affecting the cost of money are (1) production opportunities, (2) time preferences for consumption, (3) risk, and (4) inflation.[26]

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.

Q. Have these developments impacted the risks faced by utilities and their investors?

A. Yes. Concerns over weakening credit quality prompted S&P to revise its outlook for the regulated utility industry from "stable" to "negative."[27] 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.[28]

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

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

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

[28] 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).

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."[29] S&P subsequently affirmed its negative outlook for investor-owned utilities, noting that "risk will continue to pressure the credit quality of the industry in 2022."[30] 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.[31]

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."[32] In affirming its negative outlook on the industry, S&P more recently cited weak financial measures, rising 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."[33]

Q. Do changes in utility company beta values corroborate an increase in industry risk?

A. Yes. Beta measures a stock's price volatility relative to the overall market and reflects the tendency of a stock's price to follow changes in the market. The investment

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

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

[31] *Id*.

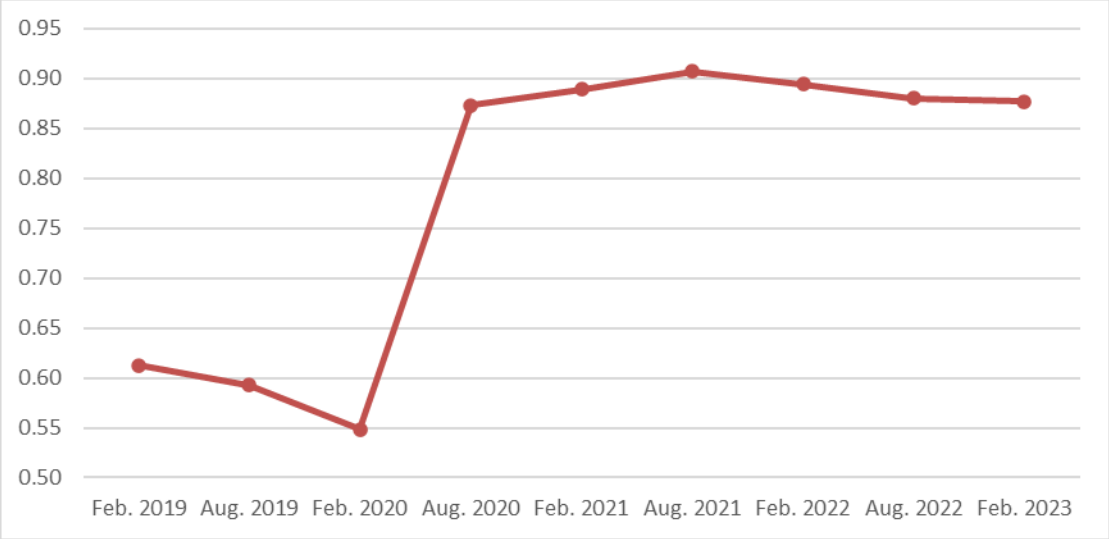
[32] Moody's Investors Service, *Regulated Gas Utilities--US, 2023 outlook negative due to higher natural gas prices, inflation and rising interest rates,* Outlook (Nov. 10, 2022).

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

community relies on beta as an important guide to investors' risk perceptions. 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. Generally, a higher beta means the market perceives the stock to be riskier than a stock with a lower beta.

The significant shift in pre- and post-pandemic beta values for electric utilities is illustrated in Figure RG&E-1 below. As illustrated there, the average beta value for the electric utilities covered by Value Line 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 higher risk of electric utility common stocks.

FIGURE RG&E-1
ELECTRIC UTILITY BETA VALUES



Q. Have increased risks and higher inflation resulted in higher capital costs?

A. Yes. While the cost of equity is unobservable, the yields on long-term bonds provide a widely referenced benchmark for the direction of capital costs, including required returns on common stocks. Table RG&E-1 below compares the average yields on

Treasury securities and Baa-rated public utility bonds during 2021 with those required in January 2023.

TABLE RG&E-1
BOND YIELD TRENDS

Series	January 2023	2021	Change (bps)
10-Year Treasury Bonds	3.53%	1.44%	209
30-Year Treasury Bonds	3.66%	2.05%	161
Baa Utility Bonds	5.49%	3.35%	214

Source: https://fred.stlouisfed.org/series/GS30; Moody's Credit Trends.

As shown above, trends in bond yields since 2021 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 in January 2023 exceed 2021 levels by more than 210 basis points.

Q. Would it be reasonable to disregard the implications of current capital market conditions in evaluating a just and reasonable ROE ceiling for RG&E?

A. No. It would not be reasonable to disregard current capital market conditions in this context. They reflect the reality of the situation in which RG&E 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 RG&E's risks will weaken its financial integrity, while hampering the Company's ability to attract necessary capital.

C. Recommended ROE Ceiling for RG&E

Q. Please summarize the results of your analysis.

A. The ROE estimates produced by the two-step DCF and CAPM approaches for the twenty-four risk-comparable electric utilities in the proxy group ("Electric Group") described subsequently in my testimony are presented in the upper panel on Exhibit No. RG&E-103 and summarized in Table RG&E-2 below.[34]

TABLE RG&E-2
SUMMARY OF RESULTS

		Middle Third	
Method	**Range**	**Lower**	**Upper**
Two-Step DCF	8.25% -- 11.17%	9.23% --	10.20%
CAPM			
IBES	8.64% -- 11.79%	9.69% --	10.74%
Value Line	9.88% -- 13.60%	11.12% --	12.36%
Average	9.26% -- 12.70%	10.41% --	11.55%
Composite ROE	**8.76% -- 11.93%**	**9.82% --**	**10.87%**

Q. Based on these findings, what is your recommended ROE ceiling for RG&E?

A. RG&E's credit ratings were used to develop the comparable risk bands used to identify the proxy group under the Commission's screening criteria. Accordingly, the middle third of the composite zone, which corresponds to a utility of average risk, represents the presumptively reasonable ROE range for the Company. I recommend an ROE ceiling for RG&E at the top of this presumptively reasonable range, or 10.87%.

[34] While I did not make an explicit adjustment to the results of my quantitative methods to include an adjustment for flotation costs, this is another legitimate consideration that supports the reasonableness of my evaluation of a just and reasonable ROE for RG&E in this proceeding.

Q. Is this ceiling analogous to the ROE cap that the Commission has previously referenced in evaluating the reasonableness of ROE incentive adders?

A. No. The ROE ceiling that I am proposing for CLCPA Eligible Projects under Rate Schedule 19 considers only the middle one-third of the composite zone, which is the presumptively just and reasonable range for a utility of average risk. In evaluating a utility's total ROE inclusive of incentives, the Commission's established practice is to reference the top of the composite ROE zone of reasonableness,[35] which would be 11.93% under the methodology summarized in Table RG&E-2.

Q. Can a mechanical application of any specific ROE methodology be expected to produce reasonable outcomes in every case and under all circumstances?

A. No. The Commission has previously recognized that a just and reasonable ROE should be determined based on the facts specific to each proceeding and noted, "[a]s an initial matter, we emphasize that the primary question to be considered here is not what constitutes the best overall method for determining ROE generically."[36] Rather, the question involves a determination of what ROE is most appropriate in each specific case.[37]

As the Commission has recognized, this evaluation should not be based on the mechanical application of a single quantitative methodology (or, for that matter, a mechanical application of a series of models).[38] No single financial model predicts the required ROE with absolute precision and all financial models are based on a series of assumptions that are affected differently by market conditions.

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[35] Order No. 679, 116 FERC ¶ 61,057 at PP 2, 91-93.

[36] *Midwest ISO*, 106 FERC ¶ 61,302 at P 8.

[37] *Id.* This is consistent with *Emera Maine*, which noted that "[w]hether a rate . . . is unlawful depends on the particular circumstances of the case." *Emera Maine*, 854 F.3d at 23.

[38] *See, e.g.*, Opinion No. 569-A at P 43.

Investors inform their investment decisions by considering multiple methodologies, as do financial analysts. These include the DCF, CAPM, and Risk Premium models, as well as other methods (*e.g.*, the Expected Earnings approach). As the Commission has recognized, all models, including the two-step DCF model, have flaws. Accordingly, in addition to the two-step DCF and CAPM approaches, my testimony presents the results of alternative ROE benchmarks. Specifically, I apply the Risk Premium and Expected Earnings approaches.[39]

Q. What do these alternative benchmarks indicate with respect to a fair ROE ceiling for RG&E in this case?

A. The results of incorporating the Risk Premium and Expected Earnings approaches, along with the results of the DCF and CAPM are presented in the lower panel on Exhibit No. RG&E-103 and summarized in Table RG&E-3 below.

TABLE RG&E-3
SUMMARY OF RESULTS – ROE BENCHMARKS

		Middle Third	
Method	**Range**	**Lower**	**Upper**
Two-Step DCF	8.25% -- 11.17%	9.23% -- 10.20%	
CAPM			
IBES	8.64% -- 11.79%	9.69% -- 10.74%	
Value Line	9.88% -- 13.60%	11.12% -- 12.36%	
Average	9.26% -- 12.70%	10.41% -- 11.55%	
Risk Premium	8.75% -- 11.93%	9.81% -- 10.87%	
Expected Earnings	8.66% -- 15.22%	10.85% -- 13.03%	
Composite ROE	**8.91% -- 12.73%**	**10.18% -- 11.46%**	

[39] While my examination of ROE benchmarks in this testimony is limited to the Risk Premium and Expected Earnings approaches, alternative methodologies such as the constant growth DCF method and reference to returns for non-regulated firms can also provide meaningful guidance in assessing investors' required cost of equity.

As shown above, including the Risk Premium and Expected Earnings benchmarks produces a presumptively reasonable ROE zone of 10.18% to 11.46% for an average-risk utility. Accordingly, reference to the results of the Risk Premium and Expected Earnings approaches provides further support for the reasonableness of my recommended ROE ceiling for RG&E of 10.87%.

III. APPLICATION OF FINANCIAL MODELS

Q. What is the purpose of this section of your testimony?

A. This section describes how I identify the proxy group of publicly traded electric utilities used to apply the financial models described in my testimony. I then explain my application of the two-step DCF and CAPM methods.

A. Development and Selection of the Proxy Group

Q. How do you implement quantitative methods to estimate the cost of common equity for RG&E?

A. Application of quantitative methods to estimate the cost of common equity requires observable capital market data, such as stock prices and beta values, that is not available for RG&E. 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 alternative quantitative methods to a proxy group of publicly traded companies that investors regard as risk comparable. The results of the analysis for the sample of companies are relied upon to establish a range of reasonableness for the cost of equity for the specific company at issue.

Q. What specific criteria do you initially examine to identify a proxy group of regulated electric utilities?

A. Consistent with the Commission's accepted approach, I begin with the following criteria to identify a proxy group of electric utilities:

1. Companies that are included in the Electric Utility Industry groups compiled by Value Line.[40]
2. Electric utilities that paid common dividends over the last six months and have not announced a dividend cut since that time.
3. Electric utilities with no ongoing involvement in a major merger or acquisition that would distort quantitative results.

In addition, the Commission has determined that credit ratings from both major agencies—Moody's and S&P—should be considered independently as screening criteria when evaluating comparable risk. In evaluating credit ratings to identify a proxy group of utilities with comparable risks, the Commission has adopted a "comparable risk band," interpreted as one "notch" higher or lower than the corporate credit ratings of the utility at issue and within the investment grade ratings scale.

Q. What corporate credit ratings have been assigned to RG&E by Moody's and S&P?

A. RG&E has been assigned an issuer credit rating of Baa1 by Moody's and a corporate credit rating of A- by S&P.

Q. What proxy group screening criteria are indicated by RG&E's credit ratings?

A. Applying the one notch higher or lower band under the Commission's guidelines results in screening criteria of Baa2 to A3 based on Moody's credit ratings and BBB+ to A when referencing S&P's rating for RG&E.

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[40] In addition to the companies included in Value Line's electric utility industry groups, I also considered Algonquin Power & Utilities Company and Emera, Inc., which would both be regarded as comparable utility investment opportunities by investors. Neither of these companies met my required screening criteria.

Q. Please identify the proxy group used in your analyses.

A. As shown on Exhibit No. RG&E-102, applying the criteria outlined above results in a proxy group of twenty-four utilities, which I refer to as the "Electric Group."

B. Two-Step DCF Model

Q. What market valuation process underlies DCF models?

A. 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 appreciation) that will be received while holding the stock, discounted at investors' required rate of return. Thus, the cost of equity is the discount rate that equates the current price of a share of stock with the present value of all expected cash flows from the stock.

Q. What form of the DCF model is customarily used to estimate the cost of equity?

A. Rather than developing annual estimates of cash flows into perpetuity, the DCF model can be simplified to a "constant growth" form:[41]

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

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:

[41] The constant growth DCF model is dependent on a number of strict assumptions, which in practice are never entirely 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 of the above extend to infinity. (As discussed in the text below, the Commission's two-stage DCF model also depends on these assumptions, with the sole exception of the constant earnings growth rate.) Nevertheless, the constant growth 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 stock price appreciation.

Q. What is the distinction between the two-step DCF method for electric utilities and the constant growth DCF model outlined above?

A. The Commission's two-step DCF method for electric utilities assumes that investors differentiate between near-term growth forecasts, such as the EPS growth rates published by securities analysts, and some notion of longer-term growth extending into the distant future. Under the Commission's two-step DCF method, the first growth rate is represented by analysts' consensus EPS growth projections specific to each individual utility in the proxy group, while the second growth rate is based on long-term forecasts of growth in nominal GDP. Based on this assumption of disparate growth expectations, the two-step DCF method employs two separate growth rates for each company, which are weighted to arrive at a single value for the "*g*" component.[42]

Q. How do you determine the dividend yield for the utilities in your proxy group?

A. An average dividend yield is developed for each utility in the Electric Group during the six months from August 2022 through January 2023. This calculation is made by dividing the indicated dividend in each month by the corresponding average of the monthly low and high stock prices. The resulting six-month average historical dividend yields are presented on page 1 of Exhibit No. RG&E-104.

[42] While I apply the Commission's two-step DCF method, the assumptions about investor expectations and reliance on GDP growth that underly this approach are not substantiated by evidence.

Q. What growth rate do you use to adjust this historical dividend yield?

A. Consistent with the Commission's guidance, I adjust the historical dividend yield using only the analysts' EPS growth estimate.[43]

Q. What is the source of the analysts' consensus EPS growth rates used in your application of the Commission's two-step DCF method?

A. I obtain IBES earnings growth rates for the utilities in the Electric Group from *Yahoo! Finance*.

Q. How do you arrive at your projected growth rate in nominal GDP, representing the second stage of the Commission's DCF model?

A. I rely on long-term projections published by IHS Markit and the EIA, as well as the Social Security Administration forecast over the next 50 years. This resulted in an average GDP growth rate of 4.17%. The calculation of the long-term growth rate in nominal GDP used in my application of the Commission's two-step DCF model is presented on page 2 of Exhibit No. RG&E-104.

Q. What weighting do you assign these respective growth rates to arrive at the single *"g"* component of the two-step DCF model?

A. Following the practice adopted in Opinion No. 569-A, I weight the individual analysts' EPS growth rates by 80% and the GDP growth projection by 20% to compute a single, two-step growth rate for each of the utilities in the proxy group.

Q. Where do you present the results of your two-step DCF analyses?

A. After combining the dividend yields and the weighted average of the respective analysts' projections and GDP growth forecast for each utility, the resulting cost of common equity estimates for the Electric Group are shown on page 1 of Exhibit No. RG&E-104.

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[43] *Ass'n of Buss. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569, 169 FERC ¶ 61,129 at P 98 (2019) ("Opinion No. 569").

Q. In evaluating the results of the DCF model, is it appropriate to eliminate illogical cost of equity estimates?

A. Yes. Consistent with Opinion No. 569-A, in applying quantitative methods to estimate the cost of equity, it is essential that the resulting values pass fundamental tests of reasonableness and economic logic. Accordingly, DCF estimates that are implausibly low or high should be eliminated when evaluating the results of this method.

Q. What low-end threshold has the Commission adopted?

A. Starting with the average yield on Baa-rated public utility bonds for the six-month study period, the Commission adds an increment equal to 20% of the market risk premium used to apply the CAPM.[44] Combining an average yield on Baa utility bonds of 5.66% for the six months ending January 2023 with 20% of the 7.79% average CAPM market risk premium[45] results in a low-end threshold of 7.22%.

Q. Do you exclude any low-end DCF estimates from your analyses?

A. Yes. As shown on page 1 of Exhibit No. RG&E-104, I exclude seven DCF values ranging from 2.31% to 7.10%, which fall below the Commission's low-end threshold. The continued retention of low-end values in the 8% range—which are far below any credible estimate of the cost of equity—continues to impart a downward bias to the two-step DCF results.

Q. What is the Commission's current position with respect to evaluating DCF values at the high end of the range?

A. With respect to the evaluation of individual cost of equity estimates, the Commission has established a high-end test based on 200% of the median value from each financial model before eliminating estimates at the low or high end of the range.[46]

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[44] Opinion No. 569 at P 387; Opinion No. 569-A at P 161.

[45] Computed as the average of the 6.96% IBES-based CAPM market risk premium (Exhibit No. RG&E-105) and 8.61% Value Line-based CAPM market risk premium (Exhibit No. RG&E-107).

[46] Opinion No. 569-A at P 154.

Q. What is your conclusion with respect to an evaluation of two-step DCF values at the high end of the range?

A. As shown on page 1 of Exhibit No. RG&E-104, the upper end of the two-step DCF results for the Electric Group is set by a cost of equity estimate of 18.57%. This value exceeds the Commission's high-end test of 18.10% and is excluded.

Q. What other consideration has the Commission raised in evaluating cost of equity estimates?

A. The Commission has also suggested that cost of equity estimates should be subject to a "natural break" analysis, based on the difference between individual values and the next-lowest or next-highest estimate.[47]

Q. Do you agree that the difference between individual cost of equity estimates can be used as a gauge of reasonableness?

A. No. The dispersion between a particular cost of equity result and the next lowest value provides no relevant information in evaluating the reasonableness of estimates at the upper end of the range. The key fallacy underlying the natural break analysis is the implicit assumption that estimating the cost of equity involves a process of sampling. On the contrary, through application of proxy group criteria, the Commission has identified all of the utilities deemed to be of comparable risk. In other words, the array of cost of equity estimates produced by the ROE analyses represents the entire population, not a sample of the population. We are not drawing 20 colored marbles from an urn containing hundreds and seeking to make inferences regarding the makeup of the unobserved remainder. Rather, we are analyzing all of the marbles (or all of the relevant, comparable-risk companies). As a result, the dispersion of individual values is not a valid test of how well a specific cost of equity estimate reflects investors' expectations and required returns.

[47] Opinion No. 569 at P 395; Opinion No. 569-A at P 153.

If there is any statistical observation to be made regarding the cost of equity estimates produced by any single financial model, it is that the relatively small size of the population (the proxy group) makes it more likely that there will be a "break" in the data set relative to an analysis for a larger population. That is not evidence of a flaw in the results. Rather, it is a predictable function of the size of the proxy group of comparable-risk utilities. Trimming so-called "outliers" on this basis has the unreasonable effect of arbitrarily making that small population even smaller and thereby skewing the results.

Moreover, the goal in evaluating the results of financial models, such as the DCF and CAPM approaches, is not to identify "outliers," it is to remove estimates that are clearly illogical for purposes of identifying the "broad range of potentially lawful ROEs" that constitutes the zone of reasonableness. The identification of clearly illogical results should be a case-specific determination relying on the specific evidence at hand. The notion of an "outlier" in the context of statistics and sampling theory is an entirely separate concept from the evaluation of cost of equity estimates for the population of comparable risk utilities. Apart from the fact that the arithmetic difference between two individual cost of equity estimates does not provide a sound basis to evaluate the economic validity of either value, the magnitude of the "break" that might be suggestive of an "outlier" is arbitrary and without empirical foundation.

Q. This notwithstanding, would there be any arguable basis to exclude the 11.17% high-end value from your two-step DCF analysis based on a natural break analysis?

A. No. The Commission has clarified that in applying a natural break analysis to evaluate results at the high end of the range, the purpose is "to screen out companies whose growth rates are unsustainably high and therefore fail a threshold test of economic

logic."[48] As shown on page 1 of Exhibit No. RG&E-104, the IBES growth rate underling the 11.17% DCF estimate is 10.21%. This falls significantly below other IBES growth rates that the Commission has previously accepted as reasonable.[49]

Moreover, the "break" between the 11.17% value and the next lowest result is 55 basis points, which is not materially higher than the dispersion between other observations in the array of two-step DCF estimates. Thus, not only is a natural break analysis misguided and lacking any objective basis, a differential of 55 basis points provides no evidence that the 11.17% value at the top end of the two-step DCF range is "truly irrational or anomalously high."[50] Beyond this, as I noted earlier, remaining low-end values in the 8% range are assuredly far below investors' required rate of return.

Q. What is the range resulting from your two-step DCF analysis?

A. As shown on page 1 of Exhibit No. RG&E-104, the two-step DCF analysis for the Electric Group results in a range of 8.25% to 11.17%.

C. Capital Asset Pricing Model

Q. Please describe the CAPM.

A. The CAPM approach is generally 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. 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

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[48] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569-B, 173 FERC ¶ 61,159 (2020) ("Opinion No. 569-B") at P 79, *vacated & remanded sub nom. MISO Transmission Owners v. FERC*, No. 16-1325 (D.C. Cir. 2022).

[49] For example, the Commission's DCF results in Docket No. EL14-12 incorporated an IBES growth rate of 11.66%. Opinion No. 569-A at p. 125 ("MISO I DCF Results").

[50] Opinion No. 569-A at P 154.

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 1.00, while stocks that tend to move more than the market have betas greater than 1.00. 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
B_j = beta, or systematic risk, for stock j.

Like the DCF model, the CAPM is an *ex-ante*, or forward-looking, model based on expectations of the future. As a result, in order 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.

Q. What market rate of return was adopted by the Commission to apply the CAPM in Opinion No. 569-A?

A. Under the approach considered by the Commission in Opinion No. 569-A, the expected market rate of return was estimated by conducting a DCF analysis on the dividend paying firms in the S&P 500.[51]

Q. What beta values did the commission adopt to apply the CAPM in Opinion No. 569-A?

A. The Commission relied on the beta values reported by Value Line, which, in my experience, is the most widely referenced source for beta in regulatory proceedings and is widely relied upon by investors. 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

[51] Opinion No. 569-A at P 210.

market index, and they are adjusted for the regression tendency of betas to converge to 1.00.[52]

The fact that investors rely on Value Line betas in evaluating expected returns for utility common stocks provides strong support for this approach.

Q. The Commission has suggested that it may be theoretically incorrect to apply the CAPM using Value Line betas and a market return based on the S&P 500.[53] What is the crux of this argument?

A. Opinion No. 569-A stated that there is an "imperfect correspondence" between a market risk premium based on the dividend-paying firms in the S&P 500 and Value Line betas, which are determined based on a comparison of each stock's volatility relative to the stocks in the NYSE, rather than the S&P 500. While observing that there is substantial evidence that investors rely on Value Line betas,[54] in its decision in *Mystic*, the Commission accepted Trial Staff's proposal to use Bloomberg-based, alternative betas derived from the returns to the S&P 500 Index.[55]

Q. Do you agree that there is a lack of correspondence between a market return based on the S&P 500 and Value Line beta values?

A. No. Under the CAPM, the volatility at issue theoretically relates the market price of the stock with the market price of every other possible investment opportunity in the "market," including collectible cars and gold bullion. Just as it is not possible to precisely define investors' growth expectations when applying the DCF model, the forward-looking market return and beta values are unobservable and must be estimated. Application of the DCF approach to the dividend-paying firms in the S&P 500 provides a sound proxy for investors' expected return on the "market." Similarly, reference to

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

[53] Opinion No. 569-A at P 75.

[54] *See, e.g.,* Opinion No. 569-A at P 61.

[55] *Constellation Mystic Power, LLC,* 176 FERC ¶ 61,019 at PP 77, 85 (2021) ("*Mystic*"). *See also, DATC Path 15, LLC,* 177 FERC ¶ 61,115 at P 111 (2021) ("*DATC*").

Value Line's published beta values offer an objective proxy for an unobservable, forward-looking beta. There is no "mismatch," as Opinion No. 569-A and *Mystic* seem to imply.

The contention that there is an "imperfect correspondence" between a market return that references the S&P 500 and beta values estimated against the NYSE is further disproved by reference to studies in the financial research. *Marston & Harris* noted that it derived an estimate of the market rate of return for a sample of approximately 400 companies selected from the S&P 500, while the beta values used in the study were calculated "against . . . all NYSE securities."[56] This approach, used by recognized researchers in a peer-reviewed journal sponsored by the Eastern Finance Association, mirrors the CAPM approach adopted in Opinion No. 569-A. Similarly, in applying a market rate of return based on the dividend paying firms in the S&P 500, the Staff of the Illinois Commerce Commission also relied on published betas from Value Line.[57]

Q. Is there other evidence that undercuts the argument of a lack of correspondence between a market return for the S&P 500 and Value Line betas?

A. Yes. Beta measures the variability of the price of a common stock relative to the broader market. While it is possible to calculate this measure of relative price volatility using alternative market benchmarks (*i.e.*, NYSE or S&P 500), to the extent that movements in market indices are driven by the stock prices of very large capitalization companies and thus move in tandem, the beta values using similar time periods would be indistinguishable. If there is no systemic difference in the relative movements of the NYSE and the S&P 500, then there is no basis to suggest that a beta calculated

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[56] Felicia Marston and Robert S. Harris, *Risk and Return: A Revisit Using Expected Returns*, Fin. Review (Feb. 1993) ("*Marston & Harris*"). Value Line betas are also derived based on weekly percentage changes in the New York Stock Exchange Average.

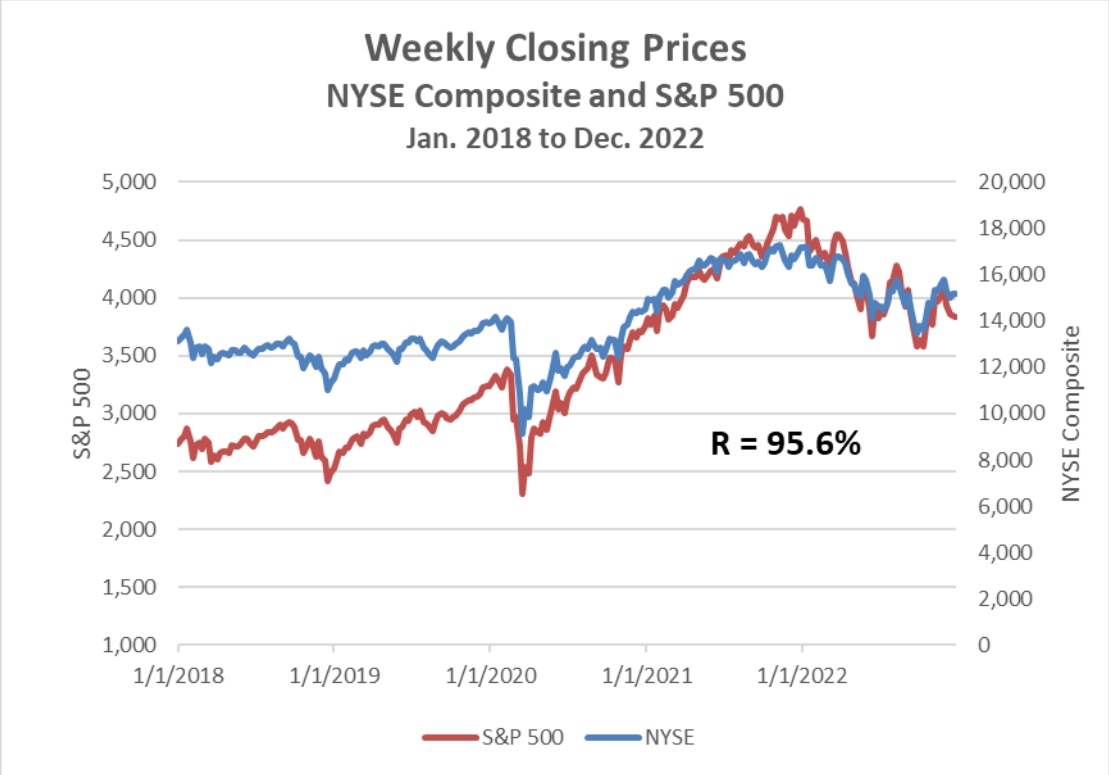
[57] *Direct Testimony of Rochelle Langfeldt*, Illinois Commerce Commission, Docket No. 01-0432 (2001) at 27 (citing "[t]he average Value Line adjusted beta for the Electric sample.").

against the NYSE would not apply equally to a market rate of return estimated by reference to the S&P 500.

The degree to which movements in the NYSE and S&P 500 are synchronized can be tested through correlation analysis. The correlation coefficient measures the degree that two variables move together. A correlation coefficient of 0.0 would indicate that there is no consistent co-movement between two variables, while a correlation coefficient of 1.0 would indicate perfect correlation, *i.e.*, that 100% of the change in one variable is reflected in the other variable.

Figure RG&E-2 displays the weekly percentage changes in the NYSE and the S&P 500 over the five-year period ending December 31, 2022:

FIGURE RG&E-2



As indicated on the chart, this analysis results in a correlation coefficient of 0.956, meaning that weekly changes for the NYSE are almost perfectly matched by similar movements in the S&P 500. The high degree of correlation between movements in the

NYSE and movements in the S&P 500 undercuts any notion of a "mismatch" between Value Line betas and a market return predicated on a subset of the S&P 500.

Q. Are there other factors that also weigh in favor of continued reference to Value Line betas, versus those derived from Bloomberg?

A. Yes. Value Line is recognized as being the most widely available source of investment information to investors, and citations in many textbooks and other sources support its usefulness as a guide to investors' expectations.[58] Value Line is available at nominal prices for paper subscription or internet access, as well as being freely available to investors in libraries and through many brokerage offices. Importantly, the beta values reported by Value Line are updated on a weekly basis and calculated using a consistent methodology.

This contrasts with Bloomberg-derived betas, which are dependent on criteria specified by each individual user and subject to the potential for subjective manipulation to produce a desired end-result. Meanwhile, Bloomberg is available only to a select subset of investors that can afford substantial annual subscription fees to obtain the proprietary terminal required to access Bloomberg data. The administrative benefits associated with reliance on beta values from Value Line, including a consistent methodology by an independent third-party and immunity to selective changes in assumptions, support continued reference to Value Line betas in applying the CAPM approach.

Q. How then do you calculate the market rate of return required to apply the CAPM?

A. I use the same approach considered by the Commission in Opinion No. 569-A.[59] In order to capture the expectations of today's investors in current capital markets, the

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[58] *See, e.g.*, Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 71 ("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.").

[59] Opinion No. 569-A at P 210.

expected market rate of return is estimated by conducting a DCF analysis on the dividend paying firms in the S&P 500.

I obtain the dividend yield for each company from Value Line and the IBES EPS growth projections for each firm published by *Yahoo! Finance.*[60] As shown on Exhibit No. RG&E-106, after removing companies with growth rates that were negative or greater than 20%,[61] the weighted average of the projections for the individual firms implies an average growth rate of 8.63%. Combining this average growth rate with a weighted average dividend yield of 2.01% results in a current cost of common equity estimate for the market as a whole (R_m) of 10.64%.

Q. Does the Commission also recognize that it is appropriate to consider Value Line growth rates in developing the market risk premium used to apply the CAPM?

A. Yes. The Commission has recognized that "diversifying data sources may better reflect the data sources that investors consider in making investment decisions."[62] Opinion No. 569-A concluded that Value Line growth rates "incorporate the input of multiple analysts" and that Value Line's growth rates "are updated on a more predictable basis," which "provides certainty about updates to key model inputs."[63]

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[60] While I rely on IBES growth rates for present purposes, the Commission has also correctly recognized that it is appropriate to consider earnings growth rates from Value Line when evaluating the market rate of return. Opinion No. 569-A t PP 78-83.

[61] My use of the growth rate screen adopted in Opinion No. 569-A should not be considered an endorsement of this approach, which is based on an incorrect notion that using the DCF model to estimate the market return requires an assumption of constant growth for each of the specific firms in the S&P 500. The S&P 500 includes a broad sample of companies at all stages of growth, and the use of all of those companies to estimate the required return on common stocks reasonably reflects investors' consensus expectations about the S&P 500 as a whole.

[62] Opinion No. 569-A at P 78.

[63] *Id.* at PP 80, 81.

Q. Do you agree with the Commission's proposal to consider Value Line's EPS growth projections in addition to data from IBES?

A. Yes. Value Line's growth projections provide a meaningful guide to investors' expectations. As noted earlier, Value Line is recognized as being the most widely available source of investment information that shapes the expectations of investors.[64] Value Line's detailed quarterly reports provide extensive analyses that underpin its individual EPS growth rate projections. As a result, Value Line EPS growth rates are immune from any potential errors involved in the compilation of survey data and avoid uncertainties as to the veracity of the assumptions underlying the projected values.

As the Commission noted, the reports supporting Value Line's projected EPS growth rates are updated on a scheduled basis, which avoids the potential problem of "staleness" of the underlying data. Moreover, Value Line's sole business is to provide independent and unbiased investment guidance to its subscribers. Because Value Line does not engage in securities trading or investment banking activities, there is no risk of conflicts of interest that could arguably influence growth estimates.

Evaluating IBES growth rates alongside qualified alternatives acknowledges the importance of using multiple data sources to estimate investors' growth expectations. For example, *New Regulatory Finance* endorsed a similar approach, noting that one way to assess the concern that consensus analysts' forecasts such as IBES may be biased "is to incorporate into the analysis the growth forecasts of

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[64] *See, e.g.*, Opinion No. 531 at P 102 ("We accept the *Value Line* industry classifications because *Value Line* is a widely-followed, independent investor service . . . ."); *Kern River Gas Transmission Co.*, Opinion No. 486-C, 129 FERC ¶ 61,240, at PP 50, 91 (2009) ("Because Value Line is a publication relied on by many investors, its statements concerning the relative risks of different energy-related investments is highly probative of the views of investors generally.") (prior and subsequent history omitted); *Sw. Pub. Serv. Co.*, 83 FERC ¶ 61,138, at 61,636 n.63 (1998) ("The Commission did not, however, intend to preclude consideration of contemporaneous growth estimates made by the various investor services companies (*e.g.*, Value Line, Zack's Investment Research, Inc. (Zack's), Institutional Brokers Estimate System (IBES)), as investors rely on these estimates in their decision-making process.").

independent research firms, such as Value Line, in addition to the analyst consensus forecast."[65]

Value Line's growth rate projections provide a sound basis on which to evaluate investors' expectations when applying the DCF model and there are many citations to Value Line in textbooks and other sources supporting its usefulness as a guide to investors' expectations. For example, *Cost of Capital – A Practitioners' Guide*, published by the Society of Utility and Regulatory Financial Analysts, noted that:

> [A] number of studies have commented on the relative accuracy of various analysts' forecasts. Brown and Rozeff (1978) found that Value Line was superior to other forecasts. Chatfield, Hein and Moyer (1990, 438) found, further "Value Line to be more accurate than alternative forecasting methods" and that "investors place the greatest weight on the forecasts provided by Value Line."[66]

Value Line is clearly a "widely-followed, independent investor service,"[67] and Value Line's EPS growth projections provide a credible guide to investors' expectations. The use of Value Line's EPS growth projections, in conjunction with IBES, enhances the reliability of the resulting CAPM cost of equity estimates.

Q. What is the implied market rate of return based on Value Line EPS growth rates?

A. As shown on Exhibit No. RG&E-108, after removing companies with growth rates that were negative or greater than 20%, the weighted average of the Value Line EPS growth projections for the individual firms implies an average growth rate of 10.23%. Combining this average growth rate with a weighted average dividend yield of 2.06%

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[65] Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 300.

[66] David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Soc'y of Util. & Regulatory Fin. Analysts (2010) at 143. *See also*, Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 71.

[67] Opinion No. 531 at P 102. *See also Kern River Gas Transmission Co.*, Opinion No. 486-C, 129 FERC ¶ 61,240 at P 50 (2009) (noting that "Value Line is a publication relied on by many investors. . . .").

results in a current cost of common equity estimate for the market as a whole (R_m) of 12.29%.

Q. Do you include a size adjustment in applying the CAPM?

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

> One of the most remarkable discoveries of modern finance is the finding of a relationship between firm size and return. On average, small companies have higher returns than large ones…. The relationship between firm size and return cuts across the entire size spectrum; it is not restricted to the smallest stocks.[68]

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 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, my CAPM analysis incorporates an adjustment to recognize the impact of size distinctions, as measured by the market capitalization for the companies in the Electric Group.

Q. What ROE range implied for the Electric Group using the IBES-based CAPM approach?

A. As detailed on Exhibit No. RG&E-105, referencing a 3.68% risk-free rate based on the six-month average yield on 30-year Treasury bonds in January 2023, the CAPM implies a cost of equity range of 8.64% to 11.79% for the Electric Group.

[68] Morningstar, *2015 Ibbotson SBBI Classic Yearbook* at 99 (2015).

Q. What ROE range is implied for the Electric Group using the Value Line-based CAPM approach?

A. As shown on Exhibit No. RG&E-107, the Value Line-based CAPM approach implies a cost of equity range of 9.88% to 13.60% for the Electric Group.

IV. SUPPLEMENTAL ROE BENCHMARKS

Q. What is the purpose of this section of your testimony?

A. This section presents additional benchmarks to evaluate a just and reasonable ceiling ROE for RG&E. Specifically, I examine results of the Risk Premium and Expected Earnings methods applied to my proxy group of electric utilities.

Q. Has the Commission acknowledged the potential relevance of evidence beyond the results of any particular set of financial models?

A. Yes. The Commission has noted that the ultimate determination of a just and reasonable end result depends "on the particular circumstances of the case," and noted that a broad range of additional evidence may be pertinent in evaluating investors' required return.[69] Observing that "any methodology has the potential for errors or inaccuracies,"[70] the Commission has concluded that "[t]here is significant evidence indicating that combining estimates from different models is more accurate than relying on a single model."[71] There is no sound reason why such evidence would not be equally relevant in evaluating a just and reasonable ceiling ROE for RG&E in this proceeding.

Finally, while an exhaustive response to the criticisms of the Risk Premium and Expected Earnings approaches presented in Opinion Nos. 569 and 569-A is beyond the

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[69] Opinion No. 569 at P 68 (footnote omitted); Opinion No. 569-A at P 175 (footnote omitted). For example, the Commission noted that evidence concerning "ROEs of non-utility companies, . . . non-utility stock prices, [and] investor expectations for non-utility stocks" may be relevant. Opinion No. 569 at P 522; Opinion No. 569-A at P 217.

[70] Opinion No. 569 at P 38.

[71] *Id.*

scope of this proceeding, this section also highlights the primary failures of these arguments.

A. Risk Premium Approach

Q. Briefly describe the Risk Premium approach.

A. The Risk Premium approach 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 then adding this equity Risk Premium to the current yield on bonds.

Q. Is the Risk Premium approach a widely accepted method for estimating the cost of equity?

A. Yes. The Risk Premium approach is based on the fundamental risk-return principle that is central to finance. This method is routinely referenced by the investment community, by academics, and in regulatory proceedings, and provides an important tool in estimating a fair ROE.

Q. The D.C. Circuit noted in its August 2022 decision that Opinion No. 569 was critical of the Risk Premium approach. Do you agree with the Commission's subsequent reconsideration of this position in Opinion No. 569-A?

A. Yes. Despite finding that the Risk Premium approach is a "market-oriented methodology" and a "traditional method[] investors may use to estimate the expected return from an investment in a company,"[72] Opinion No. 569 advanced three primary criticisms of the Risk Premium method: 1) the Risk Premium approach is "largely redundant" with the CAPM methodology,[73] 2) that "circularity is particularly direct and

[72] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 165 FERC ¶ 61,118, at P 36 (2018).

[73] Opinion No. 569 at P 341.

acute with the Risk Premium model,"[74] and 3) that it "requires methodological decisions that would likely undermine transparency and predictability in Commission outcomes."[75] None of these rationales is justified.

Q. Are the Risk Premium and CAPM methodologies "redundant" of each other?

A. No. The Risk Premium approach is recognized as a distinct financial model that is separate and apart from the CAPM. In the recognized treatise, Principles of Public Utility Rates, Bonbright noted that "[t]he risk premium approach is probably the second most popular approach to estimating the cost of equity."[76] Similarly, the Risk Premium approach is cited as one of the preeminent cost of capital methodologies by the primary reference text prepared for the Society of Utility and Regulatory Financial Analysts,[77] as well as by *New Regulatory Finance*,[78] which the Commission has cited as an authoritative source.

Apart from the fundamental notion that investors demand a higher return for bearing greater risk, there is no overlap whatsoever in the CAPM and Risk Premium methods, which approach the task of estimating investors' required rate of return from their own distinct premises. Not only do these methods evaluate the cost of equity from fundamentally different foundations, each approach also uses widely different inputs, none of which are congruent.

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[74] *Id.* at P 343.

[75] *Id.* at P 340.

[76] James C. Bonbright, Albert L. Danielsen, and David R. Kamerschen, Principles of Public Utility Rates, Pub. Utils. Reports, Inc. (1988) at 322.

[77] David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Society of Utility and Regulatory Financial Analysts (2010) at 164.

[78] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports, Inc. (2006) at 28, 107-130. Opinion No. 569 cited Professor Eugene Brigham, who also recognized that the Risk Premium method is typically used when estimating a company's cost of equity. Opinion No. 569 at P 218.

Q. Opinion No. 569 suggested that the Risk Premium approach is undermined by "circularity." Is this a valid concern?

A. No. The position taken in Opinion No. 569 regarding "circularity" is misplaced. In establishing authorized ROEs, regulators (including the Commission) typically consider a broad range of evidence, including the results of alternative market-based approaches, such as the DCF model. Because allowed ROEs consider market inputs and are not based strictly on past regulatory findings, this mitigates concerns over any potential for circularity. As *New Regulatory Finance* concluded:

> It is sometimes alleged that reliance on allowed risk premiums is circular. This is a dubious argument to the extent that allowed risk premiums are presumably based on objective market data (dividends, interest rates, beta, stock prices, etc.) and not strictly on the decisions of other regulators.[79]

Further, given that the Risk Premium approach is one method among others and is not being relied on solely to establish the ROE, there is no justification for the claim that consideration of the Risk Premium approach somehow results in circularity.

Moreover, given the importance of the ROE component of a utility's revenue requirements, virtually every measure of future financial performance—including cash flow measures, profitability, and dividend policies—is impacted by the ROE established by regulators. As a result, the Risk Premium approach is no more susceptible to concerns over circularity than the analysts' EPS growth rates reported by IBES. As one respected treatise observed, "[s]ince regulation establishes a level of authorized earnings, which in turn implicitly influences dividends per share, estimation of the growth rate from such data is an inherently circular process."[80] If analysts' growth estimates are rendered unusable because they are, in part, a function of expectations regarding future allowed ROEs, then, under the reasoning of Opinion No.

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[79] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports, Inc. (2006) at 124.

[80] Charles F. Phillips, Jr., *The Regulation of Public Utilities,* Pub. Utils. Reports, Inc. (1993) at 396.

569, the DCF model must be rejected as well. This is misguided and the Commission was justified in reversing its stance in Opinion No. 569-A.

Q. Opinion No. 569 also stated that a need for "methodological decisions" justified disregarding the Risk Premium method.[81] Is this a reasonable assertion?

A. No. This observation is true of any financial model used to estimate the cost of equity (*e.g.*, source of growth rates, estimation of market risk premium) and provides no justification for ignoring an approach that has been classified among the key financial models in estimating the cost of equity. With respect to the DCF model, even after decades of use and Commission precedent, methodological issues are still commonly litigated and the Commission continues to modify its approach. Similarly, the Commission is free to provide further guidance on the implementation of the Risk Premium method, which it undertook in Opinion No. 569-A, and the Risk Premium approach is no "less predictable and transparent than other models"[82] in this respect.

Q. What changes to the Risk Premium method did the Commission direct in Opinion No. 569-A?

A. To address specific concerns regarding the implementation of the Risk Premium approach, Opinion No. 569-A directed certain refinements in its application. Specifically, the Commission:

- developed a separate risk premium for each individual case, rather than using annual averages;[83]
- adopted the six-month period preceding the filing date of the offer of settlement as the basis for establishing the six-month average bond yield used to calculate risk premiums attributable to ROEs approved through settled proceedings;[84]

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[81] Opinion No. 569 at P 346.

[82] *Id.*

[83] Opinion No. 569-A at P 108.

[84] *Id.* at P 111.

- adopted the six-month study period as the basis for establishing the six-month average bond yield used to calculate risk premiums attributable to ROEs approved through litigated proceedings;[85] and
- extended the sample period for the Risk Premium study through the conclusion of the study period, rather than the calendar year.[86]

As documented in Appendix I to Opinion No. 569-A, the Commission removed cases from the Risk Premium study where:

- the utility was merely adopting an existing ROE without consideration of whether that ROE would be determined to be just and reasonable under fresh analysis;
- the ROE was clearly not under consideration;
- there were duplicative findings from a previous case;
- the ROE was set for a definite future date, and the Commission could not have evaluated a risk premium for a future date; and
- the test period predated 2006.

More recently, in Opinion No. 569-B, the Commission corrected a limited number of typographical and other minor errors to the Risk Premium data set used in Opinion No. 569-A.[87] The Commission further refined this case set in *DATC*.[88]

Q. Do you add any observations to the Risk Premium case set relied on by the Commission in *DATC*?

A. Yes. Apart from updating the observations to reflect ROEs approved by the Commission through December 31, 2022, I also make several corrections to the model inputs listed in *DATC*. Specifically, I identified three cases the Commission either mistakenly omitted using the criteria listed above or failed to consider altogether. These cases are listed on page 7 of Exhibit No. RG&E-109.

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[85] *Id.*

[86] *Id.*

[87] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569-B, 173 FERC ¶ 61,159 (2020) ("Opinion No. 569-B") at PP 127-28, Appendix I, *vacated & remanded sub nom. MISO Transmission Owners v. FERC*, No. 16-1325 (D.C. Cir. 2022).

[88] *DATC* at PP 126-131.

The first of these additions was to reflect the 11.18% ROE approved by the Commission in 2008 for Public Service Electric and Gas Company in connection with that company's proposed implementation of a formula rate for transmission service.[89] This 11.18% ROE was based on a contemporaneous DCF analysis employing a six-month study period ending May 2008.[90]

The second correction reflects the addition of the 11.18% going-forward ROE for PPL Electric Utilities Corporation specified in the May 1, 2009 settlement of Docket No. ER08-1457. The settlement provided for ROEs of 11.10% and 11.14% corresponding to the periods November 1, 2008 through May 31, 2008 and June 1, 2009 through May 31, 2010, respectively, while also providing that, "On June 1 2010 and thereafter, the Base ROE shall be 11.18 percent."[91] While *DATC* includes both the 11.10% and 11.14% ROEs established in this settlement agreement, it excluded the going-forward ROE of 11.18%. As the Commission determined in Opinion No. 569-B, "Use of multiple ROEs may be appropriate where the ROEs apply to distinct periods."[92] The 11.18% ROE specificed in the settlement of Docket No. ER08-1457 is comparable to other ROEs routinely approved by the Commission for future application of formula rates, and there is no credible basis to exclude this observation.

The third addition to the *DATC* case set is necessary to include the ROE specified in the settlement approved for Xcel Energy Southwest Transmission Company, LLC ("XEST") in Docket No. ER14-2751 associated with Zone 11 under the SPP OATT. As the Commission specified in approving the settment, "XEST will have two ROEs. One for calculating XEST's revenue requirement associated with

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[89] *Public Service Electric and Gas Company*, Order on Formula Rate Proposal, 124 FERC ¶ 61,303 (2008).

[90] *See* Docket No. ER08-1233, Direct Testimony of Michael J. Vilbert, Exhibit No. PEG-6 at 19-20.

[91] *PPL Electric Utils. Corp.*, Order Approving Uncontested Settlement, 128 FERC ¶ 61,178 at P 4 (2009).

[92] Opinion No. 569-B at P 131.

Zone 11 under the SPP OATT (Zone 11 ROE) and one for all other purposes (General ROE.)"[93] As the Commission noted, "The Zone 11 ROE shall equal the then-effective Commission-approved ROE used to calculate the Southwestern Public Service Company's (SPS) revenue requirement pursuant to the SPP OATT,"[94] which was 10.00%.[95] While *DATC* included the "General ROE" established under XEST's settlement, it failed to include the 10.00% base ROE applicable to Zone 11 service. There is no basis to ignore this data point.[96]

Q. Do you remove any observations from the Risk Premium case set adopted in *DATC*?

A. Yes. As shown on page 8 of Exhibit No. RG&E-109, I remove the 10.02% ROE established in Opinion No. 596-A as that decision was vacated by the D.C. Circuit. I also remove a 10.05% ROE attributed to Docket No. EL15-45, which was a pancaked FPA Section 206 complaint proceeding for the MISO TOs. The Commission dismissed that complaint, and no ROE was approved or established in that proceeding. In addition, I also remove a duplicative ROE observation corresponding to Docket No. ER19-1396.

In applying the Risk Premium approach in *DATC*, the Commission also incorporated ten ROEs stemming from settlements of cases involving publicly owned entities. Revenue requirements and underlying capital costs for publicly owned utilities are primarily driven by debt service requirements, and there is no relevant equivalent

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[93] *See, Xcel Energy Southwest Trans. Co.*, Certification of Uncontested Offer of Settlement, 153 FERC ¶ 63,019 (2015).

[94] *Id.* at P 13.

[95] *Golden Spread Elec. Coop., Inc., et al.*, Order Approving Uncontested Settlement, 153 FERC ¶ 61,103 at P 13 (2015).

[96] The Commission concluded in *Pacific Gas & Elec. Co.* that approval of separate ROEs in the same order involves "unique circumstances." *Pacific Gas & Elec. Co.*, 178 FERC ¶ 61,175 at P 227 (2022). In fact, however, the Risk Premium case set includes several instances where multiple ROEs were approved in the same proceeding based on distinguishing circumstances. *See, e.g.*, Docket Nos. ER08-1457, ER10-355, and ER11-2853.

to the market cost of equity for an investor-owned utility. Accordingly, ROE determinations for municipals and cooperatives should not be included in applying the Risk Premium method to estimate the ROE for investor-owned electric utilities, such as RG&E.

Q. Is this critical distinction recognized by the investment community?

A. Yes. For example, S&P observed that "[c]ash available from current operating revenues to pay debt service is the principal focus" of its financial analysis of cooperative utilities.[97] As S&P concluded:

> We believe that fixed costs and imputed charge coverage best gauges a retail utility's total financial capacity. It measures the ability of the retail utility to service both its total debt and debt-like obligations, which together we refer to as fixed costs and imputed charges.[98]

Moody's identified the "[l]ack of a profit motive or need to generate a return on equity" as key characteristics typifying public power utilities.[99] Meanwhile, Fitch concluded that:

> Public power systems are unique from their investor-owned counterparts. In nearly all cases, public power systems operate on a not-for-profit basis and with the fundamental mission of providing safe, reliable and affordable electric service. Excess cash flow is typically retained and used to build financial cushion, fund capital investment or reduce borrowings.[100]

Similarly, the Presiding Judge in *Missouri River Energy Services* noted that:

> Municipally-owned utilities do not answer to stockholders seeking a return on their investments. They pay no dividends . . . .The governing

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[97] S&P Global Ratings, *U.S. Public Finance: Applying Key Rating Factors to U.S. Cooperative Utilities*, Criteria | Governments (Nov. 21, 2007).

[98] S&P Global Ratings, *U.S. Municipal Retail Electric and Gas Utilities: Methodology and Assumptions* (Sep. 27, 2018).

[99] Moody's Investors Service, *U.S. Public Power Electric Utilities With Generation Ownership Exposure*, Rating Methodology (Nov. 28, 2017).

[100] Fitch Ratings, Inc., *Exposure Draft: U.S. Public Power Rating Criteria*, Public Finance (Jun. 14, 2018).

> members of municipal-owned utilities are their own customers . . . Publicly-owned utilities pay no income taxes . . . . By contrast, investor-owned utilities are profit-making and profit-maximizing private entities that strive to attain the greatest possible ROE for their shareholders. They do so in order to attract investors to their stock in the stock market . . . . In short, unlike investor-owned utilities, it is not the purpose of a municipally-owned utility to earn a profit. Quite the opposite, it is a *non*-profit institution that is set up that way in order to achieve lower rates for ratepayers.[101]

Publicly owned (cooperative or municipal) utilities do not raise equity in the capital markets and do not seek to make a profit. Consequently, ROE determinations for publicly owned electric systems provide no information relevant to a determination of a just and reasonable ROE for an investor-owned electric utility, such as the Company. Similarly, the ROE witness in Docket Nos. ER17-426 and ER17-428 (identified as *Denison* and *Vermillion* on the Commission's Risk Premium case list in *DATC*) observed that the DCF method "is not the best method to determine ROE for non-jurisdictional utilities which . . . are municipally owned, have no stock price, and issue no dividends."[102] In fact, of the ten proceedings for publicly-owned entities included by the Commission, eight failed to include a DCF study or the results of any other financial model, with the ROE request being based solely on an average of previously allowed ROEs.[103]

Q. What other adjustment do you make to the *DATC* case set?

A. The bottom panel on page 8 of Exhibit No. RG&E-109 identifies one other minor correction to remove the impact of a post-record period adjustment for changes in bond

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[101] *Missouri River Energy Services,* Initial Decision, 130 FERC ¶ 63,014 at PP 228-229, 231 (2010) (emphasis in original).

[102] *Southwest Power Pool, Inc.*, Docket No. ER17-426, Prepared Direct Testimony of James Pardikes at 11 (filed Nov. 29, 2016); *Southwest Power Pool, Inc.*, Docket No. ER17-428, Prepared Direct Testimony of James Pardikes at 11 (filed Nov. 30, 2016). In both instances, the requested ROE was based on an average of previously allowed ROEs by state regulatory commissions.

[103] This evidence contradicts the conclusion in *Pacific Gas & Elec. Co.* that there is nothing to distinguish the determination of an ROE in proceedings involving publicly owned entities and investor-owned utilities. *Pacific Gas & Elec. Co.*, 178 FERC ¶ 61,175 at P 221 (2022).

yields that is necessary to match the ROE to the study period interest rate.[104] The revised inputs to the Risk Premium approach are shown on pages 2-4 of Exhibit No. RG&E-109.

Q. What cost of equity is implied by the Risk Premium method?

A. As illustrated on page 1 of Exhibit No. RG&E-109, with an average six-month historical yield on Baa public utility bonds at January 2023 of 5.66%, the Risk Premium method implies a current equity risk premium of 4.68% for electric utilities. Adding this equity risk premium to the average six-month historical yield on Baa utility bonds implies a current cost of equity of 10.34%.

Q. How do you impute a range around this Risk Premium cost of equity estimate?

A. For purposes of evaluating a just and reasonable ROE ceiling applicable to CLCPA Eligible Projects, I impute a range around the 10.34% Risk Premium result based on the average difference between the high and low boundaries of the two-step DCF and CAPM ranges. As shown on page 1 of Exhibit No. RG&E-109, this results in an implied cost of equity range of 8.75% to 11.93%.

B. Expected Earnings Approach

Q. Please explain your Expected Earnings study.

A. Analysis of rates of return available from alternative investments of comparable risk can provide an important benchmark in assessing the return necessary for a firm to maintain financial integrity and attract capital. This approach is consistent with the economic underpinnings for a fair rate of return, as reflected in the comparable earnings test established by the Supreme Court in *Hope* and *Bluefield.* Moreover, it avoids the complexities and limitations of capital market methods and instead focuses on the

[104] The allowed ROE of 10.04% includes a 49 basis point downward adjustment that was made to reflect changes in interest rates between the study period and the date of the Commission's order. Because the Commission references the average bond yield for the six-month study period to compute the Risk Premium, this adjustment must be reversed.

returns earned on book equity, which are readily available to investors. As the Commission recognized in Opinion No. 531:

> [T]he . . . expected earnings analysis, given its close relationship to the comparable earnings standard that originated in *Hope*, and the fact that it is used by investors to estimate the ROE that a utility will earn in the future can be useful in validating our ROE Recommendation.[105]

Q. Did the Commission rely on the Expected Earnings approach in Opinion No. 569-A?

A. No. However, the Commission noted that "we do not necessarily foreclose its use in future proceedings," so long as concerns expressed in Opinion No. 569 and reiterated in Opinion No. 569-A are addressed.[106] Specifically, the Commission raised the following principal concerns in explaining its decision not to rely on this method:

- The Expected Earnings approach is not based on market values.
- Differences between market values and book values undermine the relevance of the Expected Earnings approach.
- There is a lack of data demonstrating that investors use the Expected Earnings approach directly to value utility common stocks.

My subsequent testimony briefly addresses the misguided nature of these concerns.

Q. Opinion No. 569-A concluded that, because investors cannot buy stock in the market at book value, the expected earnings approach should be rejected.[107] Does this finding undermine the relevance of the Expected Earnings approach?

A. No. I agree that the Expected Earnings method is not market-based in that it is not dependent directly or indirectly on stock prices or other data from the capital markets. But this does not discount its usefulness as a meaningful approach for investors and regulators to compare expected returns in one utility versus another. Specifically, it is

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[105] Opinion No. 531 at P 147.

[106] Opinion No. 569-A at P 132.

[107] Opinion No. 569-A at PP 201, 204-205, 210, 216-217, 219, 221-222.

reasonable to expect that investors compare stock investments based on securities analysts' projections of the expected return on common equity, which is analogous to the return on the equity component of a utility's rate base.

As detailed below, this comparison is relevant to investors because it directly measures the returns on book investment that the investment community expects from comparable-risk investments, without the need to make the subjective evaluations inherent in market-based models, such as how to best estimate investors' growth expectations or the market required return. Thus, it provides regulators with a meaningful guide to the return the utility should be expected to earn on its book equity investment. And given that rates are established on the basis of the book value of a utility's investment, this is a relevant measure of the ROE that is consistent with regulatory standards of comparable earnings and capital attraction established in *Hope* and *Bluefield*.

Q. Has the Expected Earnings approach been recognized as a meaningful methodology in evaluating a just and reasonable ROE?

A. Yes. The Expected Earnings approach is analogous to the comparable earnings method, which predominated before the advent of the DCF and other financial models. While the traditional comparable earnings test is often implemented using historical accounting data, it is also common to use projections of returns on book investment. 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, and it has long been referenced and relied on in regulatory proceedings.[108] For example, in approving an ROE for electric utility operations, the North Carolina Utilities Commission recently concluded that:

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[108] *See, e.g.,* Nat'l Ass'n of Regulatory Util. Comm'rs, *Utility Regulatory Policy in the U.S. and Canada, 1995-1996* (Dec. 1996). The Virginia State Corporation Commission is required by statute to

(continued . . .)

> In prior cases, the Commission has given significant weight to the results of the Expected Earnings methodology, which stands separate and apart from the market-based methodologies (e.g., the DCF or CAPM) also used by ROE experts . . . The Commission chooses to do so again in this case.[109]

As S&P observed, "[h]istorically, there have been two approaches in calculating ROE in regulatory proceedings, a comparable earnings approach and a market analysis. In a comparable earnings approach, similar investments with similar risks are analyzed to determine an appropriate ROE."[110]

Q. Is reference to returns on book value consistent with how utility rates are evaluated?

A. Yes. Regulators do not set the returns that investors earn in the capital markets—they can only establish the allowed return on the book value of a utility's investment. The expected earnings approach provides a direct guide to ensure that the allowed ROE is similar to what other utilities of comparable risk are expected to earn on invested capital. This opportunity cost 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, independent of fluctuating stock prices, market-to-book ratios, debates over DCF growth rates, or theoretical assumptions about investor behavior.

Indeed, a textbook prepared for the Society of Utility and Regulatory Financial Analysts labels the comparable earnings approach the "granddaddy of cost of equity

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consider the earned returns on book value, which establish lower and upper boundaries for the allowed ROE. Virginia Code § 56-585.1.A.2.a. The Ohio Public Utilities Commission also considers prospective earned rates of return in evaluating the impact of electric security plans. Ohio R.C. 4928.143(E).

[109] North Carolina Utilities Commission, Docket No. E-7, SUB 1187, *et al.*, *Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice* (Mar. 31, 2021) at 94.

[110] S&P Global Market Intelligence, *The rate case process: establishing a fair return for regulated utilities*, RRA Regulatory Focus (Jun. 29, 2020).

methods,"[111] and notes that the comparable earnings method is firmly anchored in the regulatory economics underlying the *Bluefield* and *Hope* cases.[112] It also notes that the amount of subjective judgment required to implement this method is "minimal," particularly when compared to the DCF and CAPM methods.[113] *New Regulatory Finance* concluded that "because the investment base for ratemaking purposes is expressed in book value terms, a rate of return on book value, as is the case with Comparable Earnings, is highly meaningful."[114]

Q. Does the investment community reference earned returns on book value in their evaluation of electric utilities?

A. Yes. Book value accounting measures, including earned and expected returns on book equity, are instrumental to the financial analysis underpinning investors' evaluation of electric utilities, including credit ratings. S&P cited the relevance of earned returns on book value in highlighting the primary credit considerations in the utility industry, noting that "required rate of return on equity investment is closely linked to a utility company's profitability."[115] S&P indicated that "[f]or regulated utilities subject to full cost-of-service regulation and return-on-investment requirements, we normally measure profitability using ROE, the ratio of net income available for common stockholders to average common equity."[116] While recognizing that "the regulator ultimately bases its decision on an authorized ROE," S&P observed that "different factors such as variances in costs and usage may influence the return a utility is actually

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[111] David C. Parcell, *The Cost of Capital – A Practitioner's Guide,* Society of Utility and Regulatory Financial Analysts (2010) at 115-16.

[112] *Id.*

[113] *Id.*

[114] Roger A. Morin, *New Regulatory Finance,* Pub. Utils. Reports, Inc. (2006) at 395.

[115] Standard & Poor's Corporation, *Utilities: Key Credit Factors For The Regulated Utilities Industry,* Criteria Corporates (Nov. 19, 2013).

[116] *Id.*

able to earn, and consequently our analysis of profitability for cost-of-service-based utilities centers on the utility's ability to consistently earn the authorized ROE."[117] In S&P's view, the earned return on book value may provide better insight into the financial health of the utility because it reflects the actual impact of regulation, not the theoretical outcome implied by an authorized ROE. Consistent with this paradigm, S&P examines trends in utility returns on book equity, as compared with authorized ROEs, in evaluating financial performance for the electric utility industry.[118] Similarly, in a review of financial quality measures for utilities, S&P noted that "[t]he earned return on equity . . . is one of the most widely followed measures of the industry's financial performance."[119]

Moody's also recognizes the relevance of returns on book value in its assessment of a utility's prospects. While noting that "[t]he authorized ROE is a popular focal point in many regulatory rate case proceedings," Moody's recognized that "earned ROEs, as reported by utilities and adjusted by Moody's," are a key gauge of financial performance.[120] As Moody's concluded, "utilities are closer to earning their authorized equity returns, which is positive from an equity market valuation perspective."[121] In explaining its scorecard analysis for a Baa-rated utility, Moody's Investors' Service noted that regulatory outcomes should be "sufficient to attract capital without difficulty," and that this "will translate to returns (measured in relation to

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[117] *Id.*

[118] *See, e.g.*, S&P, *Utility-earned ROEs exceeded authorized since 2016, but 2019 may not match 2018*, Financial Focus (Jun. 10, 2019).

[119] S&P Global Market Intelligence, *Utility operating company financials mixed: ROE slips*, Financial Focus (Dec. 11, 2019).

[120] Moody's, *Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles*, Sector In-Depth (Mar. 10, 2015).

[121] *Id.*

equity, total assets, rate base, or regulatory asset value, as applicable) that are average relative to global peers."[122]

Q. Do Opinion Nos. 569 or 569-A undermine the relevance of this evidence?

A. No. The Commission examined some of this evidence in Opinion No. 569 but, nevertheless, suggested that investors "may not" use the information from the Expected Earnings analysis to inform their investment decisions.[123] But these investment services would not provide this information if investors did not rely upon it to inform their decisions. The Commission also posited that investors may not use this information specifically to "determine the applicable cost of capital,"[124] but this again hinges on the notion that only market-based evidence is relevant in evaluating a just and reasonable ROE.

Q. What other evidence supports a finding that returns on book value influence investors' valuation decisions?

A. In addition to the materials cited above, a research paper by Dr. Aswath Damodaran emphasized the importance of considering returns on book value in evaluating performance and alternative investments.[125] Contradicting Opinion No. 569's conclusion that returns on book value are unrelated to an evaluation of investors' expected return on investment,[126] Dr. Damodaran noted that, "[w]hile returns on equity and capital are based upon accounting earnings and capital, and are designed to

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[122] Moody's, *Regulated Electric and Gas Utilities,* Rating Methodology (Jun. 23, 2017).

[123] Opinion No. 569 at P 212.

[124] *Id.* at P 217.

[125] Aswath Damodaran, *Return on Capital (ROC), Return on Invested Capital (ROIC) and Return on Equity (ROE): Measurement and Implications,* New York University, Stern School of Business (July 2007).

[126] Opinion No. 569 at PP 204-205.

measure the quality of a firm's existing investments, they are correlated with returns you would make investing in the publicly traded equity of the firm."[127]

As Dr. Damodaran stated, "we can safely conclude that the key number in a valuation is not the cost of capital that we assign a firm but the return earned on capital that we attribute to it."[128] This is exactly what the Expected Earnings method seeks to measure. If the allowed ROE is insufficient to provide a return on the book value of a utility's investment as compared with what investors expect other utilities of comparable risk to earn, the utility's ability to compete for capital will be undermined. The Expected Earnings approach provides a measure of this necessary return as one component of the evaluation of a just and reasonable ROE.

Q. What other considerations support reference to returns on book value, as a complement to market-based methods?

A. Opinion No. 569 contends that because investors can only purchase common stocks at market value, expected returns on book value are irrelevant unless the market-to-book ratio is equal to 1.0.[129] However, this ignores the fact that existing shareholders are continuously investing in a firm's equity *at book value* every time earnings are retained for reinvestment, rather than being paid as dividends. Retained earnings are reflected on the balance sheet as an increase in the book value of shareholders' equity. When a firm retains that portion of earnings not paid out as common dividends, its shareholders effectively invest in the firm's equity, and those investments are made at book value.

Moreover, as the Commission has recognized, in most instances "the public utility companies for which the Commission sets rates are not publicly traded and thus do not have any market-determined stock values."[130] This was the case in the Supreme

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[127] Damodaran, *supra* n.116 at 49.

[128] *Id.* at 6.

[129] Opinion No. 569 at P 201.

[130] *Id.* at P 208.

Court's *Hope* decision, where the financial integrity standards were directly related to the book value of a utility's equity and expected earnings. Similarly, one key gauge of a utility's financial integrity is credit metrics, which depend on the book value of equity and earnings on that book value of investment. The Expected Earnings method is directly related to ensuring that the standards underlying a just and reasonable ROE are met.

Q. Does a difference between book and market values also raise concerns for market-based methods?

A. Yes. Differences between market realities and the theoretical constructs underlying market-based methods support the use, rather than rejection, of the Expected Earnings approach. As one researcher summarized in the early days before the DCF became a regulatory mainstay:

> We conclude that the [DCF] formula is logically incorrect for public utility regulation whenever stocks are selling at a price in excess of their book equity per share. . . . Although it purports to satisfy investor expectations, it is in fact designed to defeat the expectations of any investor who pays a market price in excess of book. It satisfies the expectations only of the investor who buys at book and expects market prices to remain at book.[131]

This is not to say that the DCF model is not a useful methodology when considered along with other methods. But as this discussion makes clear, arguments based on "truisms" inherent in the mathematical tautology of DCF theory do not support abandoning the Expected Earnings approach, which focuses on the projected earned returns on book equity supporting the investors' expectations underlying the market price of the stock.

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[131] Walter A. Morton, *The Investor Capitalization Theory of the Cost of Equity Capital*, Land Econ. 248-63 (Aug. 1970).

Q. What other primary misconception underlies the rejection of the Expected Earnings approach in Opinion Nos. 569 and 569-A?

A. Opinion No. 569-A argues that the Expected Earnings method should be excluded because of a lack of evidence "that investors use such data to directly value equities, determine the cost of equity, or make investment decisions."[132] Similarly, Opinion No. 569 concluded that "there is insufficient record evidence to demonstrate that investors rely on the Expected Earnings model," or that investors "use the Expected Earnings model to determine their required returns on investments in public utilities."[133]

Q. Does this line of argument support excluding the Expected Earnings approach?

A. No. As my testimony demonstrates, returns on book value are a key consideration in evaluating investment alternatives, particularly in the regulated sector where book values play a fundamental role in establishing future earnings and cash flows. But in any event, the merit of any specific financial model is not premised on whether individual investors rely directly on that method to "determine their required returns" or "to inform their investment decisions."[134] In fact, it is precisely because it is impossible to know the valuation process that gives rise to investors' opportunity costs that such methods have been developed.

Consider the DCF model or the CAPM approach, for example. While each of these methodologies is premised on widely accepted theoretical concepts, there is no evidence to support a finding that either the DCF or the CAPM is used directly by investors in establishing observable stock prices or other "market-based" parameters. In fact, approximately 60% to 75% of all trading on U.S. stock exchanges is generated

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[132] Opinion No. 569-A at P 126.

[133] Opinion No. 569 at PP 210, 213. Similarly, Opinion No. 569 also concluded that there is "insufficient evidence that investors rely on risk premium analyses utilizing historic Commission ROE determinations or settlement approvals to determine the cost of capital and make investment decisions." Opinion No. 569 at P 345. My discussion applies equally to the fallacy of this contention as well.

[134] *See, e.g.,* Opinion No. 569 at PP 212, 213.

by automatic trading systems. Under the logic expounded by Opinion Nos. 569 and 569-A, the DCF or CAPM approaches could be rejected because of insufficient proof that the algorithms underlying such automated trading systems rely on these methods.

It is because we cannot determine the process by which investors arrive at their required return that theoretical models of investor behavior have been developed. Just as with the DCF and CAPM, the Expected Earnings approach provides a sound basis to consider and represent an unobservable artifact of investors' decision-making (*i.e.*, their required ROE). But the relevance of the model is not tied to the assumption that any individual investor actually depends on that specific approach, much less on the Commission's preferred application of each methodology.[135]

The purpose of all ROE models is to better understand investor return requirements, and those requirements cannot be directly observed. While real world investors might not apply the models in exactly the same way as theory dictates, the inputs to the models (*e.g.*, beta, growth rates, dividend yields, forecasted book returns) are widely published in investment advisory reports discussing utility stocks and industry prospects. Given the importance of both expected earnings and book value investment for utility investors, and the direct link to the *Hope* and *Bluefield* regulatory standards, the Expected Earnings approach provides a useful perspective in evaluating a just and reasonable ROE.

[135] If such a requirement were governing, the Commission would be forced to jettison its continued reference to GDP growth in applying the DCF model. In contrast to the evidence I have presented to demonstrate the relevance of earned returns to investors' evaluation of electric utilities, there is no support for the notion that investors use GDP growth rates "to determine the cost of capital of utilities or to calculate return on an investment." Opinion No. 569 at P 216. Accordingly, by the Commission's reasoning, its own two-stage DCF model "does not reflect how an investor would make an investment decision." *Id.* at P 217.

Q. Do current conditions in the economy and capital markets provide additional support for alternatives to the DCF and CAPM approaches?

A. Yes. Since the onset of the COVID-19 pandemic and military conflict in Ukraine, investors have confronted heightened market volatility and uncertainty. At the same time, the Federal Reserve is in the midst of a sharp reversal of its monetary policy stance to aggressively respond to levels of price inflation not seen in 40 years. Such tumultuous and highly aberrant conditions violate the general assumptions of market equilibrium and stability underlying market-based financial models. The Risk Premium and Expected Earnings approaches are largely insulated from such concerns and including them in the set of ROE models used by the Commission to determine ROEs helps to ensure that the *Hope* and *Bluefield* standards are met.

Q. What ROEs are indicated for electric utilities based on the Expected Earnings approach?

A. The year-end returns on common equity projected by Value Line over its forecast horizon for each of the utilities in the proxy group are shown on Exhibit No. RG&E-110. In *Southern California Edison Co.*, the Commission correctly recognized that, if the rate of return were based on year-end book values, such as those reported by Value Line, it would understate actual returns because of growth in common equity over the year.[136] Accordingly, consistent with the Commission's findings and the theory underlying this approach, I made an adjustment to compute an average rate of return.[137]

As shown on Exhibit No. RG&E-110, Value Line's projections for the Electric Group resulted in a range of expected rates of return from 8.66% to 15.22%.

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[136] *So. Cal. Edison Co.*, 92 FERC ¶ 61,070 at 61,263 & n. 38 (2000).

[137] Use of an average return in developing the rate of return is well supported. *See, e.g.*, Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports, Inc. (2006) at 305-06, which discusses the need to adjust Value Line's end-of-year data, consistent with the Commission's prior findings.

Q. Does this conclude your testimony?

A. Yes, it does.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Rochester Gas and Electric Corporation	**)**	**Docket No. ER23-___-000**

DECLARATION OF ADRIEN M. MCKENZIE

I depose and state under penalty of perjury that the foregoing testimony was prepared or assembled by me or under my direction, and that I have read the questions and answers labeled as my testimony: that if asked the same questions, my answers in response would be as shown; and that the facts contained in my answers are true to the best of my knowledge, information, and belief.

Executed on April 14, 2023

/s/ Adrien M. McKenzie
Adrien M. McKenzie

Exhibit No. RG&E-101

EXHIBIT NO. RG&E-101

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, 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.

Exhibit No. RG&E-102

ELECTRIC GROUP

	Company	SYM	(a) S&P Corporate Rating	(b) Moody's Long-term Rating	(c) Value Line Safety Rank	(c) Value Line Financial Strength	(c) Value Line Beta	(c) Market Cap ($M)
1	Alliant Energy	LNT	A-	Baa2	2	A	0.85	$14,000
2	Ameren Corp.	AEE	BBB+	Baa1	1	A	0.85	$23,000
3	American Elec Pwr	AEP	A-	Baa2	1	A+	0.75	$48,900
4	Black Hills Corp.	BKH	BBB+	Baa2	2	A	0.95	$4,600
5	CenterPoint Energy	CNP	BBB+	Baa2	3	B++	1.10	$19,400
6	CMS Energy Corp.	CMS	BBB+	Baa2	2	A	0.80	$17,600
7	Consolidated Edison	ED	A-	Baa2	1	A+	0.75	$33,700
8	Dominion Energy	D	BBB+	Baa2	2	B++	0.85	$52,200
9	DTE Energy Co.	DTE	BBB+	Baa2	2	A	0.95	$22,300
10	Duke Energy Corp.	DUK	BBB+	Baa2	2	A	0.85	$78,300
11	Entergy Corp.	ETR	BBB+	Baa2	2	B++	0.95	$23,000
12	Evergy Inc.	EVRG	A-	Baa2	2	B++	0.90	$13,500
13	Eversource Energy	ES	A-	Baa1	1	A	0.90	$28,300
14	Exelon Corp.	EXC	BBB+	Baa2	2	B++	n/a	$41,500
15	NextEra Energy, Inc.	NEE	A-	Baa1	1	A+	0.95	$149,100
16	OGE Energy Corp.	OGE	BBB+	Baa1	2	A	1.00	$8,000
17	Pinnacle West Capital	PNW	BBB+	Baa1	2	A	0.90	$8,500
18	Portland General Elec.	POR	BBB+	A3	2	B++	0.85	$4,400
19	PPL Corp.	PPL	A-	Baa1	3	B++	1.05	$21,700
20	Pub Sv Enterprise Grp.	PEG	BBB+	Baa2	1	A++	0.90	$30,500
21	Sempra Energy	SRE	BBB+	Baa2	2	A	0.95	$49,400
22	Southern Company	SO	BBB+	Baa2	2	A	0.90	$71,300
23	WEC Energy Group	WEC	A-	Baa1	1	A+	0.80	$30,500
24	Xcel Energy Inc.	XEL	A-	Baa1	1	A+	0.80	$39,400
			BBB+	**Baa2**	**2**	**A**	**0.89**	**$34,713**

(a) Issuer credit rating from www.standardandpoors.com (retrieved Jan. 25, 2023).
(b) Long-term rating from www.moodys.com (retrieved Jan. 25, 2023).
(c) The Value Line Investment Survey (Dec. 9, 2022, Jan. 20 and Feb. 10, 2023).

Exhibit No. RG&E-103

I. PRIMARY METHODS

Method	Range	Middle Third Lower	Middle Third Upper
Two-Step DCF	8.25% -- 11.17%	9.23% --	10.20%
CAPM			
IBES	8.64% -- 11.79%	9.69% --	10.74%
Value Line	9.88% -- 13.60%	11.12% --	12.36%
Average	9.26% -- 12.70%	10.41% --	11.55%
Composite ROE	**8.76% -- 11.93%**	**9.82% --**	**10.87%**

II. INCLUDING ROE BENCHMARKS

	Method	Range	Middle Third Lower	Middle Third Upper
	Two-Step DCF	8.25% -- 11.17%	9.23% --	10.20%
	CAPM			
	IBES	8.64% -- 11.79%	9.69% --	10.74%
	Value Line	9.88% -- 13.60%	11.12% --	12.36%
	Average	9.26% -- 12.70%	10.41% --	11.55%
(a)	Risk Premium	8.75% -- 11.93%	9.81% --	10.87%
	Expected Earnings	8.66% -- 15.22%	10.85% --	13.03%
	Composite ROE	**8.91% -- 12.73%**	**10.18% --**	**11.46%**

(a) Range imputed by adjusting the 10.34% Risk Premium result using the average spread between the low and high boundaries of the two-step DCF and CAPM ranges.

Exhibit No. RG&E-104

ELECTRIC GROUP

		(a)	(b)	(c)	(d)	(e)	(f)	
	Company	**6-mo. Avg Dividend Yield**	**EPS Growth**	**GDP**	**Weighted**	**Adjusted Dividend Yield**	**DCF Result**	**Break (b Pts)**
1	PPL Corp.	3.23%	17.77%	4.17%	15.05%	3.52%	18.57%	740
2	NextEra Energy, Inc.	2.07%	10.21%	4.17%	9.00%	2.17%	11.17%	55
3	DTE Energy Co.	3.10%	8.20%	4.17%	7.39%	3.23%	10.62%	17
4	CMS Energy Corp.	2.96%	8.17%	4.17%	7.37%	3.08%	10.45%	39
5	Southern Company	3.92%	6.48%	4.17%	6.02%	4.04%	10.06%	40
6	Entergy Corp.	3.76%	6.19%	4.17%	5.79%	3.88%	9.66%	18
7	Duke Energy Corp.	4.02%	5.65%	4.17%	5.35%	4.13%	9.48%	20
8	American Elec Pwr	3.43%	6.15%	4.17%	5.75%	3.53%	9.28%	4
9	Xcel Energy Inc.	2.83%	6.86%	4.17%	6.32%	2.92%	9.24%	3
10	Exelon Corp.	3.27%	6.26%	4.17%	5.84%	3.37%	9.22%	6
11	Eversource Energy	3.08%	6.42%	4.17%	5.97%	3.18%	9.15%	1
12	WEC Energy Group	3.11%	6.37%	4.17%	5.93%	3.21%	9.14%	19
13	Ameren Corp.	2.72%	6.64%	4.17%	6.15%	2.81%	8.95%	19
14	Black Hills Corp.	3.47%	5.40%	4.17%	5.15%	3.56%	8.72%	24
15	Alliant Energy	3.07%	5.55%	4.17%	5.27%	3.16%	8.43%	28
16	Dominion Energy	3.92%	4.47%	4.17%	4.41%	4.01%	8.42%	1
17	Consolidated Edison	3.39%	4.93%	4.17%	4.78%	3.47%	8.25%	17
18	Sempra Energy	2.90%	4.14%	4.17%	4.15%	2.96%	7.10%	115
19	Pub Sv Enterprise Grp.	3.56%	3.12%	4.17%	3.33%	3.61%	6.94%	16
20	OGE Energy Corp.	4.25%	1.90%	4.17%	2.35%	4.29%	6.65%	30
21	Evergy Inc.	3.80%	2.43%	4.17%	2.78%	3.85%	6.63%	2
22	Portland General Elec.	3.78%	1.39%	4.17%	1.95%	3.81%	5.75%	88
23	CenterPoint Energy	2.41%	-1.07%	4.17%	-0.02%	2.40%	2.37%	338
24	Pinnacle West Capital	4.73%	-3.96%	4.17%	-2.33%	4.64%	2.31%	7
	Lower End (g)						**8.25%**	
	Upper End (g)						**11.17%**	
	Median (g)						**9.23%**	
	Midpoint						**9.71%**	
	Median - All Values						**9.05%**	
	Low-End Test (h)						**7.22%**	
	High-End Test (i)						**18.10%**	

(a) Six-month average dividend yield for August 2022 - January 2023.
(b) www.finance.yahoo.com (retreived Jan. 27, 2023).
(c) Exhibit No. RG&E-104, page 2.
(d) EPS Growth x 80% + GDP Growth x 20%.
(e) Six-month average dividend yield x [1+ (EPS Growth Rate / 2)].
(f) (d) + (e).
(g) Excludes highlighted values.
(h) Average Baa utility bond yield for six-months ending Jan. 2023, plus 20% of CAPM market risk premium.
(i) 200% of Median - All Values.

GDP GROWTH RATE

Source	Nominal GDP ($ Billions) 2028	2050	2052	2078	Compound Annual Growth Rate
(a) **IHS Markit**	32,027		83,803		4.09%
(b) **EIA**					
Real GDP	23,517	36,652			
GDP Deflator	1.387	2.273			
	32,627	83,299			4.35%
(c) **SSA Trustees Report**	32,212			235,202	4.06%
Average Projected GDP Growth					**4.17%**

(a) IHS Markit, Long-Term Macro Forecast - Baseline (Jan. 23, 2023).
(b) Energy Information Administration, *Annual Energy Outlook 2022* (Mar. 3, 2022).
(c) Social Security Administration, *2022 OASDI Trustees Report,* Table VI.G6.-Selected Economic Variables.

Exhibit No. RG&E-105

IBES

		(a)	(b)		(c)		(d)		(e)	(f)		
		Market Return (R_m)				Market						
	Company	Div Yield	Proj. Growth	Cost of Equity	Risk-Free Rate	Risk Premium	Beta	Unadjusted K_e	Market Cap	Size Adjustment	CAPM Result	Break (B Pts)
1	Exelon Corp.	2.01%	8.63%	10.64%	3.68%	6.96%	n/a	n/a	$41,500	-0.26%	n/a	--
2	CenterPoint Energy	2.01%	8.63%	10.64%	3.68%	6.96%	1.10	11.34%	$19,400	0.45%	11.79%	35
3	PPL Corp.	2.01%	8.63%	10.64%	3.68%	6.96%	1.05	10.99%	$21,700	0.45%	11.44%	23
4	OGE Energy Corp.	2.01%	8.63%	10.64%	3.68%	6.96%	1.00	10.64%	$8,000	0.57%	11.21%	34
5	Black Hills Corp.	2.01%	8.63%	10.64%	3.68%	6.96%	0.95	10.29%	$4,600	0.58%	10.87%	13
6	DTE Energy Co.	2.01%	8.63%	10.64%	3.68%	6.96%	0.95	10.29%	$22,300	0.45%	10.74%	0
7	Entergy Corp.	2.01%	8.63%	10.64%	3.68%	6.96%	0.95	10.29%	$23,000	0.45%	10.74%	23
8	Pinnacle West Capital	2.01%	8.63%	10.64%	3.68%	6.96%	0.90	9.94%	$8,500	0.57%	10.51%	12
9	Evergy Inc.	2.01%	8.63%	10.64%	3.68%	6.96%	0.90	9.94%	$13,500	0.45%	10.39%	0
10	Eversource Energy	2.01%	8.63%	10.64%	3.68%	6.96%	0.90	9.94%	$28,300	0.45%	10.39%	0
11	Pub Sv Enterprise Grp.	2.01%	8.63%	10.64%	3.68%	6.96%	0.90	9.94%	$30,500	0.45%	10.39%	21
12	Portland General Elec.	2.01%	8.63%	10.64%	3.68%	6.96%	0.85	9.60%	$4,400	0.58%	10.18%	13
13	Alliant Energy	2.01%	8.63%	10.64%	3.68%	6.96%	0.85	9.60%	$14,000	0.45%	10.05%	--
14	Ameren Corp.	2.01%	8.63%	10.64%	3.68%	6.96%	0.85	9.60%	$23,000	0.45%	10.05%	--
15	NextEra Energy, Inc.	2.01%	8.63%	10.64%	3.68%	6.96%	0.95	10.29%	$149,100	-0.26%	10.03%	2
16	Sempra Energy	2.01%	8.63%	10.64%	3.68%	6.96%	0.95	10.29%	$49,400	-0.26%	10.03%	0
17	CMS Energy Corp.	2.01%	8.63%	10.64%	3.68%	6.96%	0.80	9.25%	$17,600	0.45%	9.70%	33
18	WEC Energy Group	2.01%	8.63%	10.64%	3.68%	6.96%	0.80	9.25%	$30,500	0.45%	9.70%	0
19	Southern Company	2.01%	8.63%	10.64%	3.68%	6.96%	0.90	9.94%	$71,300	-0.26%	9.68%	2
20	Dominion Energy	2.01%	8.63%	10.64%	3.68%	6.96%	0.85	9.60%	$52,200	-0.26%	9.34%	34
21	Duke Energy Corp.	2.01%	8.63%	10.64%	3.68%	6.96%	0.85	9.60%	$78,300	-0.26%	9.34%	0
22	Xcel Energy Inc.	2.01%	8.63%	10.64%	3.68%	6.96%	0.80	9.25%	$39,400	-0.26%	8.99%	35
23	American Elec Pwr	2.01%	8.63%	10.64%	3.68%	6.96%	0.75	8.90%	$48,900	-0.26%	8.64%	35
24	Consolidated Edison	2.01%	8.63%	10.64%	3.68%	6.96%	0.75	8.90%	$33,700	-0.26%	8.64%	0
	Lower End (g)										**8.64%**	
	Upper End (g)										**11.79%**	
	Median (g)										**10.05%**	
	Midpoint										**10.22%**	
	Median - All Values										**10.05%**	
	Low-End Test (h)										**7.05%**	
	High-End Test (i)										**20.10%**	

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (retrieved Jan. 31, 2023).
(b) IBES growth rates from yahoo.com (retrieved Jan. 31, 2023). Eliminated growth rates greater than 20%, as well as all negative values.
(c) Six-month average yield on 30-year Treasury bonds for Jan. 2023 from https://fred.stlouisfed.org/.
(d) The Value Line Investment Survey, Summary & Index (Jan. 27, 2023).
(e) The Value Line Investment Survey (Dec. 9, 2022, Jan. 20 and Feb. 10, 2023).
(f) Kroll, 2022 CRSP Deciles Size Premium, Cost of Capital Navigator (2023).
(g) Excludes highlighted values.
(h) Average Baa utility bond yield for six-months ending Jan. 2023, plus 20% of CAPM market risk premium.
(i) 200% of Median - All Values.

Exhibit No. RG&E-106

S&P 500 / IBES

	(a)		(a)	(b)	(a)				
				IBES	Market			Weighted	
	Company	Ticker	Dividend Yield	Yahoo Growth	Cap ($bil.)	Mkt. Cap.	Weight	Dividend Yield	Growth Rate
1	Agilent Technologies	A	0.58%	11.97%	45.99	45.99	0.0021	0.000012	0.000249
2	Advance Auto Parts	AAP	4.02%	11.40%	8.90	8.90	0.0004	0.000016	0.000046
3	Apple	AAPL	0.65%	8.25%	2,283.29	2,283.29	0.1031	0.000670	0.008510
4	AbbVie	ABBV	4.01%	2.92%	261.35	261.35	0.0118	0.000473	0.000345
5	AmerisourceBergen	ABC	1.19%	8.82%	33.98	33.98	0.0015	0.000018	0.000135
6	Abbott Laboratories	ABT	1.84%	8.30%	193.54	193.54	0.0087	0.000161	0.000726
7	Accenture	ACN	1.67%	10.38%	172.08	172.08	0.0078	0.000130	0.000807
8	Analog Devices	ADI	1.81%	14.87%	85.79	85.79	0.0039	0.000070	0.000576
9	Archer Daniels Midland	ADM	1.87%	2.35%	46.98	46.98	0.0021	0.000040	0.000050
10	Automatic Data Processing	ADP	2.39%	13.85%	94.67	94.67	0.0043	0.000102	0.000592
11	Ameren	AEE	2.85%	6.64%	22.46	22.46	0.0010	0.000029	0.000067
12	American Electric Power	AEP	3.60%	6.15%	47.45	47.45	0.0021	0.000077	0.000132
13	AES	AES	2.46%	8.00%	18.04	18.04	0.0008	0.000020	0.000065
14	Aflac	AFL	2.34%	1.13%	45.60	45.60	0.0021	0.000048	0.000023
15	American International Group	AIG	2.02%	11.68%	47.45	47.45	0.0021	0.000043	0.000250
16	Assurant	AIZ	2.14%	17.40%	6.91	6.91	0.0003	0.000007	0.000054
17	Arthur J. Gallagher & Co.	AJG	1.10%	10.20%	41.56	41.56	0.0019	0.000021	0.000191
18	Albemarle	ALB	0.58%	95.18%	31.74	--	--	--	--
19	Allstate	ALL	2.64%	-2.19%	34.21	--	--	--	--
20	Allegion	ALLE	1.45%	10.40%	9.96	9.96	0.0004	0.000007	0.000047
21	Applied Materials	AMAT	0.97%	10.80%	96.17	96.17	0.0043	0.000042	0.000469
22	Amcor	AMCR	4.16%	2.96%	17.54	17.54	0.0008	0.000033	0.000023
23	AMETEK	AME	0.62%	10.00%	32.79	32.79	0.0015	0.000009	0.000148
24	Amgen	AMGN	3.35%	5.65%	136.86	136.86	0.0062	0.000207	0.000349
25	Ameriprise Financial	AMP	1.56%	10.66%	36.60	36.60	0.0017	0.000026	0.000176
26	American Tower	AMT	2.87%	0.38%	101.81	101.81	0.0046	0.000132	0.000017
27	Aon	AON	0.73%	11.66%	67.04	67.04	0.0030	0.000022	0.000353
28	A. O. Smith	AOS	1.98%	8.00%	9.25	9.25	0.0004	0.000008	0.000033
29	APA	APA	2.38%	29.45%	14.27	--	--	--	--
30	Air Products and Chemicals	APD	2.08%	10.65%	69.22	69.22	0.0031	0.000065	0.000333
31	Amphenol	APH	1.06%	9.19%	47.22	47.22	0.0021	0.000023	0.000196
32	Alexandria Real Estate Equities	ARE	3.09%	-10.96%	24.77	--	--	--	--
33	Atmos Energy	ATO	2.62%	0.76%	16.22	16.22	0.0007	0.000019	0.000006
34	Activision Blizzard	ATVI	0.70%	7.52%	58.41	58.41	0.0026	0.000018	0.000198
35	AvalonBay Communities	AVB	3.88%	-9.83%	24.23	--	--	--	--
36	Broadcom	AVGO	3.14%	8.40%	237.20	237.20	0.0107	0.000336	0.000900
37	Avery Dennison	AVY	1.73%	7.41%	15.01	15.01	0.0007	0.000012	0.000050
38	American Water Works	AWK	1.81%	8.28%	28.28	28.28	0.0013	0.000023	0.000106
39	American Express	AXP	1.33%	7.50%	117.11	117.11	0.0053	0.000070	0.000397
40	Bank of America	BAC	2.64%	3.36%	279.81	279.81	0.0126	0.000334	0.000425
41	Ball	BALL	1.48%	3.90%	17.78	17.78	0.0008	0.000012	0.000031
42	Baxter International	BAX	2.51%	3.29%	23.26	23.26	0.0011	0.000026	0.000035
43	Bath & Body Works, Inc.	BBWI	1.85%	3.00%	10.33	10.33	0.0005	0.000009	0.000014
44	Best Buy	BBY	4.58%	0.23%	18.92	18.92	0.0009	0.000039	0.000002
45	Becton, Dickinson and Company	BDX	1.48%	8.85%	69.93	69.93	0.0032	0.000047	0.000280
46	Franklin Resources	BEN	3.98%	-6.24%	15.08	--	--	--	--
47	BrownForman	BF/B	1.20%	8.62%	32.75	32.75	0.0015	0.000018	0.000128
48	The Bank of New York Mellon	BK	3.12%	9.46%	40.41	40.41	0.0018	0.000057	0.000173
49	Baker Hughes	BKR	2.45%	49.30%	31.28	--	--	--	--
50	BlackRock	BLK	2.66%	6.08%	113.03	113.03	0.0051	0.000136	0.000310
51	Bristol Myers Squibb	BMY	3.12%	3.67%	155.57	155.57	0.0070	0.000219	0.000258
52	Broadridge Financial Solutions	BR	1.95%	11.80%	17.54	17.54	0.0008	0.000015	0.000093
53	Brown & Brown	BRO	0.78%	13.22%	16.70	16.70	0.0008	0.000006	0.000100
54	BorgWarner	BWA	1.52%	14.23%	10.50	10.50	0.0005	0.000007	0.000068
55	Boston Properties	BXP	5.51%	7.00%	11.13	11.13	0.0005	0.000028	0.000035
56	Citigroup	C	3.93%	-9.15%	100.52	--	--	--	--
57	Conagra Brands	CAG	3.64%	8.30%	17.70	17.70	0.0008	0.000029	0.000066
58	Cardinal Health	CAH	2.62%	10.30%	19.84	19.84	0.0009	0.000023	0.000092
59	Carrier Global	CARR	1.70%	9.50%	36.39	36.39	0.0016	0.000028	0.000156
60	Caterpillar	CAT	1.86%	16.00%	134.49	134.49	0.0061	0.000113	0.000972

S&P 500 / IBES

	(a)		(a)	(b)	(a)				
				IBES	Market			Weighted	
	Company	Ticker	Dividend Yield	Yahoo Growth	Cap ($bil.)	Mkt. Cap.	Weight	Dividend Yield	Growth Rate
61	Chubb Limited	CB	1.47%	16.84%	95.36	95.36	0.0043	0.000063	0.000725
62	Cboe Global Markets	CBOE	1.63%	6.40%	12.98	12.98	0.0006	0.000010	0.000038
63	Crown Castle Inc.	CCI	4.30%	11.06%	62.99	62.99	0.0028	0.000122	0.000315
64	CDW	CDW	1.23%	14.33%	25.99	25.99	0.0012	0.000014	0.000168
65	Celanese	CE	2.31%	1.04%	13.17	13.17	0.0006	0.000014	0.000006
66	Constellation Energy Corporation	CEG	0.67%	36.10%	27.27	--	--	--	--
67	CF Industries	CF	1.91%	6.00%	16.56	16.56	0.0007	0.000014	0.000045
68	Citizens Financial Group	CFG	4.02%	0.85%	21.20	21.20	0.0010	0.000038	0.000008
69	Church & Dwight Co.	CHD	1.28%	3.35%	19.95	19.95	0.0009	0.000012	0.000030
70	C.H. Robinson Worldwide	CHRW	2.52%	3.83%	11.68	11.68	0.0005	0.000013	0.000020
71	Cigna	CI	1.47%	11.48%	97.98	97.98	0.0044	0.000065	0.000508
72	Cincinnati Financial	CINF	2.80%	-1.30%	16.52	--	--	--	--
73	ColgatePalmolive	CL	2.48%	5.03%	63.28	63.28	0.0029	0.000071	0.000144
74	Clorox	CLX	3.34%	13.27%	17.45	17.45	0.0008	0.000026	0.000105
75	Comerica	CMA	3.80%	-10.70%	9.36	--	--	--	--
76	Comcast	CMCSA	2.69%	7.00%	173.37	173.37	0.0078	0.000211	0.000548
77	CME Group	CME	2.31%	8.02%	62.22	62.22	0.0028	0.000065	0.000225
78	Cummins	CMI	2.55%	7.09%	34.72	34.72	0.0016	0.000040	0.000111
79	CMS Energy	CMS	2.96%	8.17%	18.04	18.04	0.0008	0.000024	0.000067
80	CenterPoint Energy	CNP	2.53%	-1.07%	18.91	--	--	--	--
81	Capital One Financial	COF	2.07%	-6.60%	44.34	--	--	--	--
82	The Cooper Companies	COO	0.02%	10.00%	16.94	16.94	0.0008	0.000000	0.000077
83	ConocoPhillips	COP	1.72%	25.40%	149.99	--	--	--	--
84	Costco Wholesale	COST	0.76%	10.38%	217.87	217.87	0.0098	0.000075	0.001022
85	Campbell Soup	CPB	2.87%	5.01%	15.45	15.45	0.0007	0.000020	0.000035
86	Camden Property Trust	CPT	3.44%	25.29%	12.33	--	--	--	--
87	Cisco Systems	CSCO	3.23%	6.78%	196.86	196.86	0.0089	0.000287	0.000603
88	CSX	CSX	1.29%	9.08%	65.26	65.26	0.0029	0.000038	0.000268
89	Cintas	CTAS	1.05%	12.21%	44.39	44.39	0.0020	0.000021	0.000245
90	Coterra Energy	CTRA	2.39%	7.62%	20.42	20.42	0.0009	0.000022	0.000070
91	Cognizant Technology Solutions	CTSH	1.82%	5.44%	32.97	32.97	0.0015	0.000027	0.000081
92	Corteva	CTVA	0.98%	17.77%	45.22	45.22	0.0020	0.000020	0.000363
93	CVS Health	CVS	2.82%	5.41%	112.76	112.76	0.0051	0.000144	0.000276
94	Chevron	CVX	3.24%	-2.10%	346.28	--	--	--	--
95	Dominion Energy	D	4.48%	4.47%	51.91	51.91	0.0023	0.000105	0.000105
96	DuPont de Nemours	DD	1.90%	13.73%	36.53	36.53	0.0017	0.000031	0.000227
97	Deere & Company	DE	1.16%	12.19%	123.58	123.58	0.0056	0.000065	0.000681
98	Discover Financial Services	DFS	2.09%	56.42%	31.39	--	--	--	--
99	Dollar General	DG	0.92%	10.85%	53.30	53.30	0.0024	0.000022	0.000261
100	Quest Diagnostics	DGX	1.82%	-15.21%	16.52	--	--	--	--
101	D.R. Horton	DHI	1.05%	-9.70%	32.84	--	--	--	--
102	Danaher	DHR	0.38%	3.47%	191.40	191.40	0.0086	0.000033	0.000300
103	Digital Realty Trust	DLR	4.81%	-40.54%	30.49	--	--	--	--
104	Dover	DOV	1.42%	10.12%	19.91	19.91	0.0009	0.000013	0.000091
105	Dow	DOW	5.18%	-3.10%	40.74	--	--	--	--
106	Domino's Pizza	DPZ	1.32%	8.54%	12.41	12.41	0.0006	0.000007	0.000048
107	Darden Restaurants	DRI	3.28%	8.95%	17.99	17.99	0.0008	0.000027	0.000073
108	DTE Energy	DTE	3.36%	8.20%	21.97	21.97	0.0010	0.000033	0.000081
109	Duke Energy	DUK	3.96%	5.65%	78.09	78.09	0.0035	0.000140	0.000199
110	Devon Energy	DVN	1.12%	29.94%	41.97	--	--	--	--
111	Electronic Arts	EA	0.64%	10.27%	35.34	35.34	0.0016	0.000010	0.000164
112	eBay	EBAY	2.04%	4.89%	26.62	26.62	0.0012	0.000025	0.000059
113	Ecolab	ECL	1.39%	9.01%	43.40	43.40	0.0020	0.000027	0.000177
114	Consolidated Edison	ED	3.41%	4.93%	33.53	33.53	0.0015	0.000052	0.000075
115	Equifax	EFX	0.73%	9.19%	26.35	26.35	0.0012	0.000009	0.000109
116	Edison International	EIX	4.37%	4.40%	25.79	25.79	0.0012	0.000051	0.000051
117	The Estee Lauder Companies	EL	0.96%	6.48%	97.81	97.81	0.0044	0.000042	0.000286
118	Elevance Health, Inc.	ELV	1.06%	11.91%	118.43	118.43	0.0054	0.000057	0.000637
119	Eastman Chemical	EMN	3.48%	3.91%	10.89	10.89	0.0005	0.000017	0.000019
120	Emerson Electric Co.	EMR	2.38%	n/a	52.68	--	--	--	--

S&P 500 / IBES

	(a)		(a)	(b)	(a)				
				IBES	Market			Weighted	
	Company	Ticker	Dividend Yield	Yahoo Growth	Cap ($bil.)	Mkt. Cap.	Weight	Dividend Yield	Growth Rate
121	EOG Resources	EOG	2.83%	10.61%	77.81	77.81	0.0035	0.000099	0.000373
122	Equinix	EQIX	1.72%	26.00%	66.61	--	--	--	--
123	Equity Residential	EQR	4.02%	-28.49%	23.34	--	--	--	--
124	EQT	EQT	1.81%	91.93%	12.23	--	--	--	--
125	Eversource Energy	ES	3.34%	6.42%	27.69	27.69	0.0013	0.000042	0.000080
126	Essex Property Trust	ESS	4.29%	7.90%	13.49	13.49	0.0006	0.000026	0.000048
127	Eaton	ETN	2.04%	10.01%	63.29	63.29	0.0029	0.000058	0.000286
128	Entergy	ETR	3.98%	6.19%	21.87	21.87	0.0010	0.000039	0.000061
129	Evergy	EVRG	3.96%	2.43%	14.21	14.21	0.0006	0.000025	0.000016
130	Exelon	EXC	3.38%	6.26%	41.16	41.16	0.0019	0.000063	0.000116
131	Expeditors International of Washington	EXPD	1.24%	-19.90%	17.15	--	--	--	--
132	Extra Space Storage	EXR	4.09%	6.00%	20.32	20.32	0.0009	0.000038	0.000055
133	Ford Motor	F	4.69%	13.60%	52.93	52.93	0.0024	0.000112	0.000325
134	Diamondback Energy	FANG	2.04%	27.87%	25.83	--	--	--	--
135	Fastenal	FAST	2.83%	6.33%	28.33	28.33	0.0013	0.000036	0.000081
136	FreeportMcMoRan	FCX	1.72%	-11.10%	66.66	--	--	--	--
137	FactSet Research Systems	FDS	0.90%	11.90%	15.81	15.81	0.0007	0.000006	0.000085
138	FedEx	FDX	2.45%	4.11%	47.40	47.40	0.0021	0.000052	0.000088
139	FirstEnergy	FE	3.81%	1.76%	23.44	23.44	0.0011	0.000040	0.000019
140	Fidelity National Information Services	FIS	2.75%	2.74%	44.38	44.38	0.0020	0.000055	0.000055
141	Fifth Third Bancorp	FITB	3.78%	4.84%	24.54	24.54	0.0011	0.000042	0.000054
142	FMC	FMC	1.80%	9.06%	16.23	16.23	0.0007	0.000013	0.000066
143	Fox	FOXA	1.49%	9.63%	18.23	18.23	0.0008	0.000012	0.000079
144	First Republic Bank	FRC	0.87%	3.06%	25.19	25.19	0.0011	0.000010	0.000035
145	Federal Realty Investment Trust	FRT	3.91%	7.12%	8.68	8.68	0.0004	0.000015	0.000028
146	Fortive	FTV	0.42%	8.40%	23.62	23.62	0.0011	0.000004	0.000090
147	General Dynamics	GD	2.22%	9.09%	62.29	62.29	0.0028	0.000062	0.000256
148	GEN DIGITAL INC	GEN	2.21%	13.50%	14.94	14.94	0.0007	0.000015	0.000091
149	Gilead Sciences	GILD	3.47%	2.02%	105.42	105.42	0.0048	0.000165	0.000096
150	General Mills	GIS	2.79%	6.47%	45.96	45.96	0.0021	0.000058	0.000134
151	Globe Life	GL	0.73%	14.89%	11.71	11.71	0.0005	0.000004	0.000079
152	Corning	GLW	3.04%	8.40%	29.27	29.27	0.0013	0.000040	0.000111
153	General Motors	GM	0.99%	15.70%	51.60	51.60	0.0023	0.000023	0.000366
154	Genuine Parts	GPC	2.15%	4.60%	23.47	23.47	0.0011	0.000023	0.000049
155	Global Payments	GPN	0.99%	14.53%	30.19	30.19	0.0014	0.000014	0.000198
156	Garmin	GRMN	2.96%	10.78%	18.95	18.95	0.0009	0.000025	0.000092
157	The Goldman Sachs Group	GS	2.86%	-1.68%	118.56	--	--	--	--
158	W.W. Grainger	GWW	1.25%	27.95%	28.35	--	--	--	--
159	Halliburton	HAL	1.60%	43.20%	36.35	--	--	--	--
160	Hasbro	HAS	4.37%	8.30%	8.85	8.85	0.0004	0.000017	0.000033
161	Huntington Bancshares	HBAN	4.20%	-2.15%	21.28	--	--	--	--
162	HCA Healthcare	HCA	0.88%	6.88%	72.01	72.01	0.0033	0.000029	0.000224
163	Home Depot	HD	2.65%	4.95%	323.61	323.61	0.0146	0.000387	0.000724
164	Hess	HES	0.95%	78.10%	48.68	--	--	--	--
165	The Hartford Financial Services Group	HIG	2.21%	14.82%	24.63	24.63	0.0011	0.000025	0.000165
166	Huntington Ingalls Industries	HII	2.29%	10.89%	8.65	8.65	0.0004	0.000009	0.000043
167	Hilton Worldwide	HLT	0.42%	45.03%	38.63	--	--	--	--
168	Honeywell International	HON	1.99%	7.85%	138.94	138.94	0.0063	0.000125	0.000493
169	Hewlett Packard	HPE	2.98%	5.57%	20.66	20.66	0.0009	0.000028	0.000052
170	HP	HPQ	3.66%	n/a	28.12	--	--	--	--
171	Hormel Foods	HRL	2.46%	5.50%	24.45	24.45	0.0011	0.000027	0.000061
172	Host Hotels & Resorts	HST	2.63%	28.40%	13.03	--	--	--	--
173	Hershey	HSY	1.93%	10.52%	45.32	45.32	0.0020	0.000040	0.000215
174	Humana	HUM	0.63%	14.71%	63.58	63.58	0.0029	0.000018	0.000423
175	Howmet Aerospace	HWM	0.40%	31.30%	16.39	--	--	--	--
176	International Business Machines	IBM	4.69%	6.67%	127.26	127.26	0.0057	0.000270	0.000383
177	Intercontinental Exchange	ICE	1.43%	6.25%	59.53	59.53	0.0027	0.000038	0.000168
178	IDEX	IEX	1.03%	12.00%	17.58	17.58	0.0008	0.000008	0.000095
179	International Flavors & Fragrances	IFF	2.90%	3.69%	28.50	28.50	0.0013	0.000037	0.000048
180	Intel	INTC	4.92%	-25.03%	122.57	--	--	--	--

S&P 500 / IBES

	(a)		(a)	(b)	(a)				
				IBES	Market			Weighted	
	Company	Ticker	Dividend Yield	Yahoo Growth	Cap ($bil.)	Mkt. Cap.	Weight	Dividend Yield	Growth Rate
181	Intuit	INTU	0.78%	15.01%	112.90	112.90	0.0051	0.000040	0.000766
182	International Paper	IP	5.09%	19.20%	12.92	12.92	0.0006	0.000030	0.000112
183	The Interpublic Group of Companies	IPG	3.42%	4.50%	14.40	14.40	0.0007	0.000022	0.000029
184	Ingersoll Rand	IR	0.14%	9.90%	22.66	22.66	0.0010	0.000001	0.000101
185	Iron Mountain	IRM	4.72%	6.44%	15.27	15.27	0.0007	0.000033	0.000044
186	Illinois Tool Works	ITW	2.29%	4.99%	70.16	70.16	0.0032	0.000073	0.000158
187	Invesco	IVZ	4.44%	-1.82%	8.19	--	--	--	--
188	JACOBS SOLUTNS	J	0.76%	10.88%	15.55	15.55	0.0007	0.000005	0.000076
189	J.B. Hunt Transport Services	JBHT	0.89%	13.83%	19.53	19.53	0.0009	0.000008	0.000122
190	Johnson Controls International	JCI	2.06%	15.45%	46.90	46.90	0.0021	0.000044	0.000327
191	Jack Henry & Associates	JKHY	1.10%	9.00%	13.05	13.05	0.0006	0.000006	0.000053
192	Johnson & Johnson	JNJ	2.67%	3.89%	443.59	443.59	0.0200	0.000535	0.000780
193	Juniper Networks	JNPR	2.63%	15.95%	10.38	10.38	0.0005	0.000012	0.000075
194	JPMorgan Chase & Co.	JPM	3.09%	-0.99%	408.07	--	--	--	--
195	Kellogg's	K	3.50%	1.69%	23.21	23.21	0.0010	0.000037	0.000018
196	Keurig Dr Pepper	KDP	2.29%	7.03%	49.51	49.51	0.0022	0.000051	0.000157
197	KeyCorp	KEY	4.47%	6.00%	17.10	17.10	0.0008	0.000035	0.000046
198	Kraft Heinz	KHC	4.01%	-1.18%	49.02	--	--	--	--
199	Kimco Realty	KIM	4.62%	-23.27%	13.62	--	--	--	--
200	KLA	KLAC	1.23%	4.18%	59.89	59.89	0.0027	0.000033	0.000113
201	KimberlyClark	KMB	3.51%	9.49%	44.57	44.57	0.0020	0.000071	0.000191
202	Kinder Morgan	KMI	6.02%	-6.40%	41.51	--	--	--	--
203	Coca-Cola	KO	3.02%	5.42%	263.46	263.46	0.0119	0.000359	0.000645
204	The Kroger Co.	KR	2.32%	11.65%	32.15	32.15	0.0015	0.000034	0.000169
205	Loews	L	0.41%	14.03%	14.43	14.43	0.0007	0.000003	0.000091
206	Leidos	LDOS	1.49%	5.40%	13.45	13.45	0.0006	0.000009	0.000033
207	Lennar	LEN	1.60%	23.70%	28.84	--	--	--	--
208	Laboratory Corp. of America	LH	1.14%	-13.85%	22.73	--	--	--	--
209	L3Harris Technologies	LHX	2.27%	41.80%	37.77	--	--	--	--
210	Linde	LIN	1.43%	7.82%	161.35	161.35	0.0073	0.000104	0.000570
211	LKQ	LKQ	1.91%	33.50%	15.56	--	--	--	--
212	Eli Lilly	LLY	1.29%	17.90%	332.46	332.46	0.0150	0.000194	0.002688
213	Lockheed Martin	LMT	2.64%	9.57%	119.02	119.02	0.0054	0.000142	0.000515
214	Lincoln National	LNC	5.49%	5.30%	5.55	5.55	0.0003	0.000014	0.000013
215	Alliant Energy	LNT	3.24%	5.55%	13.66	13.66	0.0006	0.000020	0.000034
216	Lowe's Companies	LOW	2.14%	9.90%	125.93	125.93	0.0057	0.000122	0.000563
217	Lam Research	LRCX	1.43%	2.28%	66.61	66.61	0.0030	0.000043	0.000069
218	Southwest Airlines	LUV	1.95%	59.76%	21.89	--	--	--	--
219	Lamb Weston	LW	1.18%	40.50%	14.06	--	--	--	--
220	LyondellBasell Industries	LYB	5.12%	-11.09%	30.27	--	--	--	--
221	Mastercard	MA	0.60%	20.34%	368.24	--	--	--	--
222	MidAmerica Apartment Communities	MAA	3.45%	7.00%	18.74	18.74	0.0008	0.000029	0.000059
223	Marriott International	MAR	0.93%	40.50%	55.02	--	--	--	--
224	Masco	MAS	2.24%	-0.04%	11.56	--	--	--	--
225	McDonald's	MCD	2.23%	7.40%	199.95	199.95	0.0090	0.000201	0.000668
226	Microchip Technology	MCHP	1.72%	12.60%	41.87	41.87	0.0019	0.000033	0.000238
227	McKesson	MCK	0.57%	10.54%	53.40	53.40	0.0024	0.000014	0.000254
228	Moody's	MCO	0.89%	-1.39%	57.83	--	--	--	--
229	Mondelez International	MDLZ	2.37%	5.07%	88.88	88.88	0.0040	0.000095	0.000204
230	Medtronic	MDT	3.60%	2.71%	108.01	108.01	0.0049	0.000176	0.000132
231	MetLife	MET	2.88%	0.24%	56.34	56.34	0.0025	0.000073	0.000006
232	MGM Resorts International	MGM	0.03%	65.70%	15.66	--	--	--	--
233	McCormick & Company	MKC	2.00%	0.31%	20.91	20.91	0.0009	0.000019	0.000003
234	MarketAxess	MKTX	0.77%	14.25%	13.67	13.67	0.0006	0.000005	0.000088
235	Martin Marietta Materials	MLM	0.76%	14.80%	21.57	21.57	0.0010	0.000007	0.000144
236	Marsh & McLennan Companies	MMC	1.43%	9.03%	86.04	86.04	0.0039	0.000056	0.000351
237	3M	MMM	5.28%	-0.28%	62.42	--	--	--	--
238	Altria Group	MO	8.37%	4.16%	80.60	80.60	0.0036	0.000305	0.000151
239	The Mosaic Company	MOS	1.66%	14.70%	16.38	16.38	0.0007	0.000012	0.000109
240	Marathon Petroleum	MPC	2.31%	55.80%	60.88	--	--	--	--

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	(a)		(a)	(b)	(a)				
				IBES	Market			Weighted	
	Company	Ticker	Dividend Yield	Yahoo Growth	Cap ($bil.)	Mkt. Cap.	Weight	Dividend Yield	Growth Rate
241	Monolithic Power Systems	MPWR	0.71%	24.54%	19.94	--	--	--	--
242	Merck & Co.	MRK	2.69%	11.70%	275.10	275.10	0.0124	0.000334	0.001454
243	Marathon Oil	MRO	1.65%	32.63%	17.91	--	--	--	--
244	Morgan Stanley	MS	3.24%	5.71%	162.02	162.02	0.0073	0.000237	0.000418
245	MSCI	MSCI	0.98%	12.94%	40.75	40.75	0.0018	0.000018	0.000238
246	Microsoft	MSFT	1.14%	11.77%	1,791.82	1,791.82	0.0809	0.000923	0.009527
247	Motorola Solutions	MSI	1.36%	11.13%	43.31	43.31	0.0020	0.000027	0.000218
248	M&T Bank	MTB	3.34%	13.03%	26.49	26.49	0.0012	0.000040	0.000156
249	Micron Technology	MU	0.75%	-35.44%	67.14	--	--	--	--
250	Nasdaq	NDAQ	1.37%	5.25%	28.64	28.64	0.0013	0.000018	0.000068
251	Nordson	NDSN	1.13%	13.00%	13.42	13.42	0.0006	0.000007	0.000079
252	NextEra Energy	NEE	2.39%	10.21%	152.18	152.18	0.0069	0.000164	0.000702
253	Newmont	NEM	3.99%	-8.80%	43.69	--	--	--	--
254	NiSource	NI	3.52%	6.35%	11.20	11.20	0.0005	0.000018	0.000032
255	NIKE	NKE	1.07%	6.77%	196.57	196.57	0.0089	0.000095	0.000601
256	Northrop Grumman	NOC	1.49%	3.00%	71.39	71.39	0.0032	0.000048	0.000097
257	NRG Energy	NRG	4.56%	-3.30%	7.69	--	--	--	--
258	Norfolk Southern	NSC	2.22%	8.48%	56.25	56.25	0.0025	0.000056	0.000215
259	NetApp	NTAP	3.01%	8.19%	14.40	14.40	0.0007	0.000020	0.000053
260	Northern Trust	NTRS	3.18%	5.80%	19.66	19.66	0.0009	0.000028	0.000052
261	Nucor	NUE	1.32%	-7.50%	40.19	--	--	--	--
262	NVIDIA	NVDA	0.08%	21.30%	476.89	--	--	--	--
263	Newell Brands	NWL	5.84%	-6.73%	6.51	--	--	--	--
264	News Corporation	NWSA	0.97%	-1.47%	11.94	--	--	--	--
265	NXP Semiconductors	NXPI	1.94%	9.67%	46.13	46.13	0.0021	0.000040	0.000202
266	Realty Income	O	4.64%	22.62%	39.80	--	--	--	--
267	Old Dominion Freight Line	ODFL	0.40%	14.04%	35.57	35.57	0.0016	0.000006	0.000226
268	Organon & Co.	OGN	3.66%	-2.00%	7.79	--	--	--	--
269	ONEOK	OKE	5.87%	12.50%	30.86	30.86	0.0014	0.000082	0.000174
270	Omnicom Group	OMC	3.40%	2.70%	17.69	17.69	0.0008	0.000027	0.000022
271	Oracle	ORCL	1.43%	10.01%	241.58	241.58	0.0109	0.000156	0.001092
272	Otis Worldwide	OTIS	1.43%	7.10%	33.73	33.73	0.0015	0.000022	0.000108
273	Occidental Petroleum	OXY	1.13%	25.75%	58.59	--	--	--	--
274	PARAMOUNT GLBL	PARA	4.38%	-11.33%	14.23	--	--	--	--
275	Paychex	PAYX	2.92%	7.74%	41.68	41.68	0.0019	0.000055	0.000146
276	PACCAR	PCAR	2.69%	8.77%	38.54	38.54	0.0017	0.000047	0.000153
277	Healthpeak Properties	PEAK	4.43%	-16.80%	14.60	--	--	--	--
278	Public Service Enterprise Group	PEG	3.70%	3.12%	30.24	30.24	0.0014	0.000051	0.000043
279	PepsiCo	PEP	2.68%	7.91%	237.09	237.09	0.0107	0.000287	0.000847
280	Pfizer	PFE	3.64%	-0.20%	252.93	--	--	--	--
281	Principal Financial Group	PFG	2.82%	5.87%	22.21	22.21	0.0010	0.000028	0.000059
282	Procter & Gamble	PG	2.58%	5.07%	334.34	334.34	0.0151	0.000390	0.000766
283	The Progressive	PGR	0.30%	26.17%	79.26	--	--	--	--
284	ParkerHannifin	PH	1.72%	10.17%	39.83	39.83	0.0018	0.000031	0.000183
285	PulteGroup	PHM	1.23%	9.20%	11.86	11.86	0.0005	0.000007	0.000049
286	Packaging Corporation of America	PKG	3.87%	-7.74%	11.97	--	--	--	--
287	PerkinElmer	PKI	0.21%	-13.86%	17.05	--	--	--	--
288	Prologis	PLD	2.67%	-6.05%	92.99	--	--	--	--
289	Philip Morris International	PM	4.91%	3.62%	160.32	160.32	0.0072	0.000356	0.000262
290	The PNC Financial Services Group	PNC	4.03%	10.96%	64.71	64.71	0.0029	0.000118	0.000320
291	Pentair	PNR	1.73%	5.10%	8.35	8.35	0.0004	0.000007	0.000019
292	Pinnacle West Capital	PNW	4.72%	-3.96%	8.34	--	--	--	--
293	Pool Corp.	POOL	1.10%	12.29%	14.20	14.20	0.0006	0.000007	0.000079
294	PPG Industries	PPG	1.94%	11.46%	30.12	30.12	0.0014	0.000026	0.000156
295	PPL	PPL	3.05%	17.77%	21.72	21.72	0.0010	0.000030	0.000174
296	Prudential Financial	PRU	4.88%	-3.85%	37.48	--	--	--	--
297	Public Storage	PSA	2.74%	17.00%	51.03	51.03	0.0023	0.000063	0.000392
298	Phillips 66	PSX	3.66%	30.30%	51.45	--	--	--	--
299	Quanta Services	PWR	0.22%	17.86%	21.29	21.29	0.0010	0.000002	0.000172
300	Pioneer Natural Resources	PXD	9.65%	27.41%	56.16	--	--	--	--

S&P 500 / IBES

	(a)		(a)	(b)	(a)				
				IBES	Market			Weighted	
	Company	Ticker	Dividend Yield	Yahoo Growth	Cap ($bil.)	Mkt. Cap.	Weight	Dividend Yield	Growth Rate
301	Qualcomm	QCOM	2.29%	-7.47%	147.17	--	--	--	--
302	Everest Re Group	RE	1.91%	12.00%	13.72	13.72	0.0006	0.000012	0.000074
303	Regency Centers	REG	3.94%	-0.69%	11.26	--	--	--	--
304	Regions Financial	RF	3.76%	-0.88%	21.40	--	--	--	--
305	Robert Half International	RHI	2.43%	8.80%	8.56	8.56	0.0004	0.000009	0.000034
306	Raymond James Financial	RJF	1.42%	16.41%	25.45	25.45	0.0011	0.000016	0.000189
307	Ralph Lauren	RL	2.42%	7.84%	8.22	8.22	0.0004	0.000009	0.000029
308	ResMed	RMD	0.76%	10.20%	33.86	33.86	0.0015	0.000012	0.000156
309	Rockwell Automation	ROK	1.70%	10.70%	32.03	32.03	0.0014	0.000025	0.000155
310	Rollins	ROL	1.43%	8.20%	17.90	17.90	0.0008	0.000012	0.000066
311	Roper Technologies	ROP	0.62%	9.10%	47.11	47.11	0.0021	0.000013	0.000194
312	Ross Stores	ROST	1.12%	5.66%	41.45	41.45	0.0019	0.000021	0.000106
313	Republic Services	RSG	1.59%	10.69%	39.27	39.27	0.0018	0.000028	0.000190
314	Raytheon Technologies	RTX	2.20%	13.40%	147.02	147.02	0.0066	0.000146	0.000890
315	SBA Communications	SBAC	1.11%	31.43%	31.49	--	--	--	--
316	Signature Bank	SBNY	2.22%	6.32%	7.93	7.93	0.0004	0.000008	0.000023
317	Starbucks	SBUX	1.98%	17.78%	122.80	122.80	0.0055	0.000110	0.000986
318	Charles Schwab	SCHW	1.16%	18.47%	148.61	148.61	0.0067	0.000078	0.001240
319	Sealed Air	SEE	1.55%	8.67%	7.48	7.48	0.0003	0.000005	0.000029
320	SherwinWilliams	SHW	1.05%	9.07%	64.03	64.03	0.0029	0.000030	0.000262
321	The J. M. Smucker Co.	SJM	2.76%	5.04%	16.01	16.01	0.0007	0.000020	0.000036
322	Schlumberger	SLB	1.78%	44.40%	79.76	--	--	--	--
323	SnapOn	SNA	2.69%	2.80%	12.79	12.79	0.0006	0.000016	0.000016
324	The Southern Company	SO	4.04%	6.48%	73.22	73.22	0.0033	0.000134	0.000214
325	Simon Property Group	SPG	6.15%	8.60%	41.14	41.14	0.0019	0.000114	0.000160
326	S&P Global	SPGI	0.93%	7.90%	119.37	119.37	0.0054	0.000050	0.000426
327	Sempra Energy	SRE	3.02%	4.14%	49.92	49.92	0.0023	0.000068	0.000093
328	STERIS	STE	0.92%	10.00%	20.47	20.47	0.0009	0.000009	0.000092
329	Steel Dynamics	STLD	1.25%	-15.40%	19.49	--	--	--	--
330	State Street	STT	3.02%	8.87%	32.45	32.45	0.0015	0.000044	0.000130
331	Seagate Technology	STX	4.50%	-7.77%	12.85	--	--	--	--
332	Constellation Brands	STZ	1.40%	8.62%	42.87	42.87	0.0019	0.000027	0.000167
333	Stanley Black & Decker	SWK	3.75%	-9.44%	12.69	--	--	--	--
334	Skyworks Solutions	SWKS	2.27%	15.00%	17.52	17.52	0.0008	0.000018	0.000119
335	Synchrony Financial	SYF	2.50%	-3.62%	16.92	--	--	--	--
336	Stryker	SYK	1.19%	7.24%	95.72	95.72	0.0043	0.000051	0.000313
337	Sysco	SYY	2.48%	18.40%	40.11	40.11	0.0018	0.000045	0.000333
338	AT&T	T	5.44%	0.76%	145.52	145.52	0.0066	0.000358	0.000050
339	Molson Coors	TAP	3.02%	1.38%	12.00	12.00	0.0005	0.000016	0.000007
340	BioTechne Corp	TECH	0.41%	11.42%	12.53	12.53	0.0006	0.000002	0.000065
341	TE Connectivity	TEL	1.81%	11.00%	39.59	39.59	0.0018	0.000032	0.000197
342	Teradyne	TER	0.43%	10.67%	16.11	16.11	0.0007	0.000003	0.000078

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	(a)		(a)	(b)	(a)				
				IBES	Market			Weighted	
	Company	Ticker	Dividend Yield	Yahoo Growth	Cap ($bil.)	Mkt. Cap.	Weight	Dividend Yield	Growth Rate
343	Truist Financial	TFC	4.43%	-0.29%	64.72	--	--	--	--
344	Teleflex	TFX	0.57%	10.40%	11.52	11.52	0.0005	0.000003	0.000054
345	Target	TGT	2.63%	-4.87%	75.59	--	--	--	--
346	The TJX Companies	TJX	1.45%	11.90%	95.57	95.57	0.0043	0.000063	0.000514
347	Thermo Fisher Scientific	TMO	0.21%	3.51%	225.64	225.64	0.0102	0.000021	0.000358
348	Tapestry	TPR	2.98%	13.85%	10.52	10.52	0.0005	0.000014	0.000066
349	Targa Resources	TRGP	2.39%	32.20%	17.04	--	--	--	--
350	T. Rowe Price	TROW	4.25%	-17.82%	26.12	--	--	--	--
351	The Travelers Companies	TRV	1.95%	8.83%	44.69	44.69	0.0020	0.000039	0.000178
352	Tractor Supply Co.	TSCO	1.87%	10.11%	23.65	23.65	0.0011	0.000020	0.000108
353	Tyson Foods	TSN	2.92%	7.50%	23.69	23.69	0.0011	0.000031	0.000080
354	Trane Technologies	TT	1.54%	22.29%	40.13	--	--	--	--
355	Texas Instruments	TXN	2.83%	10.00%	159.29	159.29	0.0072	0.000204	0.000720
356	Textron	TXT	0.11%	23.57%	14.67	--	--	--	--
357	United Dominion Realty Trust	UDR	4.09%	-34.21%	12.92	--	--	--	--
358	Universal Health Services	UHS	0.55%	2.92%	10.44	10.44	0.0005	0.000003	0.000014
359	UnitedHealth Group	UNH	1.34%	13.93%	460.49	460.49	0.0208	0.000279	0.002898
360	Union Pacific	UNP	2.60%	9.05%	123.23	123.23	0.0056	0.000145	0.000504
361	United Parcel Service	UPS	3.43%	4.62%	153.47	153.47	0.0069	0.000238	0.000320
362	U.S. Bancorp	USB	3.95%	3.84%	73.03	73.03	0.0033	0.000130	0.000127
363	Visa	V	0.80%	15.48%	425.51	425.51	0.0192	0.000154	0.002976
364	V.F. Corporation	VFC	6.83%	0.75%	11.61	11.61	0.0005	0.000036	0.000004
365	VICI Properties	VICI	4.63%	7.10%	21.21	21.21	0.0010	0.000044	0.000068
366	Valero Energy	VLO	2.74%	-19.80%	55.26	--	--	--	--
367	Vulcan Materials	VMC	0.90%	14.57%	23.75	23.75	0.0011	0.000010	0.000156
368	Verisk Analytics	VRSK	0.69%	9.06%	28.25	28.25	0.0013	0.000009	0.000116
369	Ventas	VTR	3.78%	-19.70%	20.29	--	--	--	--
370	Viatris	VTRS	4.12%	-3.85%	14.12	--	--	--	--
371	Verizon Communications	VZ	6.47%	0.82%	169.38	169.38	0.0077	0.000495	0.000063
372	Westinghouse Air Brake Technologies	WAB	0.58%	7.30%	18.86	18.86	0.0009	0.000005	0.000062
373	Walgreens Boots Alliance	WBA	5.35%	2.30%	31.29	31.29	0.0014	0.000076	0.000033
374	WEC Energy Group	WEC	3.36%	6.37%	29.25	29.25	0.0013	0.000044	0.000084
375	Welltower	WELL	3.52%	21.60%	33.03	--	--	--	--
376	Wells Fargo & Company	WFC	2.76%	5.68%	172.09	172.09	0.0078	0.000215	0.000442
377	Whirlpool	WHR	4.60%	-11.67%	8.21	--	--	--	--
378	Waste Management	WM	1.70%	11.56%	62.86	62.86	0.0028	0.000048	0.000328
379	The Williams Companies	WMB	5.41%	7.30%	38.25	38.25	0.0017	0.000093	0.000126
380	Walmart	WMT	1.63%	4.34%	384.46	384.46	0.0174	0.000283	0.000754
381	W.R. Berkley	WRB	0.56%	9.00%	18.98	18.98	0.0009	0.000005	0.000077
382	WestRock	WRK	3.00%	11.40%	9.33	9.33	0.0004	0.000013	0.000048
383	West Pharmaceutical Services	WST	0.29%	27.20%	19.27	--	--	--	--
384	Willis Towers Watson	WTW	1.42%	16.77%	27.55	27.55	0.0012	0.000018	0.000209
385	Weyerhaeuser	WY	2.20%	5.00%	24.15	24.15	0.0011	0.000024	0.000055
386	Xcel Energy	XEL	3.02%	7.01%	37.50	37.50	0.0017	0.000051	0.000119
387	Exxon Mobil	XOM	3.22%	26.96%	466.20	--	--	--	--
388	Dentsply Sirona	XRAY	1.37%	3.90%	7.86	7.86	0.0004	0.000005	0.000014
389	Xylem	XYL	1.17%	18.76%	18.48	18.48	0.0008	0.000010	0.000157
390	Yum Brands	YUM	1.77%	9.37%	36.69	36.69	0.0017	0.000029	0.000155
391	Zimmer Biomet	ZBH	0.80%	7.00%	26.20	26.20	0.0012	0.000009	0.000083
392	Zions Bancorporation	ZION	3.27%	-32.40%	7.78	--	--	--	--
393	Zoetis	ZTS	0.91%	10.23%	77.20	77.20	0.0035	0.000032	0.000357
						22,136.17	1.0000		
	Weighted Average							**2.01%**	**8.63%**

n/a Not Available

(a) www.valueline.com (retrieved Jan. 31, 2023).

(b) IBES growth rates from yahoo.com (retrieved Jan. 31, 2023). Eliminated growth rates greater than 20%, as well as all negative values.

Exhibit No. RG&E-107

VALUE LINE

		(a)	(b)		(c)		(d)		(e)	(f)		
		Market Return (R_m)				Market						
	Company	Div Yield	Proj. Growth	Cost of Equity	Risk-Free Rate	Risk Premium	Beta	Unadjusted K_e	Market Cap	Size Adjustment	CAPM Result	Break (B Pts)
1	Exelon Corp.	2.06%	10.23%	12.29%	3.68%	8.61%	n/a	n/a	$41,500	-0.26%	n/a	--
2	CenterPoint Energy	2.06%	10.23%	12.29%	3.68%	8.61%	1.10	13.15%	$19,400	0.45%	13.60%	43
3	PPL Corp.	2.06%	10.23%	12.29%	3.68%	8.61%	1.05	12.72%	$21,700	0.45%	13.17%	31
4	OGE Energy Corp.	2.06%	10.23%	12.29%	3.68%	8.61%	1.00	12.29%	$8,000	0.57%	12.86%	42
5	Black Hills Corp.	2.06%	10.23%	12.29%	3.68%	8.61%	0.95	11.86%	$4,600	0.58%	12.44%	13
6	DTE Energy Co.	2.06%	10.23%	12.29%	3.68%	8.61%	0.95	11.86%	$22,300	0.45%	12.31%	0
7	Entergy Corp.	2.06%	10.23%	12.29%	3.68%	8.61%	0.95	11.86%	$23,000	0.45%	12.31%	31
8	Pinnacle West Capital	2.06%	10.23%	12.29%	3.68%	8.61%	0.90	11.43%	$8,500	0.57%	12.00%	12
9	Evergy Inc.	2.06%	10.23%	12.29%	3.68%	8.61%	0.90	11.43%	$13,500	0.45%	11.88%	0
10	Eversource Energy	2.06%	10.23%	12.29%	3.68%	8.61%	0.90	11.43%	$28,300	0.45%	11.88%	0
11	Pub Sv Enterprise Grp.	2.06%	10.23%	12.29%	3.68%	8.61%	0.90	11.43%	$30,500	0.45%	11.88%	28
12	NextEra Energy, Inc.	2.06%	10.23%	12.29%	3.68%	8.61%	0.95	11.86%	$149,100	-0.26%	11.60%	--
13	Sempra Energy	2.06%	10.23%	12.29%	3.68%	8.61%	0.95	11.86%	$49,400	-0.26%	11.60%	--
14	Portland General Elec.	2.06%	10.23%	12.29%	3.68%	8.61%	0.85	11.00%	$4,400	0.58%	11.58%	2
15	Alliant Energy	2.06%	10.23%	12.29%	3.68%	8.61%	0.85	11.00%	$14,000	0.45%	11.45%	13
16	Ameren Corp.	2.06%	10.23%	12.29%	3.68%	8.61%	0.85	11.00%	$23,000	0.45%	11.45%	0
17	Southern Company	2.06%	10.23%	12.29%	3.68%	8.61%	0.90	11.43%	$71,300	-0.26%	11.17%	28
18	CMS Energy Corp.	2.06%	10.23%	12.29%	3.68%	8.61%	0.80	10.57%	$17,600	0.45%	11.02%	15
19	WEC Energy Group	2.06%	10.23%	12.29%	3.68%	8.61%	0.80	10.57%	$30,500	0.45%	11.02%	0
20	Dominion Energy	2.06%	10.23%	12.29%	3.68%	8.61%	0.85	11.00%	$52,200	-0.26%	10.74%	28
21	Duke Energy Corp.	2.06%	10.23%	12.29%	3.68%	8.61%	0.85	11.00%	$78,300	-0.26%	10.74%	0
22	Xcel Energy Inc.	2.06%	10.23%	12.29%	3.68%	8.61%	0.80	10.57%	$39,400	-0.26%	10.31%	43
23	American Elec Pwr	2.06%	10.23%	12.29%	3.68%	8.61%	0.75	10.14%	$48,900	-0.26%	9.88%	43
24	Consolidated Edison	2.06%	10.23%	12.29%	3.68%	8.61%	0.75	10.14%	$33,700	-0.26%	9.88%	0
	Lower End (g)										**9.88%**	
	Upper End (g)										**13.60%**	
	Median (g)										**11.60%**	
	Midpoint										**11.74%**	
	Median - All Values										**11.60%**	
	Low-End Test (h)										**7.38%**	
	High-End Test (i)										**23.20%**	

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (retrieved Jan. 31, 2023).
(b) www.valueline.com (retrieved Jan. 31, 2023).. Eliminated growth rates greater than 20%, as well as all negative values.
(c) Six-month average yield on 30-year Treasury bonds for Jan. 2023 from https://fred.stlouisfed.org/.
(d) The Value Line Investment Survey, Summary & Index (Jan. 27, 2023).
(e) The Value Line Investment Survey (Dec. 9, 2022, Jan. 20 and Feb. 10, 2023).
(f) Kroll, 2022 CRSP Deciles Size Premium, Cost of Capital Navigator (2023).
(g) Excludes highlighted values.
(h) Average Baa utility bond yield for six-months ending Jan. 2023, plus 20% of CAPM market risk premium.
(i) 200% of Median - All Values.

Exhibit No. RG&E-108

S&P 500 / VALUE LINE

	(a)		(a)	(b)	(a)			Weighted	
	Company	**Ticker**	**Dividend Yield**	**Value Line Growth**	**Market Cap ($bil.)**	**Mkt. Cap.**	**Weight**	**Dividend Yield**	**Growth Rate**
1	Agilent Technologies	A	0.58%	12.00%	45.99	45.99	0.0019	0.000011	0.000227
2	Advance Auto Parts	AAP	4.02%	12.00%	8.90	8.90	0.0004	0.000015	0.000044
3	Apple	AAPL	0.65%	13.50%	2,283.29	2,283.29	0.0940	0.000611	0.012693
4	AbbVie	ABBV	4.01%	4.50%	261.35	261.35	0.0108	0.000432	0.000484
5	AmerisourceBergen	ABC	1.19%	8.50%	33.98	33.98	0.0014	0.000017	0.000119
6	Abbott Laboratories	ABT	1.84%	7.00%	193.54	193.54	0.0080	0.000147	0.000558
7	Accenture	ACN	1.67%	12.00%	172.08	172.08	0.0071	0.000118	0.000850
8	Analog Devices	ADI	1.81%	11.50%	85.79	85.79	0.0035	0.000064	0.000406
9	Archer Daniels Midland	ADM	1.87%	14.50%	46.98	46.98	0.0019	0.000036	0.000280
10	Automatic Data Processing	ADP	2.39%	11.50%	94.67	94.67	0.0039	0.000093	0.000448
11	Ameren	AEE	2.85%	6.50%	22.46	22.46	0.0009	0.000026	0.000060
12	American Electric Power	AEP	3.60%	6.50%	47.45	47.45	0.0020	0.000070	0.000127
13	AES	AES	2.46%	n/a	18.04	--	--	--	--
14	Aflac	AFL	2.34%	9.00%	45.60	45.60	0.0019	0.000044	0.000169
15	American International Group	AIG	2.02%	6.50%	47.45	47.45	0.0020	0.000039	0.000127
16	Assurant	AIZ	2.14%	12.00%	6.91	6.91	0.0003	0.000006	0.000034
17	Arthur J. Gallagher & Co.	AJG	1.10%	18.50%	41.56	41.56	0.0017	0.000019	0.000317
18	Albemarle	ALB	0.58%	21.50%	31.74	--	--	--	--
19	Allstate	ALL	2.64%	2.50%	34.21	34.21	0.0014	0.000037	0.000035
20	Allegion	ALLE	1.45%	11.00%	9.96	9.96	0.0004	0.000006	0.000045
21	Applied Materials	AMAT	0.97%	16.50%	96.17	96.17	0.0040	0.000038	0.000653
22	Amcor	AMCR	4.16%	14.50%	17.54	17.54	0.0007	0.000030	0.000105
23	AMETEK	AME	0.62%	10.00%	32.79	32.79	0.0014	0.000008	0.000135
24	Amgen	AMGN	3.35%	5.50%	136.86	136.86	0.0056	0.000189	0.000310
25	Ameriprise Financial	AMP	1.56%	13.50%	36.60	36.60	0.0015	0.000024	0.000203
26	American Tower	AMT	2.87%	6.00%	101.81	101.81	0.0042	0.000120	0.000252
27	Aon	AON	0.73%	7.50%	67.04	67.04	0.0028	0.000020	0.000207
28	A. O. Smith	AOS	1.98%	11.00%	9.25	9.25	0.0004	0.000008	0.000042
29	APA	APA	2.38%	50.00%	14.27	--	--	--	--
30	Air Products and Chemicals	APD	2.08%	11.50%	69.22	69.22	0.0029	0.000059	0.000328
31	Amphenol	APH	1.06%	13.00%	47.22	47.22	0.0019	0.000021	0.000253
32	Alexandria Real Estate Equities	ARE	3.09%	10.00%	24.77	24.77	0.0010	0.000032	0.000102
33	Atmos Energy	ATO	2.62%	7.50%	16.22	16.22	0.0007	0.000018	0.000050
34	Activision Blizzard	ATVI	0.70%	11.50%	58.41	58.41	0.0024	0.000017	0.000277
35	AvalonBay Communities	AVB	3.88%	9.00%	24.23	24.23	0.0010	0.000039	0.000090
36	Broadcom	AVGO	3.14%	30.00%	237.20	--	--	--	--
37	Avery Dennison	AVY	1.73%	10.50%	15.01	15.01	0.0006	0.000011	0.000065
38	American Water Works	AWK	1.81%	3.00%	28.28	28.28	0.0012	0.000021	0.000035
39	American Express	AXP	1.33%	10.00%	117.11	117.11	0.0048	0.000064	0.000482
40	Bank of America	BAC	2.64%	8.50%	279.81	279.81	0.0115	0.000304	0.000979
41	Ball	BALL	1.48%	21.50%	17.78	--	--	--	--
42	Baxter International	BAX	2.51%	8.00%	23.26	23.26	0.0010	0.000024	0.000077
43	Bath & Body Works, Inc.	BBWI	1.85%	20.50%	10.33	--	--	--	--
44	Best Buy	BBY	4.58%	4.00%	18.92	18.92	0.0008	0.000036	0.000031
45	Becton, Dickinson and Company	BDX	1.48%	4.50%	69.93	69.93	0.0029	0.000043	0.000130
46	Franklin Resources	BEN	3.98%	3.50%	15.08	15.08	0.0006	0.000025	0.000022
47	BrownForman	BF/B	1.20%	14.50%	32.75	32.75	0.0013	0.000016	0.000196
48	The Bank of New York Mellon	BK	3.12%	6.50%	40.41	40.41	0.0017	0.000052	0.000108
49	Baker Hughes	BKR	2.45%	n/a	31.28	--	--	--	--
50	BlackRock	BLK	2.66%	7.50%	113.03	113.03	0.0047	0.000124	0.000349
51	Bristol Myers Squibb	BMY	3.12%	44.00%	155.57	--	--	--	--
52	Broadridge Financial Solutions	BR	1.95%	9.50%	17.54	17.54	0.0007	0.000014	0.000069
53	Brown & Brown	BRO	0.78%	8.00%	16.70	16.70	0.0007	0.000005	0.000055
54	BorgWarner	BWA	1.52%	9.50%	10.50	10.50	0.0004	0.000007	0.000041
55	Boston Properties	BXP	5.51%	-1.00%	11.13	--	--	--	--
56	Citigroup	C	3.93%	3.50%	100.52	100.52	0.0041	0.000163	0.000145
57	Conagra Brands	CAG	3.64%	3.50%	17.70	17.70	0.0007	0.000027	0.000026
58	Cardinal Health	CAH	2.62%	5.00%	19.84	19.84	0.0008	0.000021	0.000041
59	Carrier Global	CARR	1.70%	n/a	36.39	--	--	--	--
60	Caterpillar	CAT	1.86%	11.00%	134.49	134.49	0.0055	0.000103	0.000609

S&P 500 / VALUE LINE

	(a)		(a)	(b)	(a)				
								Weighted	
	Company	Ticker	Dividend Yield	Value Line Growth	Market Cap ($bil.)	Mkt. Cap.	Weight	Dividend Yield	Growth Rate
61	Chubb Limited	CB	1.47%	14.50%	95.36	95.36	0.0039	0.000058	0.000569
62	Cboe Global Markets	CBOE	1.63%	10.00%	12.98	12.98	0.0005	0.000009	0.000053
63	Crown Castle Inc.	CCI	4.30%	10.50%	62.99	62.99	0.0026	0.000112	0.000272
64	CDW	CDW	1.23%	9.00%	25.99	25.99	0.0011	0.000013	0.000096
65	Celanese	CE	2.31%	7.50%	13.17	13.17	0.0005	0.000013	0.000041
66	Constellation Energy Corporation	CEG	0.67%	n/a	27.27	--	--	--	--
67	CF Industries	CF	1.91%	33.50%	16.56	--	--	--	--
68	Citizens Financial Group	CFG	4.02%	7.50%	21.20	21.20	0.0009	0.000035	0.000065
69	Church & Dwight Co.	CHD	1.28%	6.00%	19.95	19.95	0.0008	0.000011	0.000049
70	C.H. Robinson Worldwide	CHRW	2.52%	8.50%	11.68	11.68	0.0005	0.000012	0.000041
71	Cigna	CI	1.47%	10.00%	97.98	97.98	0.0040	0.000059	0.000403
72	Cincinnati Financial	CINF	2.80%	9.00%	16.52	16.52	0.0007	0.000019	0.000061
73	ColgatePalmolive	CL	2.48%	6.50%	63.28	63.28	0.0026	0.000065	0.000169
74	Clorox	CLX	3.34%	7.50%	17.45	17.45	0.0007	0.000024	0.000054
75	Comerica	CMA	3.80%	9.00%	9.36	9.36	0.0004	0.000015	0.000035
76	Comcast	CMCSA	2.69%	8.50%	173.37	173.37	0.0071	0.000192	0.000607
77	CME Group	CME	2.31%	8.50%	62.22	62.22	0.0026	0.000059	0.000218
78	Cummins	CMI	2.55%	8.50%	34.72	34.72	0.0014	0.000036	0.000122
79	CMS Energy	CMS	2.96%	6.50%	18.04	18.04	0.0007	0.000022	0.000048
80	CenterPoint Energy	CNP	2.53%	6.50%	18.91	18.91	0.0008	0.000020	0.000051
81	Capital One Financial	COF	2.07%	-1.00%	44.34	--	--	--	--
82	The Cooper Companies	COO	0.02%	12.00%	16.94	16.94	0.0007	0.000000	0.000084
83	ConocoPhillips	COP	1.72%	20.00%	149.99	149.99	0.0062	0.000106	0.001235
84	Costco Wholesale	COST	0.76%	12.50%	217.87	217.87	0.0090	0.000068	0.001121
85	Campbell Soup	CPB	2.87%	4.50%	15.45	15.45	0.0006	0.000018	0.000029
86	Camden Property Trust	CPT	3.44%	3.50%	12.33	12.33	0.0005	0.000017	0.000018
87	Cisco Systems	CSCO	3.23%	9.00%	196.86	196.86	0.0081	0.000262	0.000730
88	CSX	CSX	1.29%	10.50%	65.26	65.26	0.0027	0.000035	0.000282
89	Cintas	CTAS	1.05%	14.00%	44.39	44.39	0.0018	0.000019	0.000256
90	Coterra Energy	CTRA	2.39%	n/a	20.42	--	--	--	--
91	Cognizant Technology Solutions	CTSH	1.82%	9.50%	32.97	32.97	0.0014	0.000025	0.000129
92	Corteva	CTVA	0.98%	16.50%	45.22	45.22	0.0019	0.000018	0.000307
93	CVS Health	CVS	2.82%	6.00%	112.76	112.76	0.0046	0.000131	0.000279
94	Chevron	CVX	3.24%	45.00%	346.28	--	--	--	--
95	Dominion Energy	D	4.48%	5.50%	51.91	51.91	0.0021	0.000096	0.000118
96	DuPont de Nemours	DD	1.90%	8.50%	36.53	36.53	0.0015	0.000029	0.000128
97	Deere & Company	DE	1.16%	16.50%	123.58	123.58	0.0051	0.000059	0.000840
98	Discover Financial Services	DFS	2.09%	8.50%	31.39	31.39	0.0013	0.000027	0.000110
99	Dollar General	DG	0.92%	10.00%	53.30	53.30	0.0022	0.000020	0.000219
100	Quest Diagnostics	DGX	1.82%	4.00%	16.52	16.52	0.0007	0.000012	0.000027
101	D.R. Horton	DHI	1.05%	0.50%	32.84	32.84	0.0014	0.000014	0.000007
102	Danaher	DHR	0.38%	16.00%	191.40	191.40	0.0079	0.000030	0.001261
103	Digital Realty Trust	DLR	4.81%	-3.50%	30.49	--	--	--	--
104	Dover	DOV	1.42%	7.50%	19.91	19.91	0.0008	0.000012	0.000061
105	Dow	DOW	5.18%	13.50%	40.74	40.74	0.0017	0.000087	0.000226
106	Domino's Pizza	DPZ	1.32%	14.00%	12.41	12.41	0.0005	0.000007	0.000072
107	Darden Restaurants	DRI	3.28%	21.50%	17.99	--	--	--	--
108	DTE Energy	DTE	3.36%	4.50%	21.97	21.97	0.0009	0.000030	0.000041
109	Duke Energy	DUK	3.96%	4.00%	78.09	78.09	0.0032	0.000127	0.000129
110	Devon Energy	DVN	1.12%	33.50%	41.97	--	--	--	--
111	Electronic Arts	EA	0.64%	13.00%	35.34	35.34	0.0015	0.000009	0.000189
112	eBay	EBAY	2.04%	12.50%	26.62	26.62	0.0011	0.000022	0.000137
113	Ecolab	ECL	1.39%	10.50%	43.40	43.40	0.0018	0.000025	0.000188
114	Consolidated Edison	ED	3.41%	4.00%	33.53	33.53	0.0014	0.000047	0.000055
115	Equifax	EFX	0.73%	7.00%	26.35	26.35	0.0011	0.000008	0.000076
116	Edison International	EIX	4.37%	16.00%	25.79	25.79	0.0011	0.000046	0.000170
117	The Estee Lauder Companies	EL	0.96%	14.00%	97.81	97.81	0.0040	0.000039	0.000564
118	Elevance Health, Inc.	ELV	1.06%	12.50%	118.43	118.43	0.0049	0.000052	0.000610
119	Eastman Chemical	EMN	3.48%	7.00%	10.89	10.89	0.0004	0.000016	0.000031
120	Emerson Electric Co.	EMR	2.38%	9.50%	52.68	52.68	0.0022	0.000052	0.000206

S&P 500 / VALUE LINE

	(a)		(a)	(b)	(a)				
								Weighted	
	Company	Ticker	Dividend Yield	Value Line Growth	Market Cap ($bil.)	Mkt. Cap.	Weight	Dividend Yield	Growth Rate
121	EOG Resources	EOG	2.83%	26.00%	77.81	--	--	--	--
122	Equinix	EQIX	1.72%	15.00%	66.61	66.61	0.0027	0.000047	0.000411
123	Equity Residential	EQR	4.02%	-6.00%	23.34	--	--	--	--
124	EQT	EQT	1.81%	n/a	12.23	--	--	--	--
125	Eversource Energy	ES	3.34%	6.50%	27.69	27.69	0.0011	0.000038	0.000074
126	Essex Property Trust	ESS	4.29%	-4.00%	13.49	--	--	--	--
127	Eaton	ETN	2.04%	12.00%	63.29	63.29	0.0026	0.000053	0.000313
128	Entergy	ETR	3.98%	4.00%	21.87	21.87	0.0009	0.000036	0.000036
129	Evergy	EVRG	3.96%	7.50%	14.21	14.21	0.0006	0.000023	0.000044
130	Exelon	EXC	3.38%	-1.00%	41.16	--	--	--	--
131	Expeditors International of Washington	EXPD	1.24%	6.50%	17.15	17.15	0.0007	0.000009	0.000046
132	Extra Space Storage	EXR	4.09%	4.00%	20.32	20.32	0.0008	0.000034	0.000033
133	Ford Motor	F	4.69%	33.50%	52.93	--	--	--	--
134	Diamondback Energy	FANG	2.04%	n/a	25.83	--	--	--	--
135	Fastenal	FAST	2.83%	8.50%	28.33	28.33	0.0012	0.000033	0.000099
136	FreeportMcMoRan	FCX	1.72%	27.50%	66.66	--	--	--	--
137	FactSet Research Systems	FDS	0.90%	10.00%	15.81	15.81	0.0007	0.000006	0.000065
138	FedEx	FDX	2.45%	11.00%	47.40	47.40	0.0020	0.000048	0.000215
139	FirstEnergy	FE	3.81%	3.00%	23.44	23.44	0.0010	0.000037	0.000029
140	Fidelity National Information Services	FIS	2.75%	52.00%	44.38	--	--	--	--
141	Fifth Third Bancorp	FITB	3.78%	9.50%	24.54	24.54	0.0010	0.000038	0.000096
142	FMC	FMC	1.80%	11.00%	16.23	16.23	0.0007	0.000012	0.000074
143	Fox	FOXA	1.49%	12.00%	18.23	18.23	0.0008	0.000011	0.000090
144	First Republic Bank	FRC	0.87%	11.50%	25.19	25.19	0.0010	0.000009	0.000119
145	Federal Realty Investment Trust	FRT	3.91%	n/a	8.68	--	--	--	--
146	Fortive	FTV	0.42%	17.00%	23.62	23.62	0.0010	0.000004	0.000165
147	General Dynamics	GD	2.22%	9.00%	62.29	62.29	0.0026	0.000057	0.000231
148	GEN DIGITAL INC	GEN	2.21%	10.50%	14.94	14.94	0.0006	0.000014	0.000065
149	Gilead Sciences	GILD	3.47%	12.00%	105.42	105.42	0.0043	0.000151	0.000521
150	General Mills	GIS	2.79%	4.50%	45.96	45.96	0.0019	0.000053	0.000085
151	Globe Life	GL	0.73%	8.50%	11.71	11.71	0.0005	0.000004	0.000041
152	Corning	GLW	3.04%	17.50%	29.27	29.27	0.0012	0.000037	0.000211
153	General Motors	GM	0.99%	10.00%	51.60	51.60	0.0021	0.000021	0.000212
154	Genuine Parts	GPC	2.15%	9.00%	23.47	23.47	0.0010	0.000021	0.000087
155	Global Payments	GPN	0.99%	17.00%	30.19	30.19	0.0012	0.000012	0.000211
156	Garmin	GRMN	2.96%	5.50%	18.95	18.95	0.0008	0.000023	0.000043
157	The Goldman Sachs Group	GS	2.86%	5.00%	118.56	118.56	0.0049	0.000140	0.000244
158	W.W. Grainger	GWW	1.25%	11.00%	28.35	28.35	0.0012	0.000015	0.000128
159	Halliburton	HAL	1.60%	32.50%	36.35	--	--	--	--
160	Hasbro	HAS	4.37%	7.50%	8.85	8.85	0.0004	0.000016	0.000027
161	Huntington Bancshares	HBAN	4.20%	12.50%	21.28	21.28	0.0009	0.000037	0.000110
162	HCA Healthcare	HCA	0.88%	11.50%	72.01	72.01	0.0030	0.000026	0.000341
163	Home Depot	HD	2.65%	9.00%	323.61	323.61	0.0133	0.000353	0.001199
164	Hess	HES	0.95%	n/a	48.68	--	--	--	--
165	The Hartford Financial Services Group	HIG	2.21%	8.50%	24.63	24.63	0.0010	0.000022	0.000086
166	Huntington Ingalls Industries	HII	2.29%	10.00%	8.65	8.65	0.0004	0.000008	0.000036
167	Hilton Worldwide	HLT	0.42%	42.00%	38.63	--	--	--	--
168	Honeywell International	HON	1.99%	11.50%	138.94	138.94	0.0057	0.000114	0.000658
169	Hewlett Packard	HPE	2.98%	8.00%	20.66	20.66	0.0009	0.000025	0.000068
170	HP	HPQ	3.66%	10.50%	28.12	28.12	0.0012	0.000042	0.000122
171	Hormel Foods	HRL	2.46%	8.00%	24.45	24.45	0.0010	0.000025	0.000081
172	Host Hotels & Resorts	HST	2.63%	59.50%	13.03	--	--	--	--
173	Hershey	HSY	1.93%	9.00%	45.32	45.32	0.0019	0.000036	0.000168
174	Humana	HUM	0.63%	11.00%	63.58	63.58	0.0026	0.000016	0.000288
175	Howmet Aerospace	HWM	0.40%	16.00%	16.39	16.39	0.0007	0.000003	0.000108
176	International Business Machines	IBM	4.69%	1.50%	127.26	127.26	0.0052	0.000246	0.000079
177	Intercontinental Exchange	ICE	1.43%	7.00%	59.53	59.53	0.0025	0.000035	0.000172
178	IDEX	IEX	1.03%	11.00%	17.58	17.58	0.0007	0.000007	0.000080
179	International Flavors & Fragrances	IFF	2.90%	7.00%	28.50	28.50	0.0012	0.000034	0.000082
180	Intel	INTC	4.92%	-0.50%	122.57	--	--	--	--

S&P 500 / VALUE LINE

	(a)		(a)	(b)	(a)			Weighted	
	Company	**Ticker**	**Dividend Yield**	**Value Line Growth**	**Market Cap ($bil.)**	**Mkt. Cap.**	**Weight**	**Dividend Yield**	**Growth Rate**
181	Intuit	INTU	0.78%	16.50%	112.90	112.90	0.0046	0.000036	0.000767
182	International Paper	IP	5.09%	11.00%	12.92	12.92	0.0005	0.000027	0.000058
183	The Interpublic Group of Companies	IPG	3.42%	10.00%	14.40	14.40	0.0006	0.000020	0.000059
184	Ingersoll Rand	IR	0.14%	n/a	22.66	--	--	--	--
185	Iron Mountain	IRM	4.72%	10.00%	15.27	15.27	0.0006	0.000030	0.000063
186	Illinois Tool Works	ITW	2.29%	11.00%	70.16	70.16	0.0029	0.000066	0.000318
187	Invesco	IVZ	4.44%	8.00%	8.19	8.19	0.0003	0.000015	0.000027
188	JACOBS SOLUTNS	J	0.76%	12.00%	15.55	15.55	0.0006	0.000005	0.000077
189	J.B. Hunt Transport Services	JBHT	0.89%	11.00%	19.53	19.53	0.0008	0.000007	0.000088
190	Johnson Controls International	JCI	2.06%	12.50%	46.90	46.90	0.0019	0.000040	0.000241
191	Jack Henry & Associates	JKHY	1.10%	8.50%	13.05	13.05	0.0005	0.000006	0.000046
192	Johnson & Johnson	JNJ	2.67%	6.00%	443.59	443.59	0.0183	0.000488	0.001096
193	Juniper Networks	JNPR	2.63%	10.50%	10.38	10.38	0.0004	0.000011	0.000045
194	JPMorgan Chase & Co.	JPM	3.09%	5.00%	408.07	408.07	0.0168	0.000519	0.000840
195	Kellogg's	K	3.50%	3.50%	23.21	23.21	0.0010	0.000033	0.000033
196	Keurig Dr Pepper	KDP	2.29%	11.50%	49.51	49.51	0.0020	0.000047	0.000234
197	KeyCorp	KEY	4.47%	7.50%	17.10	17.10	0.0007	0.000031	0.000053
198	Kraft Heinz	KHC	4.01%	4.00%	49.02	49.02	0.0020	0.000081	0.000081
199	Kimco Realty	KIM	4.62%	8.50%	13.62	13.62	0.0006	0.000026	0.000048
200	KLA	KLAC	1.23%	20.00%	59.89	59.89	0.0025	0.000030	0.000493
201	KimberlyClark	KMB	3.51%	5.50%	44.57	44.57	0.0018	0.000064	0.000101
202	Kinder Morgan	KMI	6.02%	19.00%	41.51	41.51	0.0017	0.000103	0.000325
203	Coca-Cola	KO	3.02%	8.00%	263.46	263.46	0.0108	0.000328	0.000868
204	The Kroger Co.	KR	2.32%	7.50%	32.15	32.15	0.0013	0.000031	0.000099
205	Loews	L	0.41%	18.50%	14.43	14.43	0.0006	0.000002	0.000110
206	Leidos	LDOS	1.49%	8.50%	13.45	13.45	0.0006	0.000008	0.000047
207	Lennar	LEN	1.60%	8.50%	28.84	28.84	0.0012	0.000019	0.000101
208	Laboratory Corp. of America	LH	1.14%	1.50%	22.73	22.73	0.0009	0.000011	0.000014
209	L3Harris Technologies	LHX	2.27%	17.50%	37.77	37.77	0.0016	0.000035	0.000272
210	Linde	LIN	1.43%	12.00%	161.35	161.35	0.0066	0.000095	0.000797
211	LKQ	LKQ	1.91%	11.00%	15.56	15.56	0.0006	0.000012	0.000070
212	Eli Lilly	LLY	1.29%	11.50%	332.46	332.46	0.0137	0.000177	0.001574
213	Lockheed Martin	LMT	2.64%	8.00%	119.02	119.02	0.0049	0.000129	0.000392
214	Lincoln National	LNC	5.49%	11.50%	5.55	5.55	0.0002	0.000013	0.000026
215	Alliant Energy	LNT	3.24%	6.00%	13.66	13.66	0.0006	0.000018	0.000034
216	Lowe's Companies	LOW	2.14%	12.50%	125.93	125.93	0.0052	0.000111	0.000648
217	Lam Research	LRCX	1.43%	14.50%	66.61	66.61	0.0027	0.000039	0.000398
218	Southwest Airlines	LUV	1.95%	n/a	21.89	--	--	--	--
219	Lamb Weston	LW	1.18%	11.50%	14.06	14.06	0.0006	0.000007	0.000067
220	LyondellBasell Industries	LYB	5.12%	3.50%	30.27	30.27	0.0012	0.000064	0.000044
221	Mastercard	MA	0.60%	18.50%	368.24	368.24	0.0152	0.000091	0.002805
222	MidAmerica Apartment Communities	MAA	3.45%	-14.50%	18.74	--	--	--	--
223	Marriott International	MAR	0.93%	26.50%	55.02	--	--	--	--
224	Masco	MAS	2.24%	8.00%	11.56	11.56	0.0005	0.000011	0.000038
225	McDonald's	MCD	2.23%	10.50%	199.95	199.95	0.0082	0.000184	0.000864
226	Microchip Technology	MCHP	1.72%	9.00%	41.87	41.87	0.0017	0.000030	0.000155
227	McKesson	MCK	0.57%	10.00%	53.40	53.40	0.0022	0.000013	0.000220
228	Moody's	MCO	0.89%	4.00%	57.83	57.83	0.0024	0.000021	0.000095
229	Mondelez International	MDLZ	2.37%	7.50%	88.88	88.88	0.0037	0.000087	0.000274
230	Medtronic	MDT	3.60%	7.50%	108.01	108.01	0.0044	0.000160	0.000334
231	MetLife	MET	2.88%	5.00%	56.34	56.34	0.0023	0.000067	0.000116
232	MGM Resorts International	MGM	0.03%	n/a	15.66	--	--	--	--
233	McCormick & Company	MKC	2.00%	4.50%	20.91	20.91	0.0009	0.000017	0.000039
234	MarketAxess	MKTX	0.77%	9.50%	13.67	13.67	0.0006	0.000004	0.000053
235	Martin Marietta Materials	MLM	0.76%	4.50%	21.57	21.57	0.0009	0.000007	0.000040
236	Marsh & McLennan Companies	MMC	1.43%	10.50%	86.04	86.04	0.0035	0.000051	0.000372
237	3M	MMM	5.28%	7.50%	62.42	62.42	0.0026	0.000136	0.000193
238	Altria Group	MO	8.37%	6.00%	80.60	80.60	0.0033	0.000278	0.000199
239	The Mosaic Company	MOS	1.66%	37.50%	16.38	--	--	--	--
240	Marathon Petroleum	MPC	2.31%	n/a	60.88	--	--	--	--

S&P 500 / VALUE LINE

	(a)		(a)	(b)	(a)			Weighted	
	Company	**Ticker**	**Dividend Yield**	**Value Line Growth**	**Market Cap ($bil.)**	**Mkt. Cap.**	**Weight**	**Dividend Yield**	**Growth Rate**
241	Monolithic Power Systems	MPWR	0.71%	23.50%	19.94	--	--	--	--
242	Merck & Co.	MRK	2.69%	8.00%	275.10	275.10	0.0113	0.000305	0.000906
243	Marathon Oil	MRO	1.65%	59.00%	17.91	--	--	--	--
244	Morgan Stanley	MS	3.24%	8.50%	162.02	162.02	0.0067	0.000216	0.000567
245	MSCI	MSCI	0.98%	14.50%	40.75	40.75	0.0017	0.000016	0.000243
246	Microsoft	MSFT	1.14%	15.00%	1,791.82	1,791.82	0.0738	0.000841	0.011067
247	Motorola Solutions	MSI	1.36%	10.50%	43.31	43.31	0.0018	0.000024	0.000187
248	M&T Bank	MTB	3.34%	9.00%	26.49	26.49	0.0011	0.000036	0.000098
249	Micron Technology	MU	0.75%	13.00%	67.14	67.14	0.0028	0.000021	0.000359
250	Nasdaq	NDAQ	1.37%	8.50%	28.64	28.64	0.0012	0.000016	0.000100
251	Nordson	NDSN	1.13%	10.50%	13.42	13.42	0.0006	0.000006	0.000058
252	NextEra Energy	NEE	2.39%	10.50%	152.18	152.18	0.0063	0.000150	0.000658
253	Newmont	NEM	3.99%	9.50%	43.69	43.69	0.0018	0.000072	0.000171
254	NiSource	NI	3.52%	8.00%	11.20	11.20	0.0005	0.000016	0.000037
255	NIKE	NKE	1.07%	22.50%	196.57	--	--	--	--
256	Northrop Grumman	NOC	1.49%	6.50%	71.39	71.39	0.0029	0.000044	0.000191
257	NRG Energy	NRG	4.56%	-10.50%	7.69	--	--	--	--
258	Norfolk Southern	NSC	2.22%	10.50%	56.25	56.25	0.0023	0.000051	0.000243
259	NetApp	NTAP	3.01%	8.50%	14.40	14.40	0.0006	0.000018	0.000050
260	Northern Trust	NTRS	3.18%	8.00%	19.66	19.66	0.0008	0.000026	0.000065
261	Nucor	NUE	1.32%	2.50%	40.19	40.19	0.0017	0.000022	0.000041
262	NVIDIA	NVDA	0.08%	22.00%	476.89	--	--	--	--
263	Newell Brands	NWL	5.84%	n/a	6.51	--	--	--	--
264	News Corporation	NWSA	0.97%	n/a	11.94	--	--	--	--
265	NXP Semiconductors	NXPI	1.94%	12.00%	46.13	46.13	0.0019	0.000037	0.000228
266	Realty Income	O	4.64%	6.00%	39.80	39.80	0.0016	0.000076	0.000098
267	Old Dominion Freight Line	ODFL	0.40%	10.50%	35.57	35.57	0.0015	0.000006	0.000154
268	Organon & Co.	OGN	3.66%	n/a	7.79	--	--	--	--
269	ONEOK	OKE	5.87%	11.50%	30.86	30.86	0.0013	0.000075	0.000146
270	Omnicom Group	OMC	3.40%	6.50%	17.69	17.69	0.0007	0.000025	0.000047
271	Oracle	ORCL	1.43%	10.00%	241.58	241.58	0.0099	0.000142	0.000995
272	Otis Worldwide	OTIS	1.43%	n/a	33.73	--	--	--	--
273	Occidental Petroleum	OXY	1.13%	n/a	58.59	--	--	--	--
274	PARAMOUNT GLBL	PARA	4.38%	4.00%	14.23	14.23	0.0006	0.000026	0.000023
275	Paychex	PAYX	2.92%	10.50%	41.68	41.68	0.0017	0.000050	0.000180
276	PACCAR	PCAR	2.69%	11.50%	38.54	38.54	0.0016	0.000043	0.000182
277	Healthpeak Properties	PEAK	4.43%	17.00%	14.60	14.60	0.0006	0.000027	0.000102
278	Public Service Enterprise Group	PEG	3.70%	4.00%	30.24	30.24	0.0012	0.000046	0.000050
279	PepsiCo	PEP	2.68%	6.50%	237.09	237.09	0.0098	0.000262	0.000635
280	Pfizer	PFE	3.64%	6.50%	252.93	252.93	0.0104	0.000379	0.000677
281	Principal Financial Group	PFG	2.82%	6.50%	22.21	22.21	0.0009	0.000026	0.000059
282	Procter & Gamble	PG	2.58%	6.50%	334.34	334.34	0.0138	0.000355	0.000895
283	The Progressive	PGR	0.30%	6.50%	79.26	79.26	0.0033	0.000010	0.000212
284	ParkerHannifin	PH	1.72%	15.50%	39.83	39.83	0.0016	0.000028	0.000254
285	PulteGroup	PHM	1.23%	7.00%	11.86	11.86	0.0005	0.000006	0.000034
286	Packaging Corporation of America	PKG	3.87%	11.00%	11.97	11.97	0.0005	0.000019	0.000054
287	PerkinElmer	PKI	0.21%	4.00%	17.05	17.05	0.0007	0.000001	0.000028
288	Prologis	PLD	2.67%	6.00%	92.99	92.99	0.0038	0.000102	0.000230
289	Philip Morris International	PM	4.91%	5.50%	160.32	160.32	0.0066	0.000324	0.000363
290	The PNC Financial Services Group	PNC	4.03%	12.00%	64.71	64.71	0.0027	0.000107	0.000320
291	Pentair	PNR	1.73%	11.50%	8.35	8.35	0.0003	0.000006	0.000040
292	Pinnacle West Capital	PNW	4.72%	0.50%	8.34	8.34	0.0003	0.000016	0.000002
293	Pool Corp.	POOL	1.10%	14.00%	14.20	14.20	0.0006	0.000006	0.000082
294	PPG Industries	PPG	1.94%	4.00%	30.12	30.12	0.0012	0.000024	0.000050
295	PPL	PPL	3.05%	3.00%	21.72	21.72	0.0009	0.000027	0.000027
296	Prudential Financial	PRU	4.88%	5.00%	37.48	37.48	0.0015	0.000075	0.000077
297	Public Storage	PSA	2.74%	8.00%	51.03	51.03	0.0021	0.000058	0.000168
298	Phillips 66	PSX	3.66%	86.50%	51.45	--	--	--	--
299	Quanta Services	PWR	0.22%	16.50%	21.29	21.29	0.0009	0.000002	0.000145
300	Pioneer Natural Resources	PXD	9.65%	21.00%	56.16	--	--	--	--

S&P 500 / VALUE LINE

	(a)		(a)	(b)	(a)			Weighted	
	Company	**Ticker**	**Dividend Yield**	**Value Line Growth**	**Market Cap ($bil.)**	**Mkt. Cap.**	**Weight**	**Dividend Yield**	**Growth Rate**
301	Qualcomm	QCOM	2.29%	18.00%	147.17	147.17	0.0061	0.000139	0.001091
302	Everest Re Group	RE	1.91%	9.50%	13.72	13.72	0.0006	0.000011	0.000054
303	Regency Centers	REG	3.94%	12.50%	11.26	11.26	0.0005	0.000018	0.000058
304	Regions Financial	RF	3.76%	11.50%	21.40	21.40	0.0009	0.000033	0.000101
305	Robert Half International	RHI	2.43%	10.50%	8.56	8.56	0.0004	0.000009	0.000037
306	Raymond James Financial	RJF	1.42%	15.00%	25.45	25.45	0.0010	0.000015	0.000157
307	Ralph Lauren	RL	2.42%	12.00%	8.22	8.22	0.0003	0.000008	0.000041
308	ResMed	RMD	0.76%	12.00%	33.86	33.86	0.0014	0.000011	0.000167
309	Rockwell Automation	ROK	1.70%	10.50%	32.03	32.03	0.0013	0.000022	0.000139
310	Rollins	ROL	1.43%	10.50%	17.90	17.90	0.0007	0.000011	0.000077
311	Roper Technologies	ROP	0.62%	8.00%	47.11	47.11	0.0019	0.000012	0.000155
312	Ross Stores	ROST	1.12%	12.50%	41.45	41.45	0.0017	0.000019	0.000213
313	Republic Services	RSG	1.59%	12.50%	39.27	39.27	0.0016	0.000026	0.000202
314	Raytheon Technologies	RTX	2.20%	8.00%	147.02	147.02	0.0061	0.000133	0.000484
315	SBA Communications	SBAC	1.11%	35.50%	31.49	--	--	--	--
316	Signature Bank	SBNY	2.22%	14.50%	7.93	7.93	0.0003	0.000007	0.000047
317	Starbucks	SBUX	1.98%	16.00%	122.80	122.80	0.0051	0.000100	0.000809
318	Charles Schwab	SCHW	1.16%	9.00%	148.61	148.61	0.0061	0.000071	0.000551
319	Sealed Air	SEE	1.55%	10.00%	7.48	7.48	0.0003	0.000005	0.000031
320	SherwinWilliams	SHW	1.05%	11.50%	64.03	64.03	0.0026	0.000028	0.000303
321	The J. M. Smucker Co.	SJM	2.76%	4.00%	16.01	16.01	0.0007	0.000018	0.000026
322	Schlumberger	SLB	1.78%	28.50%	79.76	--	--	--	--
323	SnapOn	SNA	2.69%	-16.00%	12.79	--	--	--	--
324	The Southern Company	SO	4.04%	6.50%	73.22	73.22	0.0030	0.000122	0.000196
325	Simon Property Group	SPG	6.15%	3.00%	41.14	41.14	0.0017	0.000104	0.000051
326	S&P Global	SPGI	0.93%	6.50%	119.37	119.37	0.0049	0.000046	0.000319
327	Sempra Energy	SRE	3.02%	7.50%	49.92	49.92	0.0021	0.000062	0.000154
328	STERIS	STE	0.92%	10.00%	20.47	20.47	0.0008	0.000008	0.000084
329	Steel Dynamics	STLD	1.25%	3.50%	19.49	19.49	0.0008	0.000010	0.000028
330	State Street	STT	3.02%	8.50%	32.45	32.45	0.0013	0.000040	0.000114
331	Seagate Technology	STX	4.50%	10.00%	12.85	12.85	0.0005	0.000024	0.000053
332	Constellation Brands	STZ	1.40%	6.00%	42.87	42.87	0.0018	0.000025	0.000106
333	Stanley Black & Decker	SWK	3.75%	6.00%	12.69	12.69	0.0005	0.000020	0.000031
334	Skyworks Solutions	SWKS	2.27%	9.00%	17.52	17.52	0.0007	0.000016	0.000065
335	Synchrony Financial	SYF	2.50%	6.00%	16.92	16.92	0.0007	0.000017	0.000042
336	Stryker	SYK	1.19%	8.50%	95.72	95.72	0.0039	0.000047	0.000335
337	Sysco	SYY	2.48%	22.00%	40.11	--	--	--	--
338	AT&T	T	5.44%	1.00%	145.52	145.52	0.0060	0.000326	0.000060
339	Molson Coors	TAP	3.02%	50.00%	12.00	--	--	--	--
340	BioTechne Corp	TECH	0.41%	14.50%	12.53	12.53	0.0005	0.000002	0.000075
341	TE Connectivity	TEL	1.81%	9.50%	39.59	39.59	0.0016	0.000030	0.000155
342	Teradyne	TER	0.43%	11.50%	16.11	16.11	0.0007	0.000003	0.000076

S&P 500 / VALUE LINE

	(a)		(a)	(b)	(a)			Weighted	
	Company	**Ticker**	**Dividend Yield**	**Value Line Growth**	**Market Cap ($bil.)**	**Mkt. Cap.**	**Weight**	**Dividend Yield**	**Growth Rate**
343	Truist Financial	TFC	4.43%	5.50%	64.72	64.72	0.0027	0.000118	0.000147
344	Teleflex	TFX	0.57%	10.00%	11.52	11.52	0.0005	0.000003	0.000047
345	Target	TGT	2.63%	11.00%	75.59	75.59	0.0031	0.000082	0.000342
346	The TJX Companies	TJX	1.45%	17.50%	95.57	95.57	0.0039	0.000057	0.000689
347	Thermo Fisher Scientific	TMO	0.21%	10.50%	225.64	225.64	0.0093	0.000020	0.000976
348	Tapestry	TPR	2.98%	16.50%	10.52	10.52	0.0004	0.000013	0.000071
349	Targa Resources	TRGP	2.39%	n/a	17.04	--	--	--	--
350	T. Rowe Price	TROW	4.25%	3.00%	26.12	26.12	0.0011	0.000046	0.000032
351	The Travelers Companies	TRV	1.95%	6.50%	44.69	44.69	0.0018	0.000036	0.000120
352	Tractor Supply Co.	TSCO	1.87%	13.00%	23.65	23.65	0.0010	0.000018	0.000127
353	Tyson Foods	TSN	2.92%	2.00%	23.69	23.69	0.0010	0.000028	0.000020
354	Trane Technologies	TT	1.54%	n/a	40.13	--	--	--	--
355	Texas Instruments	TXN	2.83%	7.50%	159.29	159.29	0.0066	0.000186	0.000492
356	Textron	TXT	0.11%	13.00%	14.67	14.67	0.0006	0.000001	0.000079
357	United Dominion Realty Trust	UDR	4.09%	10.50%	12.92	12.92	0.0005	0.000022	0.000056
358	Universal Health Services	UHS	0.55%	6.00%	10.44	10.44	0.0004	0.000002	0.000026
359	UnitedHealth Group	UNH	1.34%	12.00%	460.49	460.49	0.0190	0.000254	0.002275
360	Union Pacific	UNP	2.60%	9.50%	123.23	123.23	0.0051	0.000132	0.000482
361	United Parcel Service	UPS	3.43%	8.50%	153.47	153.47	0.0063	0.000217	0.000537
362	U.S. Bancorp	USB	3.95%	6.00%	73.03	73.03	0.0030	0.000119	0.000180
363	Visa	V	0.80%	13.50%	425.51	425.51	0.0175	0.000140	0.002365
364	V.F. Corporation	VFC	6.83%	6.00%	11.61	11.61	0.0005	0.000033	0.000029
365	VICI Properties	VICI	4.63%	8.50%	21.21	21.21	0.0009	0.000040	0.000074
366	Valero Energy	VLO	2.74%	31.00%	55.26	--	--	--	--
367	Vulcan Materials	VMC	0.90%	8.50%	23.75	23.75	0.0010	0.000009	0.000083
368	Verisk Analytics	VRSK	0.69%	9.50%	28.25	28.25	0.0012	0.000008	0.000111
369	Ventas	VTR	3.78%	10.50%	20.29	20.29	0.0008	0.000032	0.000088
370	Viatris	VTRS	4.12%	n/a	14.12	--	--	--	--
371	Verizon Communications	VZ	6.47%	2.50%	169.38	169.38	0.0070	0.000451	0.000174
372	Westinghouse Air Brake Technologies	WAB	0.58%	9.50%	18.86	18.86	0.0008	0.000005	0.000074
373	Walgreens Boots Alliance	WBA	5.35%	3.00%	31.29	31.29	0.0013	0.000069	0.000039
374	WEC Energy Group	WEC	3.36%	6.00%	29.25	29.25	0.0012	0.000040	0.000072
375	Welltower	WELL	3.52%	2.50%	33.03	33.03	0.0014	0.000048	0.000034
376	Wells Fargo & Company	WFC	2.76%	12.00%	172.09	172.09	0.0071	0.000196	0.000850
377	Whirlpool	WHR	4.60%	-0.50%	8.21	--	--	--	--
378	Waste Management	WM	1.70%	8.00%	62.86	62.86	0.0026	0.000044	0.000207
379	The Williams Companies	WMB	5.41%	12.00%	38.25	38.25	0.0016	0.000085	0.000189
380	Walmart	WMT	1.63%	7.50%	384.46	384.46	0.0158	0.000258	0.001187
381	W.R. Berkley	WRB	0.56%	17.00%	18.98	18.98	0.0008	0.000004	0.000133
382	WestRock	WRK	3.00%	15.00%	9.33	9.33	0.0004	0.000012	0.000058
383	West Pharmaceutical Services	WST	0.29%	9.50%	19.27	19.27	0.0008	0.000002	0.000075
384	Willis Towers Watson	WTW	1.42%	8.50%	27.55	27.55	0.0011	0.000016	0.000096
385	Weyerhaeuser	WY	2.20%	5.50%	24.15	24.15	0.0010	0.000022	0.000055
386	Xcel Energy	XEL	3.02%	6.00%	37.50	37.50	0.0015	0.000047	0.000093
387	Exxon Mobil	XOM	3.22%	31.50%	466.20	--	--	--	--
388	Dentsply Sirona	XRAY	1.37%	9.00%	7.86	7.86	0.0003	0.000004	0.000029
389	Xylem	XYL	1.17%	9.00%	18.48	18.48	0.0008	0.000009	0.000068
390	Yum Brands	YUM	1.77%	10.50%	36.69	36.69	0.0015	0.000027	0.000159
391	Zimmer Biomet	ZBH	0.80%	5.50%	26.20	26.20	0.0011	0.000009	0.000059
392	Zions Bancorporation	ZION	3.27%	6.50%	7.78	7.78	0.0003	0.000010	0.000021
393	Zoetis	ZTS	0.91%	11.00%	77.20	77.20	0.0032	0.000029	0.000350
						24,285.46	1.0000		
	Weighted Average							**2.06%**	**10.23%**

n/a Not Available

(a) www.valueline.com (retrieved Jan. 31, 2023).

(b) EPS growth rates from Value Line (retrieved Jan. 31, 2023). Eliminated growth rates greater than 20%, as well as all negative values.

Exhibit No. RG&E-109

IMPLIED ROE

Current Equity Risk Premium				
(a)	Average Yield Over Study Period		5.34%	
(b)	Baa Utility Bond Yield		5.66%	
	Change in Bond Yield		0.32%	
(c)	Risk Premium/Interest Rate Relationship		-0.6811	
	Adjustment to Average Risk Premium		-0.22%	
(a)	Average Risk Premium over Study Period		4.90%	
	Adjusted Risk Premium		**4.68%**	
Implied Cost of Equity				
(b)	Baa Utility Bond Yield		5.66%	
	Adjusted Equity Risk Premium		4.68%	
	Risk Premium Cost of Equity		**10.34%**	
Implied Cost of Equity Range				
	Range Spread			
(d)	Two-step DCF		2.92%	
	CAPM			
(e)	IBES-based		3.15%	
(f)	Value Line-based		3.72%	
			3.44%	
(g)	Average Range Spread		3.18%	
(h)	**Risk Premium Range**	**8.75%**	**--**	**11.93%**

(a) See Exhibit No. RG&E-109, pp. 2-4.
(b) Six-month average yield for Aug. 2022 to Jan. 2023 based on data from Moody's Investors Service, www.moodys.credittrends.com.
(c) See Exhibit No. RG&E-109, p. 5.
(d) Difference between high and low estimates from Exhibit No. RG&E-104, p. 1.
(e) Difference between high and low estimates from Exhibit No. RG&E-105.
(f) Difference between high and low estimates from Exhibit No. RG&E-107.
(g) Average of range spread for two-step DCF (2.92%) and CAPM (3.44%).
(h) Risk Premium cost of equity -/+ one-half of averge range spread.

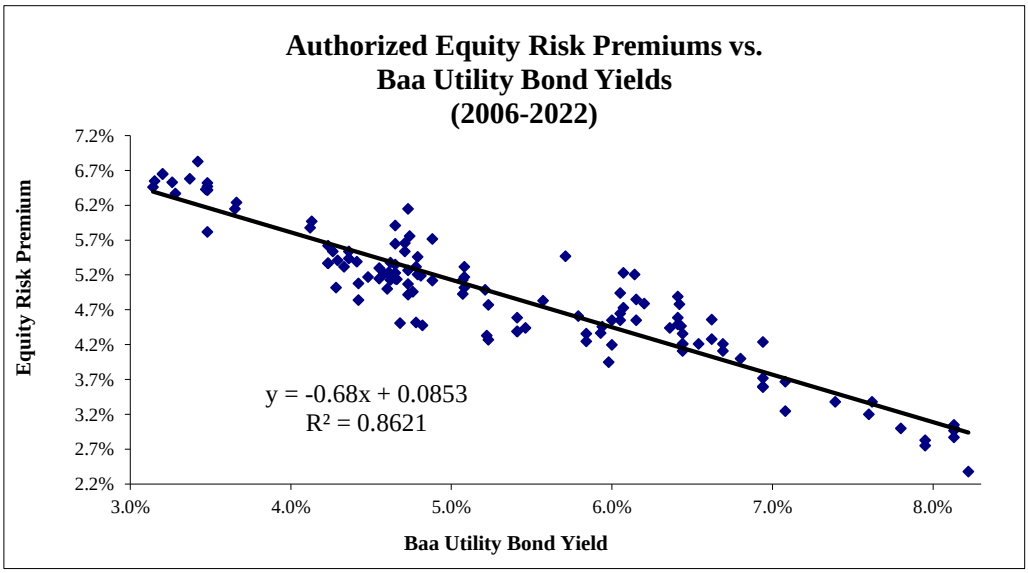
Date	Docket No.	Utility	Base ROE	Baa Bond Yield	Implied Risk Premium
Feb-06	ER05-515	Baltimore Gas & Elec.	10.80%	6.07%	4.73%
Feb-06	ER05-515	Baltimore Gas & Elec.	11.30%	6.07%	5.23%
Jun-06	ER05-925	Westar Energy Inc.	10.80%	6.36%	4.44%
Feb-07	ER07-284	San Diego Gas & Elec.	11.35%	6.14%	5.21%
May-07	ER06-787	Idaho Power Co.	10.70%	6.15%	4.55%
May-07	ER06-1320	Wisconsin Elec. Pwr. Co.	11.00%	6.15%	4.85%
Sep-07	EL06-109	Duquesne Light Co.	10.90%	6.41%	4.49%
Sep-07	ER07-583	Commonwealth Edison Co.	11.00%	6.41%	4.59%
Oct-07	ER08-92	Virginia Elec. & Power Co.	10.90%	6.43%	4.47%
Nov-07	ER08-374	Atlantic Path 15	10.65%	6.44%	4.21%
Nov-07	ER08-396	Westar Energy Inc.	10.80%	6.44%	4.36%
Nov-07	ER08-413	Startrans IO, LLC	10.65%	6.44%	4.21%
Nov-07	ER08-375	So. Cal Edison	10.55%	6.44%	4.11%
Jan-08	ER08-686	Pepco Holdings, Inc.	11.30%	6.41%	4.89%
Feb-08	ER07-562	Trans-Allegheny	11.20%	6.42%	4.78%
Apr-08	ER07-1142	Arizona Public Service Co.	10.75%	6.54%	4.21%
May-08	ER08-1207	Virginia Elec. & Power Co.	10.90%	6.62%	4.28%
May-08	ER08-1233	Public Service Elec. & Gas	11.18%	6.62%	4.56%
Jun-08	ER08-1402	Duquesne Light Co.	10.90%	6.69%	4.21%
Jun-08	ER08-1423	Pepco Holdings, Inc.	10.80%	6.69%	4.11%
Jul-08	ER09-35/36	Tallgrass / Prairie Wind	10.80%	6.80%	4.00%
Sep-08	ER09-249	Public Service Elec. & Gas	11.18%	6.94%	4.24%
Sep-08	ER09-187	So. Cal Edison	10.53%	6.94%	3.59%
Sep-08	ER09-548	ITC Great Plains	10.66%	6.94%	3.72%
Sep-08	ER09-75	Pioneer Transmission	10.54%	6.94%	3.60%
Nov-08	ER08-1584	Black Hills Power Co.	10.80%	7.60%	3.20%
Dec-08	ER09-745	Baltimore Gas & Elec.	10.80%	7.80%	3.00%
Jan-09	ER07-1069	AEP - SPP Zone	10.70%	7.95%	2.75%
Jan-09	ER09-681	Green Power Express	10.78%	7.95%	2.83%
Mar-09	ER08-281	Oklahoma Gas & Elec.	10.60%	8.22%	2.38%
Apr-09	ER08-1457	PPL Elec. Utilities Corp.	11.10%	8.13%	2.97%
Apr-09	ER08-1457	PPL Elec. Utilities Corp.	11.14%	8.13%	3.01%
Apr-09	ER08-1457	PPL Elec. Utilities Corp.	11.18%	8.13%	3.05%
Apr-09	ER08-1588	Kentucky Utilities Co.	11.00%	8.13%	2.87%
Jul-09	ER08-552	Niagara Mohawk Pwr. Co.	11.00%	7.62%	3.38%
Aug-09	ER08-313	Southwestern Public Service Co.	10.77%	7.39%	3.38%
Aug-09	ER09-628	National Grid Generation LLC	10.75%	7.08%	3.67%
Sep-09	ER10-160	So. Cal Edison	10.33%	7.08%	3.25%
Mar-10	ER08-1329	AEP - PJM Zone	10.99%	6.20%	4.79%
Aug-10	ER10-230	Kansas City Power & Light Co.	10.60%	6.05%	4.55%
Aug-10	ER10-355	AEP Transcos - PJM	10.99%	6.05%	4.94%
Aug-10	ER10-355	AEP Transcos - SPP	10.70%	6.05%	4.65%

Date	Docket No.	Utility	Base ROE	Baa Bond Yield	Implied Risk Premium
Sep-10	ER11-1952	So. Cal Edison	10.30%	5.93%	4.37%
Oct-10	EL11-13	Atlantic Grid Operations	10.09%	5.84%	4.25%
Oct-10	ER11-2895	Duke Energy Carolinas	10.20%	5.84%	4.36%
Nov-10	ER11-2377	Northern Pass Transmission	10.40%	5.79%	4.61%
Mar-11	ER10-1377	Northern States Power Co. (MN)	10.40%	5.94%	4.46%
Apr-11	ER10-516	South Carolina Elec. & Gas	10.55%	6.00%	4.55%
Apr-11	ER10-992	Northern States Power Co.	10.20%	6.00%	4.20%
May-11	ER11-4069	RITELine	9.93%	5.98%	3.95%
Aug-11	ER12-296	PJM & PSE&G	11.18%	5.71%	5.47%
Sep-11	ER08-386	PATH	10.40%	5.57%	4.83%
Dec-11	ER11-2560	Entergy Arkansas	10.20%	5.21%	4.99%
Mar-12	ER12-2300	Public Service Co. of Colorado	10.25%	5.08%	5.17%
Mar-12	ER11-2853	Public Service Co. of Colorado	10.10%	5.08%	5.02%
Mar-12	ER11-2853	Public Service Co. of Colorado	10.40%	5.08%	5.32%
Nov-12	ER12-1378	Cleco Power LLC	10.50%	4.74%	5.76%
Jan-13	ER12-778	Puget Sound Energy	9.80%	4.65%	5.15%
Jan-13	ER12-778	Puget Sound Energy - PSANI	10.30%	4.65%	5.65%
Jan-13	ER12-2554	Transource Missouri	9.80%	4.65%	5.15%
Feb-13	ER11-3643	PacifiCorp	9.80%	4.62%	5.18%
Feb-13	ER12-1650	Maine Public Service Co.	9.75%	4.62%	5.13%
Jul-13	ER11-3697	So. Cal Edison	9.30%	4.82%	4.48%
Jan-14	ER13-941	San Diego Gas & Electric	9.55%	5.22%	4.33%
Aug-14	ER12-1589	Public Service Co. of Colorado	9.72%	4.76%	4.96%
Sep-14	ER12-91	Duke Energy Ohio	10.88%	4.73%	6.15%
Nov-14	ER13-1508	Entergy Arkansas	10.37%	4.71%	5.66%
Jan-15	EL12-101	Niagara Mohawk Power Corp.	9.80%	4.66%	5.14%
Feb-15	ER13-685	Public Service Company of New Mexico	10.00%	4.62%	5.38%
Mar-15	ER14-1661	MidAmerican Central Calif. Transco	9.80%	4.58%	5.22%
May-15	EL14-93	Westar Energy	9.80%	4.58%	5.22%
Jun-15	EL12-39	Duke Energy Florida	10.00%	4.65%	5.35%
Jun-15	ER15-303	American Transmission Systems, Inc.	10.56%	4.65%	5.91%
Jun-15	ER15-303	American Transmission Systems, Inc.	9.88%	4.65%	5.23%
Jul-15	ER14-192	Southwestern Public Service Co.	10.00%	4.79%	5.21%
Jul-15	ER13-2428	Kentucky Utilities Co.	10.25%	4.79%	5.46%
Sep-15	ER14-2751	Xcel Energy Southwest Trans. Co. (Gen)	10.20%	5.07%	5.13%
Sep-15	ER14-2751	Xcel Energy Southwest Trans. Co. (Zn 11)	10.00%	5.07%	4.93%
Oct-15	EL15-27	Baltimore G&E / Pepco Holdings, Inc.	10.00%	5.23%	4.77%
Oct-15	ER15-572	New York Transco LLC	9.50%	5.23%	4.27%
Dec-15	ER15-2237	Kanstar Transmission, LLC	9.80%	5.41%	4.39%
Dec-15	ER15-2114	Transource West Virginia, LLC	10.00%	5.41%	4.59%
Jan-16	ER15-1809	ATX Southwest, LLC	9.90%	5.46%	4.44%
Mar-16	ER15-958	Transource Kansas, LLC	9.80%	5.41%	4.39%

Date	Docket No.	Utility	Base ROE	Baa Bond Yield	Implied Risk Premium
Jul-16	EL16-30	Duke Energy Carolinas	10.00%	4.73%	5.27%
Jul-16	ER15-1682	TransCanyon DCR, LLC	9.80%	4.73%	5.07%
Jul-16	ER15-2069	NorthWestern Corp.	9.65%	4.73%	4.92%
Aug-16	ER15-2239	NextEra Energy Transmission West	9.70%	4.55%	5.15%
Aug-16	ER16-453	Northeast Transmission Development	9.85%	4.55%	5.30%
Sep-16	ER15-2594	South Central MCN LLC	9.80%	4.41%	5.39%
May-17	ER15-1429	Emera Maine	9.60%	4.60%	5.00%
Jul-17	ER15-572	New York Transco, LLC	9.65%	4.48%	5.17%
Aug-17	ER17-856	Rockland Electric Co.	9.50%	4.42%	5.08%
Aug-17	ER16-2320-002	Pacific Gas & Electric Co.	9.26%	4.42%	4.84%
Sep-17	ER17-211	Mid-Atlantic Interstate Transmission	9.80%	4.36%	5.44%
Sep-17	ER17-419	Transource Pennsylvania/Maryland, LLC	9.90%	4.36%	5.54%
Nov-17	ER16-2720	NextEra Energy Trans. Southwest LLC	9.80%	4.26%	5.54%
Feb-18	ER16-2716	NextEra Energy Trans. MidAtlantic, LLC	9.60%	4.23%	5.37%
Feb-18	ER17-706	GridLiance West Transco LLC	9.60%	4.23%	5.37%
Feb-18	EL17-13	AEP East Cos.	9.85%	4.23%	5.62%
Mar-18	ER17-135	DesertLink, LLC	9.30%	4.28%	5.02%
Apr-18	ER16-2719	NextEra Energy Trans. New York LLC	9.65%	4.33%	5.32%
Sep-18	ER18-1639	Constellation Mystic Power, LLC	9.19%	4.68%	4.51%
Nov-18	ER18-1225	Southwestern Electric Power Co.	10.10%	4.78%	5.32%
Nov-18	ER19-605	Republic Transmission, LLC	9.30%	4.78%	4.52%
Feb-19	ER19-1396	AEP West Cos.	10.00%	4.88%	5.12%
Feb-19	ER19-1427	Alabama Power Co.	10.60%	4.88%	5.72%
Apr-19	EL18-58	Oklahoma G&E	10.00%	4.81%	5.19%
May-19	ER18-1953	Gulf Power Co.	10.25%	4.71%	5.54%
Jun-19	ER17-1519	PECO	9.85%	4.61%	5.24%
Aug-19	ER18-169-002	Southern California Edison	9.70%	4.29%	5.41%
Sep-19	ER19-221	San Diego Gas & Electric Co.	10.10%	4.13%	5.97%
Feb-20	ER19-697-001	Cheyenne Light, Fuel and Power	9.90%	3.66%	6.24%
Jun-20	ER19-1553	Southern California Edison Co.	9.80%	3.65%	6.15%
Sep-20	ER19-13	Pacific Gas & Electric Co.	9.95%	3.37%	6.58%
Oct-20	ER19-1756	NorthWestern Corp.	9.65%	3.28%	6.37%
Nov-20	ER20-1150	Dayton Power and Light Co.	9.85%	3.20%	6.65%
Dec-20	ER21-2198	Avista Corp.	9.60%	3.14%	6.46%
Jan-21	ER20-227	Jersey Central Power & Light Co.	9.70%	3.15%	6.55%
Feb-21	ER21-1319	Duke Energy Progress	9.85%	3.20%	6.65%
Jun-21	ER21-2450	Public Service Elec. & Gas Co.	9.90%	3.47%	6.43%
Jul-21	ER21-1065	TransCanyon Western Development, LLC	9.90%	3.48%	6.42%
Jul-21	ER21-669	Morongo Transmission LLC	9.30%	3.48%	5.82%
Jul-21	EL20-48	PPL Elec. Utilities Corp.	9.90%	3.48%	6.42%
Jul-21	EL20-48	PPL Elec. Utilities Corp.	9.95%	3.48%	6.47%
Jul-21	EL20-48	PPL Elec. Utilities Corp.	10.00%	3.48%	6.52%

Date	Docket No.	Utility	Base ROE	Baa Bond Yield	Implied Risk Premium
Nov-21	ER19-2019	Tucson Electric Power Co.	9.79%	3.26%	6.53%
Feb-22	ER20-2878	Pacific Gas & Electric Co.	10.25%	3.42%	6.83%
May-22	ER22-2125	Duke Energy Progress	10.00%	4.12%	5.88%
		Average	**10.24%**	**5.34%**	**4.90%**

REGRESSION RESULTS



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.928887102
R Square	0.862831247
Adjusted R Square	0.861751178
Standard Error	0.003511234
Observations	129

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.009849039	0.009849039	798.8668436	1.24851E-56
Residual	127	0.001565753	1.23288E-05		
Total	128	0.011414792			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.085382021	0.0013224	64.56593488	5.6117E-99	0.082765229	0.087998813	0.082765229	0.087998813
X Variable 1	-0.68108566	0.024097087	-28.26423259	1.24851E-56	-0.728769445	-0.63340187	-0.728769445	-0.633401874

ADJUSTMENTS TO FERC CASE SET

Date	Docket No.	Utility	Base ROE	Explanation
Cases Added to DATC Case Set				
May-08	ER08-1233	Public Service Elec. & Gas	11.18%	Original formula rate order. Commission accepted 11.18% ROE based on applicant's DCF analysis using May 2008 study period. 124 FERC ¶ 61,303 at P 1 (2008).
Apr-09	ER08-1457	PPL Elec. Utilities Corp.	11.18%	Order authorized ROEs of 11.10%, 11.14%, and 11.18%. Opinion No. 569-B included 11.10% and 11.14% values. No basis to distinguish 11.18% or to exclude it because it applies to a future date, as do the majority of ROEs approved by the Commission.
Sep-15	ER14-2751	Xcel Energy Southwest Trans. Co. (Zn 11)	10.00%	Settlement specifies separate ROE for Zone 11 under SPP OATT. 153 FERC ¶ 63,019 (2015). Commission failed to include.
Aug-17	ER16-2320-002	Pacific Gas & Electric Co.	9.26%	Add observation corresponding to 178 FERC ¶ 61,175 (2022).
Sep-18	ER18-1639	Constellation Mystic Power, LLC	9.19%	Add observation corresponding to 177 FERC ¶ 61,106 (2021).
Apr-19	EL18-58	Oklahoma G&E	10.00%	Offer of Settlement dated 5/21/19. 167 FERC ¶ 63,048 (2019).
May-19	ER18-1953	Gulf Power Co.	10.25%	Offer of Settlement dated 6/20/19. 169 FERC ¶ 61,023 (2019).
Jun-19	ER17-1519	PECO	9.85%	Offer of Settlement dated 7/22/19. 168 FERC ¶ 63,038 (2019).
Aug-19	ER18-169-002	Southern California Edison	9.70%	Offer of Settlement dated 9/19/19. 169 FERC ¶ 63,009 (2019).
Sep-19	ER19-221	San Diego Gas & Electric Co.	10.10%	Offer of Settlement dated 10/18/19. 170 FERC ¶ 63,010 (2020).
Feb-20	ER19-697-001	Cheyenne Light, Fuel and Power	9.90%	Offer of Settlement dated 3/20/20. 171 FERC ¶ 63,012 (2020).
Jun-20	ER19-1553	Southern California Edison Co.	9.80%	Offer of Settlement dated 7/01/20. 172 FERC ¶ 63,011 (2020).
Sep-20	ER19-13	Pacific Gas & Electric Co.	9.95%	Offer of Settlement dated 10/15/20. 173 FERC ¶ 63,024 (2020).
Oct-20	ER19-1756	NorthWestern Corp.	9.65%	Offer of Settlement dated 11/16/20. 174 FERC ¶ 61,074 (2020).
Nov-20	ER20-1150	Dayton Power and Light Co.	9.85%	Offer of Settlement dated 12/10/20. 175 FERC ¶ 61,021 (2020).
Dec-20	ER21-2198	Avista Corp.	9.60%	Approved 9/30/21 based on study period ending Dec. 2020. 176 FERC ¶ 61,222 (2020).
Jan-21	ER20-227	Jersey Central Power & Light Co.	9.70%	Offer of Settlement dated 02/02/21. 175 FERC ¶ 61,023 (2020).
Feb-21	ER21-1319	Duke Energy Progress	9.85%	Offer of Settlement dated 03/10/21. 175 FERC ¶ 63,006 (2021).
Jun-21	ER21-2450	Public Service Elec. & Gas Co.	9.90%	Offer of Settlement dated 07/14/21. 177 FERC ¶ 61,115 (2021).
Jul-21	ER21-1065	TransCanyon Western Development, LLC	9.90%	Offer of Settlement dated 08/13/21. 176 FERC ¶ 63,025 (2021).
Jul-21	ER21-669	Morongo Transmission LLC	9.30%	Offer of Settlement dated 08/16/21. 178 FERC ¶ 61,062 (2021).
Jul-21	EL20-48	PPL Elec. Utilities Corp.	9.90%	Offer of Settlement dated 08/20/21. Effective 05/21/20-05/31/22. 176 FERC ¶ 63,028.
Jul-21	EL20-48	PPL Elec. Utilities Corp.	9.95%	Offer of Settlement dated 08/20/21. Effective 06/1/22-05/31/23. 176 FERC ¶ 63,028.
Jul-21	EL20-48	PPL Elec. Utilities Corp.	10.00%	Offer of Settlement dated 08/20/21. Effective 06/1/23. 176 FERC ¶ 63,028.
Nov-21	ER19-2019	Tucson Electric Power Co.	9.79%	Offer of Settlement dated 12/22/21. 177 FERC ¶ 61,106.
Feb-22	ER20-2878	Pacific Gas & Electric Co.	10.25%	Offer of Settlement dated 03/31/22. 179 FERC ¶ 61,167.
May-22	ER22-2125	Duke Energy Progress	10.00%	Offer of Settlement dated 06/16/22. 181 FERC ¶ 61,111.

ADJUSTMENTS TO FERC CASE SET

Date	Docket No.	Utility	Base ROE	Explanation
Cases Removed from DATC Case Set				
Jun-15	EL14-12	MISO Complaint I	10.02%	Vacated by Court of Appeals, No. 16-1325 (Aug. 9, 2022).
Dec-15	ER15-45	MISO Complaint II	10.05%	Remove ROE attributed to Complaint II, which was dismissed. No ROE was established or approved in that proceeding.
Jul-16	ER15-1976	East River	9.60%	Remove observation for publicly-owned entity.
Aug-16	ER16-835	NYPA	8.95%	Remove observation for publicly-owned entity.
Sep-16	ER15-1775	Basin Electric	9.60%	Remove observation for publicly-owned entity.
Jan-17	ER16-204	Tri-State	9.30%	Remove observation for publicly-owned entity.
Feb-17	ER16-209	Central Power	9.50%	Remove observation for publicly-owned entity.
Feb-17	ER16-1774	Western Farmers	8.77%	Remove observation for publicly-owned entity.
Feb-17	ER16-1546	Arkansas Electric	8.00%	Remove observation for publicly-owned entity.
Aug-17	ER17-426	Denison	9.60%	Remove observation for publicly-owned entity.
Nov-17	ER17-1610	Mountrail-Williams	9.60%	Remove observation for publicly-owned entity.
Nov-17	ER17-428	Vermillion	9.60%	Remove observation for publicly-owned entity.
Feb-19	ER19-1396	PSCo, SWPECo, AEP Oklahoma, et al.	10.00%	Remove duplicate observation previously reflected as "AEP West."
Other Corrections to DATC Case Set				
Sep-08	ER09-187	So. Cal Edison	10.53%	Remove post-record period adjustment from 10.04% authorized ROE to match ROE with study period interest rate. 139 FERC ¶ 61,042 at P 41 (2012) .

Exhibit No. RG&E-110

ELECTRIC GROUP

	Company	(a) Expected Return on Common Equity	(b) Adjustment Factor	(c) Adjusted Return on Common Equity	Break (B Pts)
1	NextEra Energy, Inc.	14.50%	1.0498	15.22%	41
2	Southern Company	14.50%	1.0216	14.81%	51
3	CMS Energy Corp.	14.00%	1.0215	14.30%	60
4	Pub Sv Enterprise Grp.	13.50%	1.0151	13.70%	38
5	OGE Energy Corp.	13.00%	1.0249	13.32%	7
6	WEC Energy Group	13.00%	1.0195	13.25%	29
7	DTE Energy Co.	12.50%	1.0365	12.96%	49
8	Dominion Energy	12.00%	1.0392	12.47%	62
9	Entergy Corp.	11.50%	1.0308	11.85%	6
10	Alliant Energy	11.50%	1.0250	11.79%	39
11	American Elec Pwr	11.00%	1.0364	11.40%	9
12	Xcel Energy Inc.	11.00%	1.0279	11.31%	6
13	Sempra Energy	11.00%	1.0224	11.25%	6
14	Ameren Corp.	10.00%	1.0389	10.39%	86
15	Eversource Energy	10.00%	1.0311	10.31%	8
16	CenterPoint Energy	10.00%	1.0280	10.28%	3
17	Evergy Inc.	10.00%	1.0162	10.16%	12
18	Exelon Corp.	10.00%	0.9820	9.82%	34
19	Portland General Elec.	9.50%	1.0316	9.80%	2
20	Black Hills Corp.	9.50%	1.0297	9.78%	2
21	PPL Corp.	9.50%	1.0190	9.68%	10
22	Pinnacle West Capital	9.00%	1.0172	9.15%	53
23	Duke Energy Corp.	9.00%	1.0133	9.12%	3
24	Consolidated Edison	8.50%	1.0184	8.66%	46
	Lower End (d)			**8.66%**	
	Upper End (d)			**15.22%**	
	Median (d)			**11.28%**	
	Midpoint			**11.94%**	
	Median - All Values			**11.28%**	
	Low-End Test (e)			**7.05%**	
	High-End Test (f)			**22.56%**	

(a) The Value Line Investment Survey (Dec. 9, 2022, Jan. 20 and Feb. 10, 2023).
(b) Computed using the formula 2*(1+5-Yr. Change in Equity)/(2+5 Yr. Change in Equity).
(c) (a) x (b).
(d) Excludes highlighted values.
(e) Average Baa utility bond yield for six-months ending Jan. 2023, plus 20% of CAPM market risk premium.
(f) 200% of Median - All Values.