DAVID J. MEYER
VICE PRESIDENT AND CHIEF COUNSEL FOR
REGULATORY & GOVERNMENTAL AFFAIRS
AVISTA CORPORATION
P.O. BOX 3727
1411 EAST MISSION AVENUE
SPOKANE, WASHINGTON 99220-3727
TELEPHONE: (509) 495-4316
DAVID.MEYER@AVISTACORP.COM

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF AVISTA CORPORATION FOR THE AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR ELECTRIC AND NATURAL GAS SERVICE TO ELECTRIC AND NATURAL GAS CUSTOMERS IN THE STATE OF IDAHO	)))))))	CASE NO. AVU-E-23-01 CASE NO. AVU-G-23-01 EXHIBIT NO. 3 OF ADRIEN M. MCKENZIE, CFA

FOR AVISTA CORPORATION

(ELECTRIC AND NATURAL GAS)

SCHEDULE 1

QUALIFICATIONS OF ADRIEN M. MCKENZIE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

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

Q. PLEASE STATE YOUR OCCUPATION.

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

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I received B.A. and M.B.A. degrees with a major in finance from The University of Texas at Austin and hold the Chartered Financial Analyst (CFA®) designation. Since joining FINCAP in 1984, I have participated in consulting assignments involving a broad range of economic and financial issues, including cost of capital, cost of service, rate design, economic damages, and business valuation. I have extensive experience in economic and financial analysis for regulated industries, and in preparing and supporting expert witness testimony before courts, regulatory agencies, and legislative committees throughout the U.S. and Canada. I have personally sponsored direct and rebuttal testimony in over 150 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

FINCAP, INC.
Financial Concepts and Applications
Economic and Financial Counsel

3907 Red River Street
Austin, Texas 78751
(512) 923-2790
FAX (512) 458–4768
amm.fincap@outlook.com

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.

I. DESCRIPTION OF QUANTITATIVE ANALYSES

Q. What is the purpose of this exhibit?

A. Schedule 2 presents capital market estimates of the cost of equity for the jurisdictional electric and natural gas utility operations of Avista Corp. ("Avista" or "the Company"). First, I will briefly summarize the concept of the cost of equity, along with the risk-return tradeoff principle fundamental to capital markets. Next, I describe my applications of the Discounted Cash Flow ("DCF"), the Capital Asset Pricing Model ("CAPM"), the empirical form of the CAPM ("ECAPM"), a risk premium analyses based on allowed equity returns for electric utilities, and reference to expected rates of return for electric utilities. This exhibit also presents a market-based test to my utility quantitative analyses by applying the DCF model to a group of low risk non-utility firms.

A. Overview

Q. What fundamental economic principle underlies any evaluation of investors' required return on equity ("ROE")?

A. The fundamental economic principle underlying the cost of equity concept is the notion that investors are risk averse. In capital markets where relatively risk-free assets are available (*e.g.*, U.S. Treasury securities), investors can be induced to hold riskier assets only if they are offered a premium, or additional return, above the rate of return on a risk-free asset. Because all assets compete with each other for investor funds, riskier assets must yield a higher expected rate of return than safer assets to induce investors to hold them.

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

$$k_i = R_f + RP_i$$

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

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

Q. Is there evidence that the risk-return tradeoff principle actually operates in the capital markets?

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

Q. Does the risk-return tradeoff observed with fixed income securities extend to common stocks and other assets?

A. Yes. It is widely accepted that the risk-return tradeoff evidenced with long-term debt extends to all assets. Documenting the risk-return tradeoff for assets other than fixed income securities, however, is complicated by two factors. First, there is no standard measure of risk applicable to all assets. Second, for most assets—including common stock—required rates of return cannot be directly observed. Yet there is every reason to believe that investors exhibit risk aversion in deciding whether or not to hold common stocks and other assets, just as when choosing among fixed-income securities.

Q. Is this risk-return tradeoff limited to differences between firms?

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

Q. What are the challenges in determining a just and reasonable ROE for a regulated enterprise?

A. The actual return investors require is unobservable. Different methodologies have been developed to estimate investors' expected and required return on capital, but all such methodologies are merely theoretical tools and generally produce a range of estimates, based on different assumptions and inputs. The DCF method, which is frequently referenced and relied on by regulators, is only one theoretical approach to gain insight into the return investors require; there are numerous other methodologies for estimating the cost of capital and the ranges produced by the different approaches can vary widely.

Q. Is it customary to consider the results of multiple approaches when evaluating a just and reasonable ROE?

A. Yes. In my experience, financial analysts and regulators routinely consider the results of alternative approaches in determining allowed ROEs. It is widely recognized that no single method can be regarded as failsafe; with all approaches having advantages and

shortcomings. As the Federal Energy Regulatory Commission ("FERC") has noted, "The determination of rate of return on equity starts from the premise that there is no single approach or methodology for determining the correct rate of return."[1] More recently, FERC recognized the potential for any application of the DCF model to produce unreliable results.[2] Similarly, a publication of the Society of Utility and Regulatory Financial Analysts concluded that:

> Each model requires the exercise of judgment as to the reasonableness of the underlying assumptions of the methodology and on the reasonableness of the proxies used to validate the theory. Each model has its own way of examining investor behavior, its own premises, and its own set of simplifications of reality. Each method proceeds from different fundamental premises, most of which cannot be validated empirically. Investors clearly do not subscribe to any singular method, nor does the stock price reflect the application of any one single method by investors.[3]

As this treatise succinctly observed, "no single model is so inherently precise that it can be relied on solely to the exclusion of other theoretically sound models."[4] Similarly, *New Regulatory Finance* concluded that:

> There is no single model that conclusively determines or estimates the expected return for an individual firm. Each methodology possesses its own way of examining investor behavior, its own premises, and its own set of simplifications of reality. Each method proceeds from different fundamental premises that cannot be validated empirically. Investors do not necessarily subscribe to any one method, nor does the stock price reflect the application of any one single method by the price-setting investor. There is no monopoly as to which method is used by investors. In the absence of any hard evidence as to which method outdoes the other, all relevant evidence should be used and weighted equally, in order to minimize judgmental error, measurement error, and conceptual infirmities.[5]

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[1] *Northwest Pipeline Co.*, Opinion No. 396-C, 81 FERC ¶ 61,036 at 4 (1997).
[2] Opinion No. 531, 147 FERC ¶ 61,234 at P 41 (2014).
[3] David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Society of Utility and Regulatory Financial Analysts (2010) at 84.
[4] *Id.*
[5] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports, Inc. (2006) at 429.

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

> There are three principal reasons for our unwillingness to place a great deal of weight on the results of any DCF analysis. One is. . . the failure of the DCF model to conform to reality. The second is the undeniable fact that rarely if ever do two expert witnesses agree on the terms of a DCF equation for the same utility – for example, as we shall see in more detail below, projections of future dividend cash flow and anticipated price appreciation of the stock can vary widely. And, the third reason is that the unadjusted DCF result is almost always well below what any informed financial analysis would regard as defensible, and therefore require an upward adjustment based largely on the expert witness's judgment. In these circumstances, we find it difficult to regard the results of a DCF computation as any more than suggestive.[6]

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

Q. What does the above discussion imply with respect to estimating the ROE for a utility?

A. Although the ROE cannot be observed directly, it is a function of the returns available from other investment alternatives and the risks to which the equity capital is exposed. Because it is not readily observable, the ROE for a particular utility must be estimated by analyzing information about capital market conditions generally, assessing the relative risks of the company specifically, and employing various quantitative methods that focus on investors' required rates of return. These various quantitative methods typically attempt to infer investors' required rates of return from stock prices, interest rates, or other

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

capital market data. Consistent with FERC's conclusion that "[t]here is significant evidence indicating that combining estimates from different models is more accurate than relying on a single model,"[7] my evaluation of a fair ROE for the Company considers the results of multiple financial models, including the DCF, CAPM (and the related ECAPM), risk premium, and expected earnings approaches.

B. Comparable Risk Proxy Group

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

A. Application of quantitative methods to estimate the cost of common equity requires observable capital market data, such as stock prices and beta values. Moreover, even for a firm with publicly traded stock, the cost of common equity can only be estimated. As a result, applying quantitative models using observable market data only produces an estimate that inherently includes some degree of observation error. Thus, the accepted approach to increase confidence in the results is to apply 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 proxy group of utilities do you rely on for your analyses?

A. My analyses relied on a proxy group composed of twenty-two companies, which I refer to as the "Utility Group." In order to develop this group, I began with the following criteria:

1. Included in the Electric Utility Industry groups compiled by The Value Line Investment Survey ("Value Line").

[7] *Coakley v. Bangor Hydro-Elec. Co.*, 165 FERC ¶ 61,030 at P 38 (2018); *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 165 FERC ¶ 61,118 at P 40 (2018).

2. Corporate credit ratings from S&P Global Ratings ("S&P") and Moody's Investors Service ("Moody's") corresponding to one notch above and below the Company's current ratings. For S&P, this results in a ratings range of BBB-, BBB, and BBB+; for Moody's the range is Baa3, Baa2, or Baa1.[8]

3. No ongoing involvement in a major merger or acquisition that would distort quantitative results.

4. No cuts in dividend payments during the past six months and no announcement of a dividend cut since that time.

Q. Is there any other publicly traded utility that is relevant in establishing a proxy group?

A. Yes. Emera Inc.'s electric and gas utility operations are comparable to those of the other utilities in the proxy group.[9] Although Value Line currently includes Emera Inc. in its power industry group, rather than its utility groups, Emera Inc.'s regulated electric and gas utility operations are its dominant businesses and account for approximately 95% of consolidated net income.[10] Emera Inc.'s Florida and New Mexico electric and gas utility operations account for 64% of consolidated net income[11] and its credit ratings fall within the criteria indicated above. Thus, investors would regard Emera Inc. as a comparable investment alternative and it is relevant to an evaluation of the required rate of return for Avista.

Q. How do you evaluate the risks of the Utility Group relative to Avista?

A. My evaluation of relative risk considers four objectivebenchmarks that are widely relied on in the investment community. Credit ratings are assigned by independent

[8] While Hawaiian Electric Industries, Inc. ("HEI") does not have a published Moody's rating, it was included in my proxy group. HEI's S&P rating falls within the comparable range for Avista, as does the Baa2 Moody's rating assigned to HEI's primary subsidiary, Hawaiian Electric Company, Inc.
[9] In addition to Emera, Inc., I also considered Algonquin Power & Utilities Company. While this company would be regarded as a comparable utility investment opportunity by investors, it did not meet my required screening criteria due to a major acquisition, which is ongoing.
[10] Emera Inc., *Investors Presentation* (March 2022). https://s25.q4cdn.com/978989322/files/doc_presentations/2022/11/November-December-2022-Marketing-Deck-Final.pdf (last visited Dec. 13, 2022).
[11] *Id.*

rating agencies for the purpose of providing investors with a broad assessment of the creditworthiness of a firm. Ratings generally extend from triple-A (the highest) to D (in default). Other symbols (*e.g.*, "BBB+") are used to show relative standing within a category. Because the rating agencies' evaluation includes virtually all of the factors normally considered important in assessing a firm's relative credit standing, corporate credit ratings provide a broad, objective measure of overall investment risk that is readily available to investors. Although the credit rating agencies are not immune to criticism, their rankings and analyses are widely cited in the investment community and referenced by investors. Investment restrictions tied to credit ratings continue to influence capital flows, and credit ratings are also frequently used as a primary risk indicator in establishing proxy groups to estimate the cost of common equity.

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

The Financial Strength Rating is designed as a guide to overall financial strength and creditworthiness, with the key inputs including financial leverage, business volatility measures, and company size. Value Line's Financial Strength Ratings range from "A++"

(strongest) down to "C" (weakest) in nine steps. Finally, Value Line's beta measures a utility's stock price volatility relative to the market as a whole. A stock that tends to respond less to market movements has a beta less than 1.00, while stocks that tend to move more than the market have betas greater than 1.00. Beta is the only relevant measure of investment risk under modern capital market theory and is widely cited in academics and in the investment industry as a guide to investors' risk perceptions. Moreover, in my experience Value Line is the most widely referenced source for beta in regulatory proceedings. As noted in *New Regulatory Finance*:

> Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors. … Value Line betas are computed on a theoretically sound basis using a broadly based market index, and they are adjusted for the regression tendency of betas to converge to 1.00.[12]

Q. How do the overall risks of your proxy group compare with Avista?

A. Table 1 compares the Utility Group with Avista across five key indicators of investment risk:

TABLE 1
COMPARISON OF RISK INDICATORS

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

Q. What does this comparison indicate regarding investors' assessment of the relative risk associated with your Utility Group?

A. As shown above, Avista's S&P credit rating is one notch below the average for the Utility Group, while the Company's Moody's credit rating is identical to that of the

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

Utility Group. Likewise, the average Value Line Safety Rank and Financial Strength measures for the Utility Group are very similar to those assigned to the Company. The average of Value Line's betas for the Utility Group is equal to Avista's beta. Considered together, this comparison of objective measures, which consider a broad spectrum of risks, including financial and business position, and exposure to firm-specific factors, indicates that investors would likely conclude that the overall investment risks for Avista are comparable to those of the firms in the Utility Group.

C. Discounted Cash Flow Analyses

Q. Please describe the underlying premise of the DCF.

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) that will be received while holding the stock, discounted at investors' required rate of return. Rather than developing annual estimates of cash flows into perpetuity, the DCF model can be simplified to a "constant growth" form:[13]

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

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:

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

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

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

Q. What steps are required to apply the constant growth DCF model?

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

Q. How do you determine the dividend yields for the Utility Group?

A. I rely on Value Line's estimates of dividends to be paid by each of these utilities over the next twelve months as D_1. This annual dividend was then divided by a 30-day average stock price for each utility to arrive at the expected dividend yield. The expected dividends, stock prices, and resulting dividend yields for the firms in the Utility Group are presented on page 1 of Exhibit No. 3, Schedule 5. As shown there, dividend yields for the firms in the Utility Group ranged from 2.6% to 5.3% and averaged 4.0%.

Q. What is the next step in applying the constant growth DCF model?

A. The next step is to evaluate long-term growth expectations, or "g", for the firm in question. In constant growth DCF theory, earnings, dividends, book value, and market price are all assumed to grow in lockstep, and the growth horizon of the DCF model

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

Q. What are investors most likely to consider in developing their long-term growth expectations?

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

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

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

growth rates are not routinely published, indicates that projected EPS growth rates are likely to provide a superior indicator of the future long-term growth expected by investors.

Q. What are security analysts currently projecting in the way of growth for the firms in the Utility Proxy Group?

A. The projected EPS growth rates for each of the firms in the Utility Group reported by Value Line, IBES,[14] and Zacks Investment Research ("Zacks") are displayed on page 2 of Exhibit No. 3, Schedule 5.

Q. How else are investors' expectations of future long-term growth prospects often estimated for use in the constant growth DCF model?

A. In constant growth theory, growth in book equity will be equal to the product of the earnings retention ratio (one minus the dividend payout ratio) and the earned rate of return on book equity. Furthermore, if the earned rate of return and the payout ratio are constant over time, growth in earnings and dividends will be equal to growth in book value. Despite the fact that these conditions are seldom, if ever, met in practice, this "sustainable growth" approach may provide a rough guide for evaluating a firm's growth prospects and is frequently proposed in regulatory proceedings.

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

[14] Formerly I/B/E/S International, Inc., IBES growth rates are now compiled and published by Refinitiv.

summarized on page 2 of Exhibit No. 3, Schedule 5, with the underlying details being presented on Exhibit No. 3, Schedule 6.

The sustainable growth rate analysis shown in Exhibit No. 3, Schedule 6 incorporates an "adjustment factor" because Value Line's reported returns are based on year-end book values. Since earnings is a flow over the year while book value is determined at a given point in time, the measurement of earnings and book value are distinct concepts. It is this fundamental difference between a flow (earnings) and point estimate (book value) that makes it necessary to adjust to mid-year in calculating the ROE. Given that book value will increase or decrease over the year, using year-end book value (as Value Line does) understates or overstates the average investment that corresponds to the flow of earnings. To address this concern, earnings must be matched with a corresponding representative measure of book value, or the resulting ROE will be distorted. The adjustment factor determined in Exhibit No. 3, Schedule 6 is solely a means of converting Value Line's end-of-period values to an average return over the year, and the formula for this adjustment is supported in recognized textbooks and has been adopted by other regulators.[15]

Q. Are there significant shortcomings associated with the "br+sv" growth rate?

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

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

growth. Second, empirical research in the finance literature indicates that sustainable growth rates are not as significantly correlated to measures of value, such as share prices, as are analysts' EPS growth forecasts.[16] The "sustainable growth" approach is included for completeness, but evidence indicates that analysts' forecasts provide a superior and more direct guide to investors' growth expectations. Accordingly, I give less weight to cost of equity estimates based on br+sv growth rates in evaluating the results of the DCF model.

Q. What DCF cost of equity estimates are implied for the Utility Group?

A. After combining the dividend yields and respective growth projections for each utility, the resulting cost of equity estimates are shown on page 3 of Exhibit No. 3, Schedule 5.

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

A. Yes. When 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. How do you evaluate DCF estimates at the low end of the range?

A. I base my evaluation of DCF estimates at the low end of the range on the fundamental risk-return tradeoff, which holds that investors will only take on more risk if they expect to earn a higher rate of return to compensate them for the greater uncertainly. Because common stocks lack the protections associated with an investment in long-term bonds, a utility's common stock imposes far greater risks on investors. As a result, the rate of return that investors require from a utility's common stock is considerably higher than the

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

yield offered by senior, long-term debt. Consistent with this principle, DCF results that are not sufficiently higher than the yield available on less risky utility bonds must be eliminated.

Q. Have other regulators employed such tests?

A. Yes. FERC has noted that adjustments are justified where applications of the DCF approach and other methods produce illogical results. FERC evaluates low-end DCF results against observable yields on long-term public utility debt and has recognized that it is appropriate to eliminate estimates that do not sufficiently exceed this threshold,[17] and also excludes estimates that are "irrationally or anomalously high."[18] Similarly, the Staff of the Maryland Public Service Commission has also eliminated DCF values where they do not offer a sufficient premium above the cost of debt to be attractive to an equity investor.[19]

Q. Do you exclude any estimates at the low or high end of the range of DCF results?

A. Yes. As highlighted on page 3 of Exhibit No. 3, Schedule 5, I remove DCF cost of equity estimates ranging from -1.9% to 7.2%. Based on my professional experience and the risk-return tradeoff principle that is fundamental to finance, it is inconceivable that investors are not requiring a substantially higher rate of return for holding common stock. As a result, these values provide little guidance as to the returns investors require from utility common stocks and should be excluded.

Also highlighted on page 3 of Exhibit No. 3, Schedule 5, I eliminate a high-end DCF estimate of 20.8%. The upper end of the remaining DCF results for the Utility Group is set by a cost of equity estimate of 13.6%. While a 13.6% cost of equity estimate may exceed

[17] See, *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc*., 169 FERC ¶ 61,129 at PP 387, 388 (2019).
[18] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 171 FERC ¶ 61,154 at P 152 (2020).
[19] See, *e.g.*, Maryland Public Service Commission, Case No. 9670, *Direct Testimony and Exhibits of Drew M. McAuliffe* (Dec. 2, 2021) at 15-16.

the majority of the remaining values, low-end DCF estimates in the 7.4% to 7.6% range are assuredly far below investors' required rate of return. Taken together and considered along with the balance of the results, the remaining values provide a reasonable basis on which to frame the range of plausible DCF estimates and evaluate investors' required rate of return.

Q. What ROE estimates are implied by your DCF results for the Utility Group?

A. As shown on page 3 of Exhibit No. 3, Schedule 5 and summarized in Table 2, application of the constant growth DCF model results in the following ROE estimates:

TABLE 2
DCF RESULTS – UTILITY GROUP

Growth Rate	Average	Midpoint
Value Line	9.4%	9.6%
IBES	10.4%	11.4%
Zacks	9.7%	10.2%
br + sv	9.1%	9.4%

D. Capital Asset Pricing Model

Q. Please describe the CAPM.

A. The CAPM is a theory of market equilibrium that measures risk using the beta coefficient. Assuming investors are fully diversified, the relevant risk of an individual asset (*e.g.*, common stock) is its volatility relative to the market as a whole, with beta reflecting the tendency of a stock's price to follow changes in the market. A stock that tends to respond less to market movements has a beta less than 1.00, 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,
β_j = beta, or systematic risk, for stock j.

Under the CAPM formula above, a stock's required return is a function of the risk-free rate (R_f), plus a risk premium that is scaled to reflect the relative volatility of a firm's stock price, as measured by beta (β). Like the DCF model, the CAPM is an *ex-ante,* or forward-looking model based on expectations of the future. As a result, 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. Why is the CAPM approach a relevant component when evaluating the cost of equity for Avista?

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

Q. How do you apply the CAPM to estimate the ROE?

A. Application of the CAPM to the Utility Group based on a forward-looking estimate for investors' required rate of return from common stocks is presented on Exhibit No. 3, Schedule 7. To capture the expectations of today's investors in current capital

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

The dividend yield for each firm is obtained from Value Line, and the growth rate is equal to the average of the earnings growth projections from IBES, Value Line, and Zacks for each firm, with each firm's dividend yield and growth rate being weighted by its proportionate share of total market value. After removing companies with growth rates that are negative or greater than 20%, the weighted average of the projections for the individual firms implies an average growth rate over the next five years of 9.7%. Combining this average growth rate with a year-ahead dividend yield of 2.0% results in a current cost of common equity estimate for the market as a whole (R_m) of 11.7%. Subtracting a 3.5% risk-free rate based on the average yield on 30-year Treasury bonds for the six-months ending November 2022 produced a market equity risk premium of 8.2%.

Q. What is the source of the beta values you used to apply the CAPM?

A. As indicated earlier in my discussion of risk measures for the proxy group, I relied on the beta values reported by Value Line, which in my experience is the most widely referenced source for beta in regulatory proceedings.

Q. What else should be considered in applying the CAPM?

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

> One of the most remarkable discoveries of modern finance is 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.[20]

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, researchers have developed size premiums that need to be added to account for the level of a firm's market capitalization in determining the CAPM cost of equity.[21] Accordingly, my CAPM analysis also incorporates an adjustment to recognize the impact of size distinctions, as measured by the market capitalization for the firms in the Utility Group.

Q. Is this size adjustment related to the relative size of Avista as compared with the proxy group?

A. No. I am not proposing to apply a general size risk premium in evaluating a fair and reasonable ROE for the Company and my recommendation does not include any adjustment related to the relative size of Avista. Rather, this size adjustment is specific to the CAPM and merely corrects for an observed inability of the beta measure to fully reflect the risks perceived by investors for the firms in the proxy groups. As FERC has recognized, "This type of size adjustment is a generally accepted approach to CAPM analyses."[22]

[20] Morningstar, *2015 Ibbotson SBBI Classic Yearbook*, at 99.
[21] Originally compiled by Ibbotson Associates and published in their annual yearbook entitled, *Stocks, Bonds, Bills and Inflation*, these size premia are now developed by Kroll and presented in its *Cost of Capital Navigator*.
[22] Opinion No. 531-B, 150 FERC ¶ 61,165 at P 117 (2015).

Q. What is the implied ROE for the Utility Group using the CAPM approach?

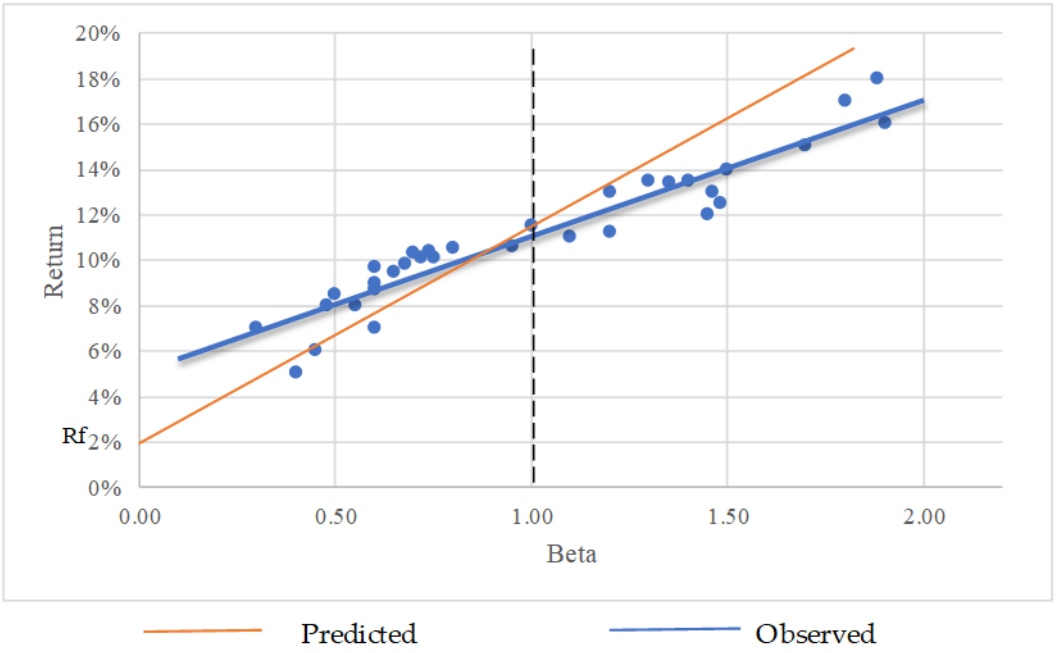
A. As shown on Exhibit No. 3, Schedule 7, after adjusting for the impact of firm size, the CAPM approach implies an average ROE for the Utility Group of 11.4%.

E. Empirical Capital Asset Pricing Model

Q. How does the ECAPM approach differ from traditional applications of the CAPM?

A. Empirical tests of the CAPM have shown that low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. In other words, the CAPM tends to overstate the actual sensitivity of the cost of capital to beta, with low-beta stocks tending to have higher returns and high-beta stocks tending to have lower risk returns than predicted by the CAPM. This is illustrated graphically in Figure 1:

FIGURE 1
CAPM – PREDICTED VS. OBSERVED RETURNS



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

> As discussed in the previous section, several finance scholars have developed refined and expanded versions of the standard CAPM by relaxing the constraints imposed on the CAPM, such as dividend yield, size, and skewness effects. These enhanced CAPMs typically produce a risk-return relationship that is flatter than the CAPM prediction in keeping with the actual observed risk-return relationship. The ECAPM makes use of these empirical relationships.[23]

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

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

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

Q. What cost of equity is indicated by the ECAPM?

A. My application of the ECAPM is based on the same forward-looking market rate of return, risk-free rates, and beta values discussed earlier in connections with the

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

CAPM. As shown on Exhibit No. 3, Schedule 8, applying the forward-looking ECAPM approach to the firms in the Utility Group results in an average cost of equity estimate of 11.6%.

F. Utility Risk Premium

Q. Please briefly describe the risk premium method.

A. The risk premium method of estimating investors' required rate of return extends to common stocks the risk-return tradeoff observed with bonds. The cost of equity is estimated by first determining the additional return investors require to forgo the relative safety of bonds and to bear the greater risks associated with common stock, and by then adding this equity risk premium to the current yield on bonds. Like the DCF model, the risk premium method is capital market oriented. However, unlike DCF models, which indirectly impute the cost of equity, risk premium methods directly estimate investors' required rate of return by adding an equity risk premium to observable bond yields.

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, which holds that investors will require a premium in the form of a higher return in order to assume additional risk. This method is routinely referenced by the investment community and in academia and regulatory proceedings, and provides an important tool in estimating a fair ROE for Avista.

Q. How do you implement the risk premium method?

A. Estimates of equity risk premiums for utilities are based on surveys of previously authorized ROEs. Authorized ROEs presumably reflect regulatory commissions' best estimates of the cost of equity, however determined, at the time they issued their final

order. Such ROEs should represent a balanced and impartial outcome that considers the need to maintain a utility's financial integrity and ability to attract capital. Moreover, allowed returns are an important consideration for investors and have the potential to influence other observable investment parameters, including credit ratings and borrowing costs. Thus, when considered in the context of a complete and rigorous analysis, this data provides a logical and frequently referenced basis for estimating equity risk premiums for regulated utilities.

Q. How do you calculate the equity risk premiums based on allowed returns?

A. The ROEs authorized for electric utilities by regulatory commissions across the U.S. are compiled by S&P Global Market Intelligence and published in its *RRA Regulatory Focus* report. On page 2 of Exhibit No. 3, Schedule 9, the average yield on public utility bonds is subtracted from the average allowed ROE for electric utilities to calculate equity risk premiums for each year between 1974 and 2021.[24] As shown there, over this period these equity risk premiums for electric utilities average 3.87%, and the yields on public utility bonds average 7.89%.

Q. Is there any capital market relationship that must be considered when implementing the risk premium method?

A. Yes. The magnitude of equity risk premiums is not constant and equity risk premiums tend to move inversely with interest rates. In other words, when interest rate levels are relatively high, equity risk premiums narrow, and when interest rates are relatively low, equity risk premiums widen. The implication of this inverse relationship is that the cost of equity does not move as much as, or in lockstep with, interest rates. Accordingly, for a

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

1% increase or decrease in interest rates, the cost of equity may only rise or fall some fraction of 1%. Therefore, when implementing the risk premium method, adjustments may be required to incorporate this inverse relationship if current interest rate levels have diverged from the average interest rate level represented in the data set.

Current bond yields are lower than those prevailing over the risk premium study periods. Given that equity risk premiums move inversely with interest rates, these lower bond yields also imply an increase in the equity risk premium that investors require to accept the higher uncertainties associated with an investment in utility common stocks versus bonds. In other words, higher required equity risk premiums offset the impact of declining interest rates on the ROE.

Q. Has this inverse relationship been documented in the financial research?

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

> Published studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carelton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates – rising when rates fell and declining when rates rose.[25]

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

Other regulators have also recognized that, while the cost of equity trends in the same direction as interest rates, these variables do not move in lock-step.[26] This relationship is illustrated in the figure on page 3 of Exhibit No. 3, Schedule 9.

Q. What ROE is implied by the risk premium method using surveys of allowed returns?

A. Based on the regression output between the interest rates and equity risk premiums displayed on page 3 of Exhibit No. 3, Schedule 9, the equity risk premium for electric utilities increases by approximately 43 basis points for each percentage point drop in the yield on average public utility bonds. As illustrated on page 1 of Exhibit No. 3, Schedule 9 with an average yield on public utility bonds for the six months ending November 2022 of 5.26%, this implies a current equity risk premium of 5.00% for electric utilities. Adding this equity risk premium to the six-month average yield on Baa utility bonds of 5.55% implies a current ROE of 10.55%.

G. Expected Earnings Approach

Q. What other analyses do you conduct to estimate the ROE?

A. I also evaluate the cost of common equity using the expected earnings method. Reference to rates of return available from alternative investments of comparable risk can provide an important benchmark in assessing the return necessary to assure confidence in the financial integrity of a firm and its ability to attract capital. This expected earnings approach is consistent with the economic underpinnings for a fair rate of return

[26] *See, e.g.*, Texas Public Utility Commission, PUC Docket No. 51415, *Direct Testimony of Mark Filarowicz* (Apr. 7, 2021) at 22-23 (*noting*, "several studies have identified an inverse relationship between the level of interest rates and the size of equity risk premiums."); California Public Utilities Commission, Decision 08-05-035 (May 29, 2008); Entergy Mississippi Formula Rate Plan FRP-7, https://cdn.entergy-mississippi.com/userfiles/content/price/tariffs/eml_frp.pdf (last visited Dec 13, 2022); Opinion No. 531, 147 FERC ¶ 61,234 at P 147 (2014).

established by the U.S. Supreme Court in *Bluefield*[27] and *Hope*.[28] Moreover, it avoids the complexities and limitations of capital market methods and instead focuses on the returns earned on book equity, which are readily available to investors.

Q. What economic premise underlies the expected earnings approach?

A. The simple, but powerful concept underlying the expected earnings approach is that investors compare each investment alternative with the next best opportunity. If the utility is unable to offer a return similar to that available from other opportunities of comparable risk, investors will become unwilling to supply the capital on reasonable terms. For existing investors, denying the utility an opportunity to earn what is available from other similar risk alternatives prevents them from earning their opportunity cost of capital. Such an outcome would violate the *Hope* and *Bluefield* standards and undermine the utility's access to capital on reasonable terms.

Q. How is the expected earnings approach typically implemented?

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

[27] *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679 (1923) ("*Bluefield*").
[28] *Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 391 (1944) ("*Hope*").

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

Q. What ROE is indicated for the Utility Group based on the expected earnings approach?

A. For the firms in the Utility Group, the year-end returns on common equity projected by Value Line over its forecast horizon are shown on Exhibit No. 3, Schedule 10. As I explained earlier in my discussion of the br+sv growth rates used in applying the DCF model, Value Line's returns on common equity are calculated using year-end equity balances, which understates the average return earned over the year.[29] Accordingly, these year-end values were converted to average returns using the same adjustment factor

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

discussed earlier and developed on Exhibit No. 3, Schedule 6. As shown on Exhibit No. 3, Schedule 10, Value Line's projections suggest an average ROE of 11.0% for the Utility Group.

II. NON-UTILITY BENCHMARK

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

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

Q. Do utilities have to compete with non-regulated firms for capital?

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

Q. Is it consistent with the *Bluefield* and *Hope* cases to consider investors' required ROE for non-utility companies?

A. Yes. The cost of equity capital in the competitive sector of the economy form the very underpinning for utility ROEs because regulation purports to serve as a substitute for the actions of competitive markets. The Supreme Court has recognized that it is the

degree of risk, not the nature of the business, which is relevant in evaluating an allowed ROE for a utility. The *Bluefield* case refers to "business undertakings attended with comparable risks and uncertainties." It does not restrict consideration to other utilities. Similarly, the *Hope* case states:

> By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.[30]

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

Q. Does consideration of the results for the Non-Utility Group improve the reliability of DCF results?

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

Q. What criteria do you apply to develop the Non-Utility Group?

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

1) pay common dividends;
2) have a Safety Rank of "1";
3) have a Financial Strength Rating of "A" or greater;
4) have a beta of 1.00 or less; and
5) have investment grade credit ratings from S&P and Moody's.

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

Q. How do the overall risks of this Non-Utility Group compare with the Utility Group and Avista?

A. Table 3 compares the Non-Utility Group with the Utility Group and Avista across the measures of investment risk discussed earlier:

TABLE 3
COMPARISON OF RISK INDICATORS

			Value Line		
	S&P	Moody's	Safety Rank	Financial Strength	Beta
Non-Utility Group	A-	A3	1	A+	0.79
Utility Group	BBB+	Baa2	2	A	0.90
Avista	BBB	Baa2	2	B++	0.90

As shown above, the risk indicators for the Non-Utility Group uniformly suggest less risk than for the Utility Group and Avista.

The companies that make up the Non-Utility Group are representative of the pinnacle of corporate America. These firms, which include household names such as McDonald's, Cisco, Procter & Gamble, and Walmart, have long corporate histories, well-established track records, and exceedingly conservative risk profiles. Many of these companies pay dividends on a par with utilities, with the dividend yield for the group averaging 2.3 percent. Moreover, because of their significance and name recognition, these companies receive intense scrutiny by the investment community, which increases confidence that published growth estimates are representative of the consensus expectations reflected in common stock prices.

Q. What are the results of your DCF analysis for the Non-Utility Group?

A. I apply the DCF model to the Non-Utility Group using the same analysts' EPS growth projections described earlier for the Utility Group. The results of my DCF

analysis for the Non-Utility Group are presented on page 3 of Exhibit No. 3, Schedule 13. As summarized in Table 4, after eliminating illogical values, application of the constant growth DCF model results in the following cost of equity estimates:

TABLE 4
DCF RESULTS – NON-UTILITY GROUP

Growth Rate	Average	Midpoint
Value Line	10.7%	11.1%
IBES	10.5%	11.4%
Zacks	10.5%	10.7%

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

SUMMARY OF RESULTS

Method	Average
DCF	
Value Line	9.4%
IBES	10.4%
Zacks	9.7%
Internal br + sv	9.1%
CAPM	11.4%
ECAPM	11.6%
Utility Risk Premium	10.6%
Expected Earnings	11.0%

ROE Recommendation			
Cost of Equity			
Range	9.9%	--	11.3%
Flotation Cost Adjustment		0.07%	
Recommended ROE Range			
Range	**9.97%**	**--**	**11.37%**
Midpoint		**10.67%**	

UTILITY GROUP

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

Notes
D - Delivery-only utility.
C - Fully-forecasted test years commonly used in the state listed for this operating company.
O - Fully-forecasted test years occasionally used in the state listed for this operating company.
P - Partially-forecasted test years commonly or occasionally used in the state listed for this operating company.

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

ELECTRIC GROUP OPERATING COS.

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

ELECTRIC GROUP OPERATING COS.

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

ELECTRIC GROUP OPERATING COS.

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

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

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

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

Notes

D - Delivery-only utility.

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

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

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

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

CAPITAL STRUCTURE

UTILITY GROUP

		At Year-end 2021 (a)			Value Line Projected (b)		
	Company	**Debt**	**Preferred**	**Common Equity**	**Debt**	**Preferred**	**Common Equity**
1	ALLETE	40.2%	0.0%	59.8%	40.5%	0.0%	59.5%
2	Ameren Corp.	57.1%	0.0%	42.9%	51.0%	0.5%	48.5%
3	Avista Corp.	49.9%	0.0%	50.1%	48.5%	0.0%	51.5%
4	Black Hills Corp.	58.8%	0.0%	41.2%	50.0%	0.0%	50.0%
5	CenterPoint Energy	63.1%	3.1%	33.8%	60.0%	2.5%	37.5%
6	CMS Energy Corp.	63.4%	1.1%	35.5%	61.0%	1.0%	38.0%
7	Dominion Energy	58.4%	2.7%	38.9%	56.5%	2.0%	41.5%
8	DTE Energy Co.	66.6%	0.0%	33.4%	61.0%	0.0%	39.0%
9	Duke Energy Corp.	55.5%	0.0%	44.5%	61.0%	1.5%	37.5%
10	Edison International	58.7%	0.0%	41.3%	61.5%	6.5%	32.0%
11	Emera Inc.	59.1%	5.7%	35.2%	56.2%	0.0%	43.8%
12	Entergy Corp.	68.5%	0.6%	31.0%	66.0%	0.5%	33.5%
13	Exelon Corp.	52.9%	0.0%	47.1%	64.5%	0.0%	35.5%
14	Hawaiian Elec.	49.8%	0.7%	49.4%	50.0%	0.5%	49.5%
15	IDACORP, Inc.	42.8%	0.0%	57.2%	50.0%	0.0%	50.0%
16	NorthWestern Corp.	52.2%	0.0%	47.8%	49.0%	0.0%	51.0%
17	OGE Energy Corp.	52.6%	0.0%	47.4%	50.0%	0.0%	50.0%
18	Otter Tail Corp.	43.5%	0.0%	56.5%	42.5%	0.0%	57.5%
19	Pinnacle West Capital	54.0%	0.0%	46.0%	55.0%	0.0%	45.0%
20	Pub Sv Enterprise Grp.	52.4%	0.0%	47.6%	57.5%	0.0%	42.5%
21	Sempra Energy	43.6%	0.0%	56.4%	46.5%	1.5%	52.0%
22	Southern Company	61.6%	0.3%	38.0%	63.0%	0.0%	37.0%
	Minimum	**40.2%**	**0.0%**	**31.0%**	**40.5%**	**0.0%**	**32.0%**
	Maximum	**68.5%**	**5.7%**	**59.8%**	**66.0%**	**6.5%**	**59.5%**
	Average	**54.8%**	**0.7%**	**44.6%**	**54.6%**	**0.8%**	**44.7%**

(a) 2021 SEC Form 10-K reports.

(b) The Value Line Investment Survey (Sep. 9, Oct. 21 and Nov. 11, 2022).

UTILITY GROUP OPERATING SUBSIDIARIES

		At Year-End 2021 (a)		
	Operating Company	**Debt**	**Preferred**	**Common Equity**
1	**ALLETE**			
	ALLETE, Inc. (Minnesota Power)	43.9%	0.0%	56.1%
2	**AMEREN CORP.**			
	Ameren Illinois Co.	43.8%	0.5%	55.7%
	Union Electric Co.	48.7%	0.7%	50.6%
3	**AVISTA CORP.**			
	Avista Corp.	52.8%	0.0%	47.2%
	Alaska Electric Light & Power	39.5%	0.0%	60.5%
4	**BLACK HILLS CORP.**			
	Black Hills Power	52.0%	0.0%	48.0%
	Cheyenne Light Fuel & Power	53.6%	0.0%	46.4%
	Black Hills/Colorado Electric Utility Co	53.4%	0.0%	46.6%
5	**CENTERPOINT ENERGY**			
	Centerpoint Energy Houston Electric	60.3%	0.0%	39.7%
6	**CMS ENERGY**			
	Consumers Energy Co.	47.7%	0.2%	52.1%
7	**DOMINION ENERGY**			
	Virginia Electric & Power	47.2%	0.0%	52.8%
	Dominion Energy South Carolina	48.7%	1.2%	50.1%
8	**DTE ENERGY CO.**			
	DTE Electric Co.	50.0%	0.0%	50.0%
9	**DUKE ENERGY**			
	Duke Energy Carolinas	48.9%	0.0%	51.1%
	Duke Energy Florida	50.6%	0.0%	49.4%
	Duke Energy Indiana	46.3%	0.0%	53.7%
	Duke Energy Ohio	41.7%	0.0%	58.3%
	Duke Energy Progress	51.8%	0.0%	48.2%
	Duke Energy Kentucky	50.4%	0.0%	49.6%
10	**EDISON INTERNATIONAL**			
	Southern California Edison Co.	52.9%	4.6%	42.4%
11	**EMERA INC.**			
	Tampa Electric Co.	46.3%	0.0%	53.7%
12	**ENTERGY CORP.**			
	Entergy Arkansas Inc.	52.5%	0.0%	47.5%
	Entergy Louisiana LLC	57.2%	0.0%	42.8%
	Entergy Mississippi Inc.	54.2%	0.0%	45.8%
	Entergy New Orleans Inc.	55.2%	0.0%	44.8%
	Entergy Texas Inc.	48.7%	0.8%	50.5%

UTILITY GROUP OPERATING SUBSIDIARIES

		At Year-End 2021 (a)		
	Operating Company	**Debt**	**Preferred**	**Common Equity**
13	**EXELON CORP.**			
	Delmarva Power and Light	50.5%	0.0%	49.5%
	Baltimore Gas & Electric Co.	46.4%	0.0%	53.6%
	Commonweath Edison Co.	44.7%	0.0%	55.3%
	PECO Energy Co.	46.1%	0.0%	53.9%
	Potomac Electric Power Co.	49.8%	0.0%	50.2%
	Atlantic City Electric Co.	50.2%	0.0%	49.8%
14	**HAWAIIAN ELEC.**			
	Hawaiian Electric Co.	42.2%	0.9%	56.9%
15	**IDACORP**			
	Idaho Power Co.	44.8%	0.0%	55.2%
16	**NORTHWESTERN CORP.**			
	NorthWestern Corporation	52.2%	0.0%	47.8%
17	**OGE ENERGY CORP.**			
	Oklahoma G&E	46.5%	0.0%	53.5%
18	**OTTER TAIL CORP.**			
	Otter Tail Power Co.	47.6%	0.0%	52.4%
19	**PINNACLE WEST CAPITAL**			
	Arizona Public Service Co.	48.1%	0.0%	51.9%
20	**PUB SV ENTERPRISE GRP**			
	Pub Service Electric & Gas Co.	44.7%	0.0%	55.3%
21	**SEMPRA ENERGY**			
	San Diego Gas & Electric	48.1%	0.0%	51.9%
	Oncor Electric Delivery	42.5%	0.0%	57.5%
22	**SOUTHERN CO.**			
	Alabama Power Co.	46.8%	1.4%	51.8%
	Georgia Power Co.	44.4%	0.0%	55.6%
	Mississippi Power Co.	44.7%	0.0%	55.3%
`	**Minimum**	**39.5%**	**0.0%**	**39.7%**
	Maximum	**60.3%**	**4.6%**	**60.5%**
	Average	**48.6%**	**0.2%**	**51.2%**

(a) Data from 2021 Company Form 10-K and FERC Form 1 reports.

DIVIDEND YIELD

	Company	(a) Price	(b) Dividends	Yield
1	ALLETE	$ 53.07	$ 2.60	4.9%
2	Ameren Corp.	$ 79.93	$ 2.44	3.1%
3	Avista Corp.	$ 38.23	$ 1.76	4.6%
4	Black Hills Corp.	$ 64.57	$ 2.50	3.9%
5	CenterPoint Energy	$ 27.65	$ 0.73	2.6%
6	CMS Energy Corp.	$ 56.44	$ 1.89	3.3%
7	Dominion Energy	$ 66.09	$ 2.79	4.2%
8	DTE Energy Co.	$ 110.22	$ 3.54	3.2%
9	Duke Energy Corp.	$ 91.44	$ 4.02	4.4%
10	Edison International	$ 58.01	$ 2.80	4.8%
11	Emera Inc.	$ 52.10	$ 2.76	5.3%
12	Entergy Corp.	$ 104.75	$ 4.28	4.1%
13	Exelon Corp.	$ 37.64	$ 1.40	3.7%
14	Hawaiian Elec.	$ 36.33	$ 1.40	3.9%
15	IDACORP, Inc.	$ 99.80	$ 3.16	3.2%
16	NorthWestern Corp.	$ 51.59	$ 2.55	4.9%
17	OGE Energy Corp.	$ 36.06	$ 1.66	4.6%
18	Otter Tail Corp.	$ 62.00	$ 1.65	2.7%
19	Pinnacle West Capital	$ 65.62	$ 3.50	5.3%
20	Pub Sv Enterprise Grp.	$ 56.29	$ 2.25	4.0%
21	Sempra Energy	$ 148.69	$ 4.75	3.2%
22	Southern Company	$ 65.09	$ 2.72	4.2%
	Average			**4.0%**

(a) Average of closing prices for 30 trading days ended Nov. 11, 2022.

(b) The Value Line Investment Survey, Summary & Index (Nov. 11, 2022).

GROWTH RATES

		(a)	(b)	(c)	(d)
		Earnings Growth			br+sv
	Company	V Line	IBES	Zacks	Growth
1	ALLETE	6.0%	8.7%	8.2%	4.8%
2	Ameren Corp.	6.5%	6.3%	7.2%	5.6%
3	Avista Corp.	3.0%	5.2%	5.2%	3.9%
4	Black Hills Corp.	6.0%	5.4%	5.4%	5.7%
5	CenterPoint Energy	6.5%	-0.4%	3.5%	5.0%
6	CMS Energy Corp.	6.5%	8.4%	8.0%	6.0%
7	Dominion Energy	5.5%	6.2%	5.7%	6.5%
8	DTE Energy Co.	4.5%	4.0%	6.0%	6.4%
9	Duke Energy Corp.	5.0%	5.5%	5.5%	3.2%
10	Edison International	16.0%	4.4%	2.6%	6.4%
11	Emera Inc.	6.5%	5.1%	n/a	4.0%
12	Entergy Corp.	4.0%	6.2%	6.8%	5.7%
13	Exelon Corp.	n/a	6.2%	7.1%	4.3%
14	Hawaiian Elec.	4.0%	1.3%	2.6%	4.2%
15	IDACORP, Inc.	4.0%	3.4%	3.4%	3.7%
16	NorthWestern Corp.	2.5%	4.5%	1.7%	3.5%
17	OGE Energy Corp.	6.5%	1.9%	5.0%	5.5%
18	Otter Tail Corp.	4.5%	9.0%	n/a	5.1%
19	Pinnacle West Capital	0.5%	-7.2%	n/a	4.6%
20	Pub Sv Enterprise Grp.	4.5%	3.2%	3.2%	5.5%
21	Sempra Energy	7.0%	3.9%	5.7%	0.0%
22	Southern Company	6.5%	6.5%	4.0%	0.0%

(a) The Value Line Investment Survey (Sep. 9, Oct. 21 and Nov. 11, 2022).

(b) www.finance.yahoo.com (retreived Nov. 11, 2022).

(c) www.zacks.com (retrieved Nov. 11, 2022).

(d) See Schedule 7.

COST OF EQUITY ESTIMATES

	Company	(a) V Line	(a) IBES	(a) Zacks	(a) br+sv Growth
1	ALLETE	10.9%	13.6%	13.0%	9.7%
2	Ameren Corp.	9.6%	9.3%	10.3%	8.7%
3	Avista Corp.	7.6%	9.8%	9.8%	8.5%
4	Black Hills Corp.	9.9%	9.3%	9.2%	9.6%
5	CenterPoint Energy	9.1%	2.2%	6.2%	7.6%
6	CMS Energy Corp.	9.8%	11.8%	11.4%	9.3%
7	Dominion Energy	9.7%	10.4%	9.9%	10.7%
8	DTE Energy Co.	7.7%	7.2%	9.2%	9.6%
9	Duke Energy Corp.	9.4%	9.9%	9.9%	7.6%
10	Edison International	20.8%	9.2%	7.4%	11.2%
11	Emera Inc.	11.8%	10.4%	n/a	9.3%
12	Entergy Corp.	8.1%	10.3%	10.8%	9.8%
13	Exelon Corp.	n/a	9.9%	10.8%	8.0%
14	Hawaiian Elec.	7.9%	5.2%	6.4%	8.1%
15	IDACORP, Inc.	7.2%	6.6%	6.5%	6.8%
16	NorthWestern Corp.	7.4%	9.4%	6.7%	8.5%
17	OGE Energy Corp.	11.1%	6.5%	9.6%	10.1%
18	Otter Tail Corp.	7.2%	11.7%	n/a	7.8%
19	Pinnacle West Capital	5.8%	-1.9%	n/a	10.0%
20	Pub Sv Enterprise Grp.	8.5%	7.2%	7.2%	9.5%
21	Sempra Energy	10.2%	7.1%	8.9%	3.2%
22	Southern Company	10.7%	10.7%	8.2%	4.2%
	Average (b)	**9.4%**	**10.4%**	**9.7%**	**9.1%**

(a) Sum of dividend yield (Schedule 6, p. 1) and respective growth rate (Schedule 6, p. 2).
(b) Excludes highlighted values.

BR+SV GROWTH RATE

UTILITY GROUP

		(a)	(a)	(a)	(b)	(c)	(d)	(e)		(f)	(g)		
		2026					Adjustment			"sv" Factor			
	Company	EPS	DPS	BVPS	b	r	Factor	Adjusted r	br	s	v	sv	br + sv
1	ALLETE	$4.75	$3.00	$54.00	36.8%	8.8%	1.0313	9.1%	3.3%	0.0424	0.3455	1.46%	4.8%
2	Ameren Corp.	$5.25	$3.10	$51.25	41.0%	10.2%	1.0389	10.6%	4.4%	0.0294	0.4306	1.27%	5.6%
3	Avista Corp.	$2.80	$2.05	$35.00	26.8%	8.0%	1.0296	8.2%	2.2%	0.0476	0.3636	1.73%	3.9%
4	Black Hills Corp.	$5.20	$2.95	$52.55	43.3%	9.9%	1.0294	10.2%	4.4%	0.0319	0.4161	1.33%	5.7%
5	CenterPoint Energy	$1.80	$0.95	$18.00	47.2%	10.0%	1.0280	10.3%	4.9%	0.0027	0.4000	0.11%	5.0%
6	CMS Energy Corp.	$3.75	$2.30	$29.25	38.7%	12.8%	1.0322	13.2%	5.1%	0.0155	0.5500	0.85%	6.0%
7	Dominion Energy	$5.30	$3.40	$42.00	35.8%	12.6%	1.0359	13.1%	4.7%	0.0323	0.5579	1.80%	6.5%
8	DTE Energy Co.	$7.50	$4.65	$60.75	38.0%	12.3%	1.0365	12.8%	4.9%	0.0274	0.5500	1.51%	6.4%
9	Duke Energy Corp.	$6.50	$4.30	$70.00	33.8%	9.3%	1.0133	9.4%	3.2%	0.0004	0.3778	0.02%	3.2%
10	Edison International	$6.25	$3.55	$47.85	43.2%	13.1%	1.0329	13.5%	5.8%	0.0105	0.5215	0.55%	6.4%
11	Emera Inc.	$4.20	$2.98	$42.10	29.0%	10.0%	1.0152	10.1%	2.9%	0.0249	0.4387	1.09%	4.0%
12	Entergy Corp.	$8.50	$5.10	$74.00	40.0%	11.5%	1.0308	11.8%	4.7%	0.0204	0.4618	0.94%	5.7%
13	Exelon Corp.	$2.90	$1.75	$28.75	39.7%	10.1%	0.9820	9.9%	3.9%	0.0078	0.4524	0.35%	4.3%
14	Hawaiian Elec.	$2.55	$1.60	$25.60	37.3%	10.0%	1.0192	10.2%	3.8%	0.0111	0.3976	0.44%	4.2%
15	IDACORP, Inc.	$6.00	$4.00	$63.95	33.3%	9.4%	1.0223	9.6%	3.2%	0.0106	0.4557	0.48%	3.7%
16	NorthWestern Corp.	$4.00	$2.68	$50.00	33.0%	8.0%	1.0277	8.2%	2.7%	0.0361	0.2308	0.83%	3.5%
17	OGE Energy Corp.	$3.25	$1.85	$26.00	43.1%	12.5%	1.0249	12.8%	5.5%	0.0002	0.4526	0.01%	5.5%
18	Otter Tail Corp.	$3.75	$2.20	$34.25	41.3%	10.9%	1.0383	11.4%	4.7%	0.0086	0.4731	0.41%	5.1%
19	Pinnacle West Capital	$5.25	$3.76	$58.50	28.4%	9.0%	1.0154	9.1%	2.6%	0.0141	0.3842	0.54%	3.1%
20	Pub Sv Enterprise Grp.	$4.35	$2.72	$33.75	37.5%	12.9%	1.0150	13.1%	4.9%	(0.0073)	0.5645	-0.41%	4.5%
21	Sempra Energy	$11.00	$5.70	$102.10	48.2%	10.8%	1.0213	11.0%	5.3%	(0.0144)	0.4696	-0.68%	4.6%
22	Southern Company	$4.75	$3.10	$32.25	34.7%	14.7%	1.0216	15.0%	5.2%	0.0045	0.5839	0.26%	5.5%

BR+SV GROWTH RATE

UTILITY GROUP

		(a)	(a)	(h)	(a)	(a)	(h)	(i)	(a)	(a)		(j)	(a)	(a)	(i)
		2021			2026			Chg	2026				Common Shares		
	Company	Eq Ratio	Tot Cap	Com Eq	Eq Ratio	Tot Cap	Com Eq	Equity	High	Low	Avg.	M/B	2021	2026	Growth
1	ALLETE	57.8%	$4,176	$2,414	59.5%	$5,550	$3,302	6.5%	$95.0	$70.0	$82.5	1.528	53.20	61.00	2.77%
2	Ameren Corp.	43.3%	$22,391	$9,695	48.5%	$29,500	$14,308	8.1%	$100.0	$80.0	$90.0	1.756	257.70	280.00	1.67%
3	Avista Corp.	52.5%	$4,105	$2,155	51.5%	$5,625	$2,897	6.1%	$65.0	$45.0	$55.0	1.571	71.50	83.00	3.03%
4	Black Hills Corp.	40.3%	$6,914	$2,786	50.0%	$7,475	$3,738	6.0%	$105.0	$75.0	$90.0	1.713	64.74	71.00	1.86%
5	CenterPoint Energy	34.5%	$24,973	$8,616	37.5%	$30,400	$11,400	5.8%	$35.0	$25.0	$30.0	1.667	628.92	634.00	0.16%
6	CMS Energy Corp.	34.2%	$18,760	$6,416	38.0%	$23,300	$8,854	6.7%	$75.0	$55.0	$65.0	2.222	289.76	300.00	0.70%
7	Dominion Energy	38.5%	$66,344	$25,542	41.5%	$88,100	$36,562	7.4%	$110.0	$80.0	$95.0	2.262	810.40	870.00	1.43%
8	DTE Energy Co.	37.5%	$23,236	$8,714	39.0%	$32,200	$12,558	7.6%	$155.0	$115.0	$135.0	2.222	193.75	206.00	1.23%
9	Duke Energy Corp.	43.1%	$109,744	$47,300	37.5%	$144,100	$54,038	2.7%	$130.0	$95.0	$112.5	1.607	769.00	770.00	0.03%
10	Edison International	33.2%	$41,959	$13,930	32.0%	$60,500	$19,360	6.8%	$120.0	$80.0	$100.0	2.090	380.38	390.00	0.50%
11	Emera Inc.	41.6%	$24,312	$10,116	43.8%	$26,880	$11,780	3.1%	$85.0	$65.0	$75.0	1.781	261.07	279.80	1.40%
12	Entergy Corp.	31.7%	$36,733	$11,644	33.5%	$47,300	$15,846	6.4%	$160.0	$115.0	$137.5	1.858	202.65	214.00	1.10%
13	Exelon Corp.	49.1%	$70,107	$34,423	35.5%	$81,000	$28,755	-3.5%	$60.0	$45.0	$52.5	1.826	979.00	1000.00	0.43%
14	Hawaiian Elec.	52.8%	$4,524	$2,389	49.5%	$5,850	$2,896	3.9%	$50.0	$35.0	$42.5	1.660	109.31	113.00	0.67%
15	IDACORP, Inc.	57.2%	$4,669	$2,671	50.0%	$6,675	$3,338	4.6%	$130.0	$105.0	$117.5	1.837	50.52	52.00	0.58%
16	NorthWestern Corp.	47.8%	$4,893	$2,339	51.0%	$6,050	$3,086	5.7%	$75.0	$55.0	$65.0	1.300	54.06	62.00	2.78%
17	OGE Energy Corp.	47.4%	$8,553	$4,054	50.0%	$10,400	$5,200	5.1%	$55.0	$40.0	$47.5	1.827	200.10	200.20	0.01%
18	Otter Tail Corp.	57.4%	$1,725	$990	57.5%	$2,525	$1,452	8.0%	$75.0	$55.0	$65.0	1.898	41.55	42.50	0.45%
19	Pinnacle West Capital	46.1%	$12,820	$5,910	45.0%	$15,325	$6,896	3.1%	$110.0	$80.0	$95.0	1.624	113.01	118.00	0.87%
20	Pub Sv Enterprise Grp.	48.7%	$29,657	$14,443	42.5%	$39,500	$16,788	3.1%	$85.0	$70.0	$77.5	2.296	504.00	496.00	-0.32%
21	Sempra Energy	53.3%	$47,069	$25,088	52.0%	$59,700	$31,044	4.4%	$220.0	$165.0	$192.5	1.885	316.92	305.00	-0.76%
22	Southern Company	35.6%	$78,285	$27,869	37.0%	$93,500	$34,595	4.4%	$90.0	$65.0	$77.5	2.403	1060.00	1070.00	0.19%

(a) The Value Line Investment Survey (Sep. 9, Oct. 21 and Nov. 11, 2022).
(b) "b" is the retention ratio, computed as (EPS-DPS)/EPS.
(c) "r" is the rate of return on book equity, computed as EPS/BVPS.
(d) Computed using the formula 2*(1+5-Yr. Change in Equity)/(2+5 Yr. Change in Equity).
(e) Product of average year-end "r" for 2026 and Adjustment Factor.
(f) Product of change in common shares outstanding and M/B Ratio.
(g) Computed as 1 - B/M Ratio.
(h) Product of total capital and equity ratio.
(i) Five-year rate of change.
(j) Average of High and Low expected market prices divided by 2026 BVPS.

CAPM

UTILITY GROUP

		(a)	(b)		(c)		(d)		(e)	(f)	
		Market Return (R_m)									
	Company	Div Yield	Proj. Growth	Cost of Equity	Risk-Free Rate	Risk Premium	Beta	Unadjusted K_e	Market Cap	Size Adjustment	CAPM Result
1	ALLETE	2.0%	9.7%	11.7%	3.5%	8.2%	0.90	10.9%	$3,400	0.91%	11.8%
2	Ameren Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	0.85	10.5%	$25,000	0.44%	10.9%
3	Avista Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	0.90	10.9%	$2,700	1.20%	12.1%
4	Black Hills Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	0.95	11.3%	$4,200	0.91%	12.2%
5	CenterPoint Energy	2.0%	9.7%	11.7%	3.5%	8.2%	1.10	12.5%	$20,000	0.44%	13.0%
6	CMS Energy Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	0.80	10.1%	$20,200	0.44%	10.5%
7	Dominion Energy	2.0%	9.7%	11.7%	3.5%	8.2%	0.85	10.5%	$58,300	-0.17%	10.3%
8	DTE Energy Co.	2.0%	9.7%	11.7%	3.5%	8.2%	0.95	11.3%	$26,000	0.44%	11.7%
9	Duke Energy Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	0.85	10.5%	$84,600	-0.17%	10.3%
10	Edison International	2.0%	9.7%	11.7%	3.5%	8.2%	0.95	11.3%	$22,100	0.44%	11.7%
11	Emera Inc.	2.0%	9.7%	11.7%	3.5%	8.2%	0.70	9.2%	$16,200	0.57%	9.8%
12	Entergy Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	0.95	11.3%	$24,300	0.44%	11.7%
13	Exelon Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	n/a	n/a	$37,800	-0.17%	n/a
14	Hawaiian Elec.	2.0%	9.7%	11.7%	3.5%	8.2%	0.85	10.5%	$3,700	0.91%	11.4%
15	IDACORP, Inc.	2.0%	9.7%	11.7%	3.5%	8.2%	0.80	10.1%	$4,900	0.91%	11.0%
16	NorthWestern Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	0.90	10.9%	$2,800	1.20%	12.1%
17	OGE Energy Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	1.00	11.7%	$8,300	0.57%	12.3%
18	Otter Tail Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	0.85	10.5%	$3,200	1.20%	11.7%
19	Pinnacle West Capital	2.0%	9.7%	11.7%	3.5%	8.2%	0.90	10.9%	$6,900	0.56%	11.4%
20	Pub Sv Enterprise Grp.	2.0%	9.7%	11.7%	3.5%	8.2%	0.90	10.9%	$28,000	0.44%	11.3%
21	Sempra Energy	2.0%	9.7%	11.7%	3.5%	8.2%	0.95	11.3%	$46,400	-0.17%	11.1%
22	Southern Company	2.0%	9.7%	11.7%	3.5%	8.2%	0.90	10.9%	$71,300	-0.17%	10.7%
	Average							**10.8%**			**11.4%**

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (retrieved Dec. 7, 2022)..
(b) Average of weighted average earnings growth rates from IBES, Value Line, and Zacks for dividend-paying stocks in the S&P 500 based on data from Refinitiv, as provided by fidelity.com (retrieved Dec. 7, 2022), www.valueline.com (retrieved Dec. 7, 2022)., and www.zacks.com (retrieved Dec. 7, 2022). Eliminated growth rates that were greater than 20%, as well as all negative values.
(c) Average yield on 30-year Treasury bonds for six-months ending Nov. 2022 based on data from Moody's Investors Service.
(d) The Value Line Investment Survey, Summary & Index (Nov. 11, 2022).
(e) The Value Line Investment Survey (Sep. 9, Oct. 21 and Nov. 11, 2022).
(f) Kroll, 2022 Supplementary CRSP Decile Size Study Data Exhibits.

ECAPM

UTILITY GROUP

		(a)	(b)		(c)		(d)		(e)	(d)				(f)	(g)	
		Market Return (R_m)					Unadjusted RP		Beta	Adjusted RP						
	Company	Div Yield	Proj. Growth	Cost of Equity	Risk-Free Rate	Risk Premium	Weight	RP^1		Weight	RP^2	Total RP	Unadjusted K_e	Market Cap	Size Adjustment	ECAPM Result
1	ALLETE	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.90	75%	5.5%	7.6%	11.1%	$3,400	0.91%	12.0%
2	Ameren Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.85	75%	5.2%	7.3%	10.8%	$25,000	0.44%	11.2%
3	Avista Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.90	75%	5.5%	7.6%	11.1%	$2,700	1.20%	12.3%
4	Black Hills Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.95	75%	5.8%	7.9%	11.4%	$4,200	0.91%	12.3%
5	CenterPoint Energy	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	1.10	75%	6.8%	8.8%	12.3%	$20,000	0.44%	12.8%
6	CMS Energy Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.80	75%	4.9%	7.0%	10.5%	$20,200	0.44%	10.9%
7	Dominion Energy	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.85	75%	5.2%	7.3%	10.8%	$58,300	-0.17%	10.6%
8	DTE Energy Co.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.95	75%	5.8%	7.9%	11.4%	$26,000	0.44%	11.8%
9	Duke Energy Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.85	75%	5.2%	7.3%	10.8%	$84,600	-0.17%	10.6%
10	Edison International	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.95	75%	5.8%	7.9%	11.4%	$22,100	0.44%	11.8%
11	Emera Inc.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.70	75%	4.3%	6.4%	9.9%	$16,200	0.57%	10.4%
12	Entergy Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.95	75%	5.8%	7.9%	11.4%	$24,300	0.44%	11.8%
13	Exelon Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	n/a	75%	n/a	n/a	n/a	$37,800	-0.17%	n/a
14	Hawaiian Elec.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.85	75%	5.2%	7.3%	10.8%	$3,700	0.91%	11.7%
15	IDACORP, Inc.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.80	75%	4.9%	7.0%	10.5%	$4,900	0.91%	11.4%
16	NorthWestern Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.90	75%	5.5%	7.6%	11.1%	$2,800	1.20%	12.3%
17	OGE Energy Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	1.00	75%	6.2%	8.2%	11.7%	$8,300	0.57%	12.3%
18	Otter Tail Corp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.85	75%	5.2%	7.3%	10.8%	$3,200	1.20%	12.0%
19	Pinnacle West Capital	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.90	75%	5.5%	7.6%	11.1%	$6,900	0.56%	11.6%
20	Pub Sv Enterprise Grp.	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.90	75%	5.5%	7.6%	11.1%	$28,000	0.44%	11.5%
21	Sempra Energy	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.95	75%	5.8%	7.9%	11.4%	$46,400	-0.17%	11.2%
22	Southern Company	2.0%	9.7%	11.7%	3.5%	8.2%	25%	2.1%	0.90	75%	5.5%	7.6%	11.1%	$71,300	-0.17%	10.9%
	Average												**11.1%**			**11.6%**

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (retrieved Dec. 7, 2022)..
(b) Average of weighted average earnings growth rates from IBES, Value Line, and Zacks for dividend-paying stocks in the S&P 500 based on data from Refinitiv, as provided by fidelity.com (retrieved Dec. 7, 2022), www.valueline.com (retrieved Dec. 7, 2022)., and www.zacks.com (retrieved Dec. 7, 2022). Eliminated growth rates that were greater than 20%, as well as all negative values.
(c) Average yield on 30-year Treasury bonds for six-months ending Nov. 2022 based on data from Moody's Investors Service.
(d) Roger A. Morin, *New Regulatory Finance* , Pub. Util. Reports, Inc. (2006) at 190.
(e) The Value Line Investment Survey, Summary & Index (Nov. 11, 2022).
(f) The Value Line Investment Survey (Sep. 9, Oct. 21 and Nov. 11, 2022).
(g) Kroll, 2022 Supplementary CRSP Decile Size Study Data Exhibits.

COST OF EQUITY ESTIMATE

Current Equity Risk Premium	
(a) Avg. Yield over Study Period	7.89%
(b) Average Utility Bond Yield	5.26%
Change in Bond Yield	-2.63%
(c) Risk Premium/Interest Rate Relationship	-0.4303
Adjustment to Average Risk Premium	1.13%
(a) Average Risk Premium over Study Period	3.87%
Adjusted Risk Premium	**5.00%**

Implied Cost of Equity	
(b) Baa Utility Bond Yield	5.55%
Adjusted Equity Risk Premium	5.00%
Risk Premium Cost of Equity	**10.55%**

(a) Schedule 10, page 2.
(b) Average bond yield on all utility bonds and 'Baa' subset for six-months ending Nov. 2022 based on data from Moody's Investors Service at www.credittrends.com.
(c) Schedule 10, page 3.

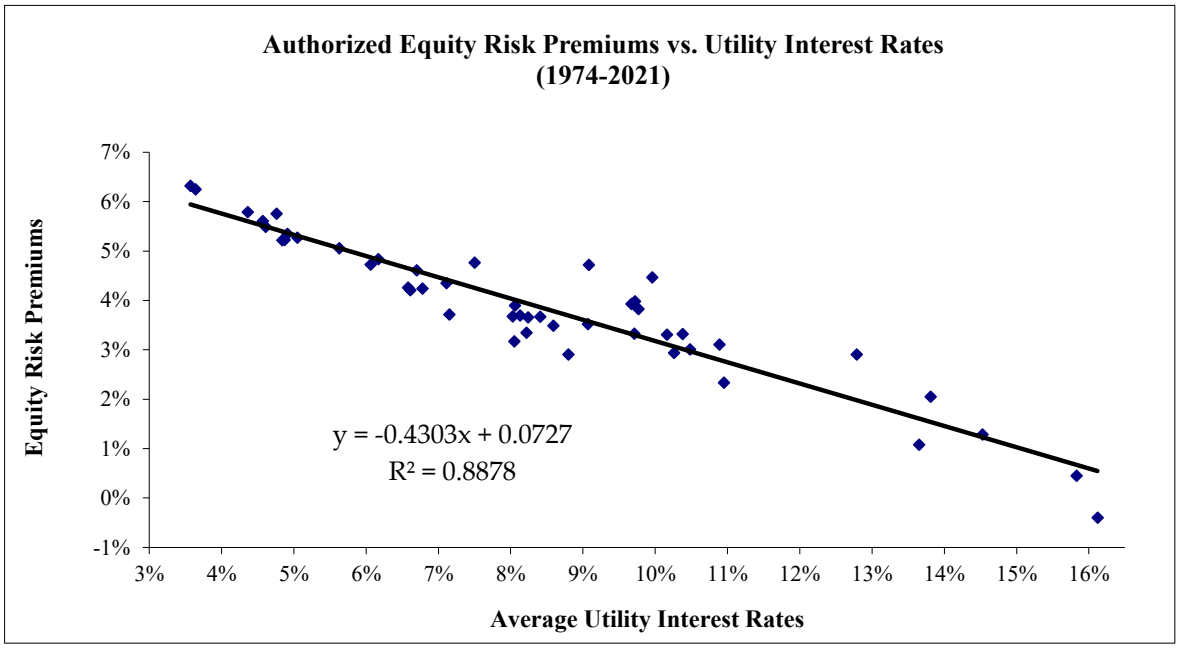
AUTHORIZED RETURNS

Year	(a) Allowed ROE	(b) Average Utility Bond Yield	Risk Premium
1974	13.10%	9.27%	3.83%
1975	13.20%	9.88%	3.32%
1976	13.10%	9.17%	3.93%
1977	13.30%	8.58%	4.72%
1978	13.20%	9.22%	3.98%
1979	13.50%	10.39%	3.11%
1980	14.23%	13.15%	1.08%
1981	15.22%	15.62%	-0.40%
1982	15.78%	15.33%	0.45%
1983	15.36%	13.31%	2.05%
1984	15.32%	14.03%	1.29%
1985	15.20%	12.29%	2.91%
1986	13.93%	9.46%	4.47%
1987	12.99%	9.98%	3.01%
1988	12.79%	10.45%	2.34%
1989	12.97%	9.66%	3.31%
1990	12.70%	9.76%	2.94%
1991	12.54%	9.21%	3.33%
1992	12.09%	8.57%	3.52%
1993	11.46%	7.56%	3.90%
1994	11.21%	8.30%	2.91%
1995	11.58%	7.91%	3.67%
1996	11.40%	7.74%	3.66%
1997	11.33%	7.63%	3.70%
1998	11.77%	7.00%	4.77%
1999	10.72%	7.55%	3.17%
2000	11.58%	8.09%	3.49%
2001	11.07%	7.72%	3.35%
2002	11.21%	7.53%	3.68%
2003	10.96%	6.61%	4.35%
2004	10.81%	6.20%	4.61%
2005	10.51%	5.67%	4.84%
2006	10.34%	6.08%	4.26%
2007	10.32%	6.11%	4.21%
2008	10.37%	6.65%	3.72%
2009	10.52%	6.28%	4.24%
2010	10.29%	5.56%	4.73%
2011	10.19%	5.13%	5.06%
2012	10.02%	4.26%	5.76%
2013	9.82%	4.55%	5.27%
2014	9.76%	4.41%	5.35%
2015	9.60%	4.37%	5.23%
2016	9.60%	4.11%	5.49%
2017	9.68%	4.07%	5.61%
2018	9.56%	4.34%	5.22%
2019	9.65%	3.86%	5.79%
2020	9.39%	3.07%	6.32%
2021	9.39%	3.14%	6.25%
Average	**11.76%**	**7.89%**	**3.87%**

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

(b) Moody's Investors Service.

REGRESSION RESULTS



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.942226
R Square	0.887791
Adjusted R Square	0.885351
Standard Error	0.004807
Observations	48

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.008411	0.008411	363.948371	0.000000
Residual	46	0.001063	0.000023		
Total	47	0.009474			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.072668	0.001911	38.034901	0.000000	0.068822	0.076514	0.068822	0.076514
X Variable 1	-0.430291	0.022555	-19.077431	0.000000	-0.475692	-0.384890	-0.475692	-0.384890

EXPECTED EARNINGS APPROACH

UTILITY GROUP

		(a)	(b)	(c)
	Company	**Expected Return on Common Equity**	**Adjustment Factor**	**Adjusted Return on Common Equity**
1	ALLETE	9.0%	1.0313	9.3%
2	Ameren Corp.	10.0%	1.0389	10.4%
3	Avista Corp.	8.0%	1.0296	8.2%
4	Black Hills Corp.	9.0%	1.0294	9.3%
5	CenterPoint Energy	10.0%	1.0280	10.3%
6	CMS Energy Corp.	13.0%	1.0322	13.4%
7	Dominion Energy	13.0%	1.0359	13.5%
8	DTE Energy Co.	12.5%	1.0365	13.0%
9	Duke Energy Corp.	9.0%	1.0133	9.1%
10	Edison International	13.0%	1.0329	13.4%
11	Emera Inc.	10.0%	1.0152	10.2%
12	Entergy Corp.	11.5%	1.0308	11.9%
13	Exelon Corp.	10.0%	0.9820	9.8%
14	Hawaiian Elec.	9.0%	1.0192	9.2%
15	IDACORP, Inc.	9.0%	1.0223	9.2%
16	NorthWestern Corp.	8.0%	1.0277	8.2%
17	OGE Energy Corp.	13.0%	1.0249	13.3%
18	Otter Tail Corp.	11.5%	1.0383	11.9%
19	Pinnacle West Capital	9.0%	1.0154	9.1%
20	Pub Sv Enterprise Grp.	13.0%	1.0150	13.2%
21	Sempra Energy	11.0%	1.0213	11.2%
22	Southern Company	14.5%	1.0216	14.8%
	Average	**10.7%**		**11.0%**

(a) The Value Line Investment Survey (Sep. 9, Oct. 21 and Nov. 11, 2022).
(b) Adjustment to convert year-end return to an average rate of return from Schedule 7.
(c) (a) x (b).

FLOTATION COST ADJUSTMENT **Schedule 12**
Page 1 of 1

AVISTA CORP. EQUITY ISSUANCES

	Amount of Common Stock Issued	Expenses	Expenses as % of Gross Proceeds
2010 Beginning Balance	$759,124,250	$13,859,828	1.826%
Dividend Reinvestment Plan			
2022	$140,775,461	$1,847,393	1.312%
2021	$91,323,501	$1,325,573	1.452%
2020	$73,189,230	$1,041,036	1.422%
2019	$65,627,509	$1,055,064	1.608%
2018	$1,227,846	$21,112	1.719%
2017	$57,065,164	$684,740	1.200%
2016	$67,974,613	$1,029,592	1.515%
2015	$1,669,374	$27,449	1.644%
2014	$113,591,642	-$103,787	-0.091%
2013	$6,026,604	$14,798	0.246%
2012	$30,902,292	$602,816	1.951%
2011	$26,651,589	$300,124	1.126%
2010	$46,638,090	$26,505	0.057%
	$1,481,787,164	$21,732,243	1.467%

Flotation Cost Adjustment based on Avista data

Avista Dividend Yield (Exhibit AMM-6, page 1)	4.6%
Avista Issuance Expense Factor	1.467%
Flotation Cost Adjustment (basis points)	**7**

DIVIDEND YIELD

	Company	Industry Group	(a) Price	(b) Dividends	Yield
1	Abbott Labs.	Med Supp Non-Invasive	$100.08	$ 1.88	1.9%
2	Amdocs Ltd.	IT Services	$82.20	$ 1.58	1.9%
3	Archer Daniels Midl'd	Food Processing	$90.48	$ 1.60	1.8%
4	Baxter Int'l Inc.	Med Supp Invasive	$54.77	$ 1.16	2.1%
5	Becton, Dickinson	Med Supp Invasive	$226.90	$ 3.64	1.6%
6	Church & Dwight	Household Products	$73.29	$ 1.05	1.4%
7	Cisco Systems	Telecom. Equipment	$42.85	$ 1.53	3.6%
8	Colgate-Palmolive	Household Products	$72.08	$ 1.88	2.6%
9	Costco Wholesale	Retail Store	$484.48	$ 3.60	0.7%
10	Gen'l Mills	Food Processing	$78.38	$ 2.16	2.8%
11	Hershey Co.	Food Processing	$228.50	$ 4.21	1.8%
12	Home Depot	Retail Building Supply	$287.48	$ 8.20	2.9%
13	Hormel Foods	Food Processing	$46.01	$ 1.04	2.3%
14	Hunt (J.B.)	Trucking	$168.50	$ 1.65	1.0%
15	Intel Corp.	Semiconductor	$27.20	$ 1.46	5.4%
16	Johnson & Johnson	Med Supp Non-Invasive	$168.21	$ 4.52	2.7%
17	Kimberly-Clark	Household Products	$118.15	$ 4.64	3.9%
18	Marsh & McLennan	Financial Svcs. (Div.)	$157.75	$ 2.42	1.5%
19	McCormick & Co.	Food Processing	$76.32	$ 1.51	2.0%
20	McDonald's Corp.	Restaurant	$256.04	$ 6.08	2.4%
21	McKesson Corp.	Med Supp Non-Invasive	$369.86	$ 2.16	0.6%
22	Mondelez Int'l	Food Processing	$59.54	$ 1.54	2.6%
23	Procter & Gamble	Household Products	$130.77	$ 3.65	2.8%
24	Progressive Corp.	Insurance (Prop/Cas.)	$124.05	$ 0.40	0.3%
25	Public Storage	R.E.I.T.	$291.83	$ 8.15	2.8%
26	Republic Services	Environmental	$132.84	$ 1.98	1.5%
27	Sherwin-Williams	Retail Building Supply	$215.88	$ 2.55	1.2%
28	Smucker (J.M.)	Food Processing	$144.52	$ 4.08	2.8%
29	Texas Instruments	Semiconductor	$160.19	$ 4.96	3.1%
30	Thermo Fisher Sci.	Precision Instrument	$509.61	$ 1.20	0.2%
31	Travelers Cos.	Insurance (Prop/Cas.)	$172.51	$ 3.72	2.2%
32	Verizon Communic.	Telecom. Services	$37.21	$ 2.61	7.0%
33	Walmart Inc.	Retail Store	$136.86	$ 2.24	1.6%
34	Waste Management	Environmental	$159.13	$ 2.60	1.6%
	Average				**2.3%**

(a) Average of closing prices for 30 trading days ended Nov. 11, 2022.
(b) The Value Line Investment Survey, *Summary & Index* (Nov. 11, 2022).

GROWTH RATES

		(a)	(b)	(c)
		Earnings Growth		
	Company	**V Line**	**IBES**	**Zacks**
1	Abbott Labs.	7.00%	8.30%	5.09%
2	Amdocs Ltd.	8.00%	12.97%	11.50%
3	Archer Daniels Midl'd	13.00%	8.90%	7.24%
4	Baxter Int'l Inc.	8.00%	5.61%	6.99%
5	Becton, Dickinson	4.50%	4.80%	7.69%
6	Church & Dwight	6.00%	3.73%	6.74%
7	Cisco Systems	8.00%	6.69%	6.50%
8	Colgate-Palmolive	6.50%	2.13%	3.62%
9	Costco Wholesale	10.50%	11.31%	10.26%
10	Gen'l Mills	4.00%	5.43%	7.50%
11	Hershey Co.	9.00%	10.60%	7.67%
12	Home Depot	9.00%	15.70%	11.24%
13	Hormel Foods	6.50%	8.75%	7.29%
14	Hunt (J.B.)	11.50%	14.60%	15.00%
15	Intel Corp.	n/a	-20.92%	7.50%
16	Johnson & Johnson	8.00%	3.90%	5.02%
17	Kimberly-Clark	5.50%	5.60%	4.61%
18	Marsh & McLennan	11.00%	8.30%	8.31%
19	McCormick & Co.	5.00%	5.10%	5.33%
20	McDonald's Corp.	10.50%	6.67%	8.62%
21	McKesson Corp.	10.00%	10.48%	10.05%
22	Mondelez Int'l	9.50%	4.70%	6.77%
23	Procter & Gamble	6.50%	4.79%	5.99%
24	Progressive Corp.	6.50%	29.47%	18.90%
25	Public Storage	n/a	17.00%	7.47%
26	Republic Services	12.50%	10.55%	11.34%
27	Sherwin-Williams	11.50%	11.46%	12.81%
28	Smucker (J.M.)	4.00%	5.14%	2.77%
29	Texas Instruments	9.00%	10.00%	9.33%
30	Thermo Fisher Sci.	10.50%	4.49%	12.50%
31	Travelers Cos.	6.50%	5.85%	5.49%
32	Verizon Communic.	2.50%	2.19%	4.15%
33	Walmart Inc.	6.50%	6.00%	5.50%
34	Waste Management	7.50%	11.66%	12.55%

(a) The Value Line Investment Survey (various editions as of Nov. 11, 2022).

(b) www.finance.yahoo.com (retrieved Nov. 11, 2022).

(c) www.zacks.com (retrieved Nov. 11, 2022).

DCF COST OF EQUITY ESTIMATES

		(a)	(b)	(c)
		Earnings Growth		
	Company	**V Line**	**IBES**	**Zacks**
1	Abbott Labs.	8.9%	10.2%	7.0%
2	Amdocs Ltd.	9.9%	14.9%	13.4%
3	Archer Daniels Midl'd	14.8%	10.7%	9.0%
4	Baxter Int'l Inc.	10.1%	7.7%	9.1%
5	Becton, Dickinson	6.1%	6.4%	9.3%
6	Church & Dwight	7.4%	5.2%	8.2%
7	Cisco Systems	11.6%	10.3%	10.1%
8	Colgate-Palmolive	9.1%	4.7%	6.2%
9	Costco Wholesale	11.2%	12.1%	11.0%
10	Gen'l Mills	6.8%	8.2%	10.3%
11	Hershey Co.	10.8%	12.4%	9.5%
12	Home Depot	11.9%	18.6%	14.1%
13	Hormel Foods	8.8%	11.0%	9.6%
14	Hunt (J.B.)	12.5%	15.6%	16.0%
15	Intel Corp.	n/a	-15.6%	12.9%
16	Johnson & Johnson	10.7%	6.6%	7.7%
17	Kimberly-Clark	9.4%	9.5%	8.5%
18	Marsh & McLennan	12.5%	9.8%	9.8%
19	McCormick & Co.	7.0%	7.1%	7.3%
20	McDonald's Corp.	12.9%	9.0%	11.0%
21	McKesson Corp.	10.6%	11.1%	10.6%
22	Mondelez Int'l	12.1%	7.3%	9.4%
23	Procter & Gamble	9.3%	7.6%	8.8%
24	Progressive Corp.	6.8%	29.8%	19.2%
25	Public Storage	n/a	19.8%	10.3%
26	Republic Services	14.0%	12.0%	12.8%
27	Sherwin-Williams	12.7%	12.6%	14.0%
28	Smucker (J.M.)	6.8%	8.0%	5.6%
29	Texas Instruments	12.1%	13.1%	12.4%
30	Thermo Fisher Sci.	10.7%	4.7%	12.7%
31	Travelers Cos.	8.7%	8.0%	7.6%
32	Verizon Communic.	9.5%	9.2%	11.2%
33	Walmart Inc.	8.1%	7.6%	7.1%
34	Waste Management	9.1%	13.3%	14.2%
	Average (b)	**10.7%**	**10.5%**	**10.5%**

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