

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF THE EMPIRE DISTRICT)
ELECTRIC COMPANY, A KANSAS)
CORPORATION, FOR AN ADJUSTMENT IN ITS)
RATES AND CHARGES FOR ELECTRIC SERVICE)
IN THE STATE OF OKLAHOMA)

CAUSE NO. PUD 202100163

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CORPORATION COMMISSION
OF OKLAHOMA

Direct Testimony

of

Daniel S. Dane

Submitted on behalf of

The Empire District Electric Company

February 28, 2022



Liberty™

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THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA
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LIST OF EXHIBITS IN SUPPORT OF DIRECT TESTIMONY

1.	DSD-1 Background and list of prior testimony
2.	DSD-2 – DSD-12 ROE Analysis and conclusions

DIRECT TESTIMONY OF DANIEL S. DANE
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA
CAUSE NO. PUD 202100163

1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Daniel S. Dane. My business address is 293 Boston Post Road West, Suite
4 500, Marlborough, Massachusetts 01752.

5 **Q. By whom are you employed and in what capacity?**

6 A. I am a Senior Vice President at Concentric Energy Advisors, Inc. (“Concentric”). I am
7 also the Financial and Operations Principal of CE Capital, Inc., a FINRA-member
8 subsidiary of Concentric.

9 **Q. On whose behalf are you testifying in this proceeding?**

10 A. I am testifying on behalf of The Empire District Electric Company (“Liberty-Empire” or
11 “Company”), a Liberty Utilities company, which is an indirect, wholly-owned subsidiary
12 of Algonquin Power & Utilities Corp. (“APUC”).

13 **Q. Please describe your educational and professional background.**

14 A. I have more than 20 years of experience in the energy, utility, and financial services
15 industries providing advisory services to power companies, natural gas pipelines, local gas
16 distribution companies, and water utilities in the areas of regulation and ratemaking,
17 litigation support, mergers and acquisitions, valuation, financial statement audits and
18 analysis, and the examination of financial reporting systems and controls. I have provided
19 expert testimony and developed expert reports on regulated ratemaking matters for
20 investor- and provincially-owned utilities, including on the cost of capital and capital

1 structure, revenue requirements, lead-lag studies/cash working capital, and utility
2 productivity and benchmarking. I have also provided expert testimony in utility merger
3 approval proceedings related to the financial and cost of capital implications of utility
4 transactions. I have an MBA from Boston College in Chestnut Hill, Massachusetts, and a
5 BA in Economics from Colgate University in Hamilton, New York. I am a certified public
6 accountant, and a licensed securities professional (Series 7, 28, 63, 79, and 99). My
7 background and list of prior testimony is presented in more detail in Direct Exhibit DSD-
8 1.

9 **Q. Please describe concentric.**

10 A. Concentric provides financial and economic advisory services to many and various energy
11 and utility clients across North America. Our regulatory, economic, and market analysis
12 services include utility ratemaking and regulatory advisory services; energy market
13 assessments; market entry and exit analysis; corporate and business unit strategy
14 development; demand forecasting; resource planning; and energy contract negotiations.
15 Our financial advisory activities include buy- and sell-side merger, acquisition, and
16 divestiture assignments; due diligence and valuation assignments; project and corporate
17 finance services; and transaction support services. In addition, we provide litigation
18 support services on a wide range of financial and economic issues on behalf of clients
19 throughout North America.

20 **Q. Please describe CE Capital Advisors, Inc.**

21 A. CE Capital Advisors, Inc. is a fully-licensed FINRA-member securities and financial
22 advisory firm providing services related to corporate mergers and acquisitions, investment

1 banking, the valuation of securities, and capital market advisory services to the energy
2 industry.

3 **Q. Have you previously testified in a proceeding before the Oklahoma Corporation**
4 **Commission (“Commission”) or before any other utility regulatory agency?**

5 A. I have not previously testified before the Commission. I have submitted testimony and
6 expert reports before regulatory commissions in Alaska, Connecticut, Maine,
7 Massachusetts, New Hampshire, New Mexico, Rhode Island, South Dakota, Texas,
8 Vermont, Nova Scotia, and Ontario.

9 **Q. What is the purpose of your Direct Testimony in this proceeding?**

10 A. The purpose of my Direct Testimony is to present evidence and provide a recommendation
11 regarding the Company’s return on equity (“ROE” or “cost of equity”), as well as the
12 Company’s proposed capital structure for ratemaking purposes. My analysis and
13 conclusions are supported by the data presented in Direct Exhibit DSD-2 through Direct
14 Exhibit DSD-12, which were prepared by me or under my direction in connection with my
15 Direct Testimony.

16 **Q. Please provide a brief overview of Liberty-Empire’s Oklahoma operations.**

17 A. Liberty-Empire is a wholly owned subsidiary of Liberty Utilities (Central) Co., which is in
18 turn owned by Liberty Utilities Co (“LUCo”), which is in turn an indirect, wholly-owned
19 subsidiary of APUC. Liberty-Empire provides electric generation, transmission, and
20 distribution services to approximately 177,000 retail customers in portions of Arkansas,

1 Kansas, Missouri, and Oklahoma.¹ Approximately 4,800 of those electric retail customers
2 are located in Oklahoma. Liberty-Empire’s current credit ratings on senior unsecured debt
3 are: (1) S&P BBB (Outlook: Negative); and (2) Moody’s Investor’s Service (“Moody’s”)
4 Baa1 (Outlook: Stable).²

5 **Q. Please summarize your principle conclusions regarding the appropriate cost of**
6 **capital for the company.**

7 A. Based on the analyses I performed and that are discussed herein, I find a reasonable range
8 for the ROE for Liberty-Empire to be from 9.50 percent to 10.40 percent. Within that
9 range, I recommend that the Commission authorize the Company the opportunity to earn
10 an ROE of 10.00 percent. As described in greater detail later in my testimony, that
11 recommendation is based on the use of several well-accepted methodologies for estimating
12 ROE and reflects market data from companies directly comparable to Liberty-Empire. My
13 recommendation also considers prevailing and expected economic conditions, and the
14 Company’s business risk profile. I also conclude that the Company’s proposed capital
15 structure of 52.79 percent common equity and 47.21 percent long-term debt is reasonable.
16 The proposed overall rate of return is summarized in Figure 1.

¹ Liberty-Empire District Electric, FERC Form 3-Q for the quarter ending March 31, 2021, page 301.

² Per S&P Capital IQ Pro. As of February 12, 2022.

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Figure 1: Capital Structure and Cost of Capital

	Percent	Cost Rate	Weighted Cost
Common Equity	52.79%	10.00%	5.28%
Long-term debt	47.21%	3.76%	1.78%
Total Capitalization	100.00%		7.06%

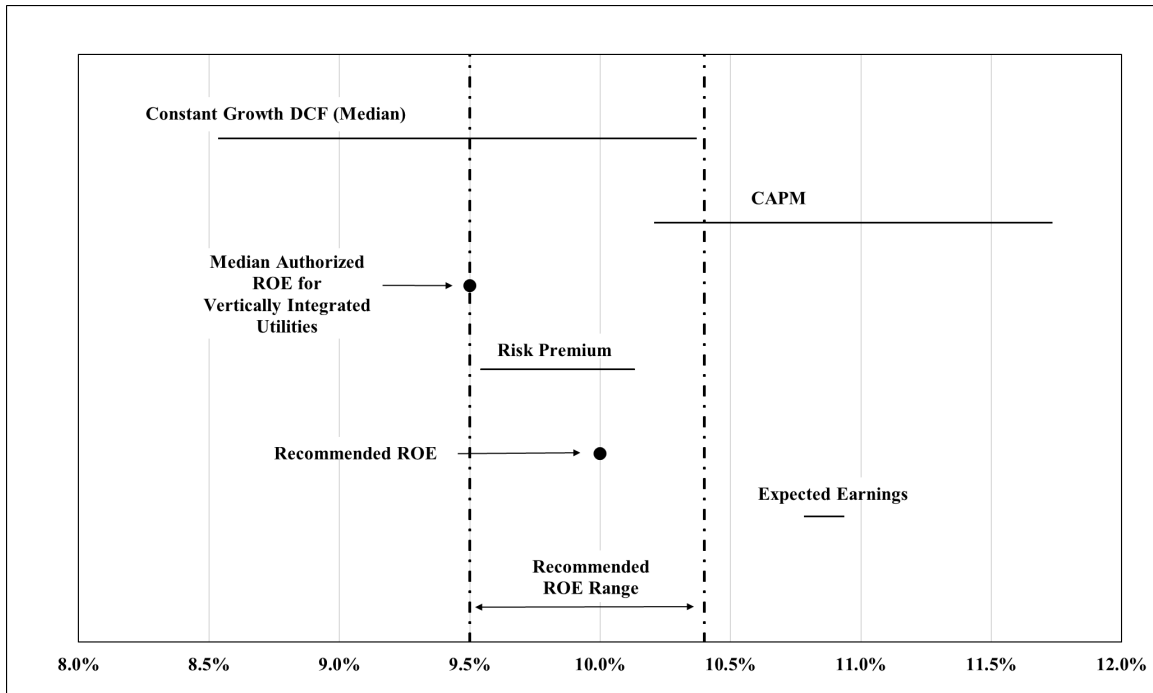
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3 **Q. Please provide a brief overview of the analyses that led to your conclusions.**

4 A. As described herein, I used multiple cost of capital estimation models in performing my
5 assessment of the appropriate ROE for the Company. Specifically, my recommendation
6 of the appropriate ROE for the Company is based primarily on the constant growth form
7 of the Discounted Cash Flow (“DCF”) approach, the Capital Asset Pricing Model
8 (“CAPM”), and the Bond Yield Plus Risk Premium approach. I further checked the
9 reasonableness of the results of those models with an Expected Earnings analysis for the
10 proxy group, as well as recent data regarding allowed ROEs for vertically-integrated
11 electric utilities in the U.S. Figure 2 summarizes the range of results produced by these
12 models, the median authorized ROE for vertically-integrated utilities, and my
13 recommended range and point estimate for Liberty-Empire’s ROE.

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Figure 2: Summary of Cost of Equity Analytical Results



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Figure 2 shows the wide range of results currently being produced by the various ROE models. This demonstrates the importance of considering multiple models when estimating the Company's cost of equity. While my recommended ROE range of 9.50 percent to 10.40 percent aligns with the middle-to-high end of the DCF results, and overlaps with the Bond Yield Plus Risk Premium results, it also considers the range of results produced by the CAPM. As discussed above, I also considered these results within the context of expected earnings for comparable vertically-integrated electric utilities (which are somewhat above my recommended range of ROEs for the Company), as well as the median allowed ROE of 9.50 percent for vertically-integrated electric utilities from January 2021 through January 2022. This latter point, which aligns with the low end of my recommended range, is an important benchmark representing investors' return

1 expectations for U.S. vertically-integrated electric utilities. It provides a conservative
2 estimate of Liberty-Empire's cost of equity, however, due to additional factors that impact
3 the Company's ROE. Specifically, I considered current capital market conditions and
4 Company-specific business risks and other factors in making my recommendation,
5 although I did not make an explicit adjustment for those items. In particular, among other
6 factors I considered the impact of increasing interest rates on the DCF and risk premium
7 models, as well as the Company's capital investment plans, small size relative to the proxy
8 group, and regulatory environment. I also considered the costs of issuing common equity,
9 known as flotation costs. In order for Liberty-Empire to compete for capital on reasonable
10 terms, those additional risk factors should be reflected in the Company's authorized ROE.

11 **Q. How is the remainder of your testimony organized?**

12 A. In addition to this introduction, my Direct Testimony is organized into nine sections.
13 Section II discusses the regulatory guidelines and financial considerations pertinent to the
14 development of the cost of capital. Section III explains my selection of a proxy group of
15 electric utilities. Section IV explains my analysis and the analytical basis for my
16 recommendation of the appropriate ROE for the Company. Section V summarizes the
17 results of the cost of capital analyses I conducted. Section VI discusses current and
18 expected capital market conditions and their effect on the cost of capital. Section VII
19 provides a discussion of specific business risks and other factors that have a direct bearing
20 on the ROE to be authorized for the Company in this proceeding. Section VIII provides a
21 discussion of my evaluation of the Company's proposed capital structure and cost of debt.
22 Section IX summarizes my conclusions and recommendations.

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II. REGULATORY GUIDELINES

Q. Please describe the guiding principles to be used in establishing the ROE for a regulated utility.

A. The United States Supreme Court’s *Hope* and *Bluefield* cases established the standards for determining the fairness or reasonableness of a utility’s allowed ROE. In those cases, the Court established standards that: (1) authorized returns be consistent with other businesses having similar or comparable risks; (2) the return be adequate to support credit quality and access to capital; and (3) the means of arriving at a fair return are not of paramount importance, only that the end result leads to just and reasonable rates.³

Based on the standards established in *Hope* and *Bluefield*, the authorized ROE in this proceeding should provide the Company with the opportunity to earn a fair and reasonable return that is:

- Adequate to allow the Company to attract the capital that is necessary to provide safe and reliable service (the “capital attraction” standard);
- Sufficient to ensure the Company’s ability to maintain its financial integrity (the “financial integrity” standard); and
- At a level that is comparable to returns required on investments of similar risk (the “comparability” standard).

³ Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia, 262 U.S. 679 (1923); Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).

1 **Q. Has the Commission provided similar guidance in establishing the appropriate return**
2 **on common equity?**

3 A. Yes, it has. For example, in Cause No. PUD 201700151, Order No. 672864, the
4 Commission agreed with the Administrative Law Judge that:

5 The resulting return on equity must offer the public utility the opportunity
6 to earn a fair return on its investment, allowing a return similar to returns
7 on other similarly risky investments, providing confidence in the financial
8 integrity of the company, and allowing the company to attract capital. *See*
9 *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603(1944).⁴

10 **Q. Why is it important for a utility to be allowed the opportunity to earn a return**
11 **adequate to attract equity capital at reasonable terms?**

12 A. The allowed ROE should be sufficient to enable the Company to finance capital
13 expenditures and working capital requirements at reasonable rates and maintain financial
14 integrity during a variety of economic and capital market conditions. A return that is
15 adequate to attract capital at reasonable terms enables the subject company to provide safe,
16 reliable service while maintaining its financial integrity. While the “capital attraction” and
17 “financial integrity” standards are important principles in normal economic conditions, the
18 practical implications of those standards are even more pronounced given, as discussed in
19 more detail below, the Company’s small size and substantial capital investments and when
20 considered in the context of recent and expected capital market conditions.

⁴ *Application of Public Service Company of Oklahoma, an Oklahoma Corporation, for an Adjustment in its Rates and Charges and the Electric Service Rules, Regulations and Conditions of Service for Electric Service in the State of Oklahoma*, Cause No. PUD 201700151, Order, at 3 and Attachment 1 Para. 65 (January 31, 2018).

1 In addition, the rates set in this case, including the ROE and capital structure, will
2 directly affect the Company's cash flows during the period in which rates are in effect. The
3 ability to generate internally the cash flows required to meet financial obligations (and to
4 provide an additional amount for unexpected events) is of critical importance to debt
5 investors; thus, cash flows have a bearing on credit quality, which in turn affects the terms
6 at which a company can raise capital.

7 Lastly, the deemed supportiveness of the regulatory environment within which a
8 utility operates is a key consideration for ratings agencies such as S&P and Moody's, as I
9 describe in more detail herein.

10 **Q. What are your conclusions regarding regulatory guidelines and capital market**
11 **expectations?**

12 A. The Company's ability to fund capital investments will be dependent on its ability to access
13 external capital on reasonable terms. Further, the authorized ROE established in this
14 proceeding should provide Liberty-Empire an opportunity to earn a fair and reasonable
15 return and should enable sufficient access to capital under a variety of market conditions.
16 Consequently, it is important for the ROE authorized in this proceeding to take into
17 consideration not only returns required on investments of comparable risk, but also the
18 Company's substantial capital investment plans, the economic environment in which it
19 operates, and investors' expectations relative to both risks and returns.

1 **Q. How does the fact that the Company is a subsidiary of APUC, a publicly-traded**
2 **company, affect your analysis?**

3 A. In this proceeding, consistent with the stand-alone principle of ratemaking, it is appropriate
4 to establish the authorized ROE for Liberty-Empire, not its publicly-traded parent APUC.
5 Further, it is appropriate to establish a return on equity and capital structure that provide
6 Liberty-Empire the ability to attract capital on reasonable terms both on a stand-alone basis
7 and within the APUC corporate structure.

8 **III. PROXY GROUP SELECTION**

9 **Q. Please explain why you have used a group of proxy companies to determine the cost**
10 **of equity for Liberty-Empire.**

11 A. Consistent with the *Hope* and *Bluefield* decisions, the authorized ROE for a public utility
12 should be commensurate with the equity return required on investments of similar risk.
13 Investments in enterprises of similar risk thus represent opportunity costs with a direct
14 bearing on the ROE of the subject utility.

15 In addition, in this proceeding I am estimating the cost of equity for Liberty-Empire,
16 a rate-regulated, wholly-owned subsidiary of APUC. Since the ROE is a market-based
17 concept, and given that the Company is not publicly traded, it is necessary to establish a
18 group of companies that are both publicly traded and comparable to the Company in certain
19 fundamental business and financial respects to serve as its “proxy” in the ROE estimation
20 process.

1 **Q. How did you select the companies included in your proxy group?**

2 A. I began with the companies that Value Line classifies as “Electric Utilities,” which
3 comprise a group of 36 domestic U.S. utilities. I then simultaneously applied the following
4 screening criteria to select a proxy group of companies that:

- 5 • Pay consistent quarterly cash dividends;
- 6 • Have positive earnings growth forecasts from at least two sources that are
7 commonly relied on by investors;
- 8 • Have investment grade senior bond and/or corporate ratings from S&P and/or
9 Moody’s (*i.e.*, BBB- to AAA and Baa3 to Aaa, respectively);
- 10 • Own regulated generation assets;
- 11 • Derive more than 60 percent of total operating income from regulated utility
12 operations;
- 13 • Derive more than 80 percent of regulated operating income from electric utility
14 operations; and
- 15 • Are not engaged in mergers or other transformative transactions during the
16 analytical period (180 days).

17 **Q. Did you include APUC in your analysis?**

18 A. No. In order to avoid the circular logic that otherwise would occur, I excluded APUC from
19 the proxy group.

20 **Q. How many companies met your screening criteria?**

21 A. The criteria discussed above resulted in a group of the following 17 companies:

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Figure 3: Screening Results

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Duke Energy Corporation	DUK
Edison International	EIX
Entergy Corporation	ETR
Evergy, Inc.	EVRG
Hawaiian Electric Industries, Inc.	HE
IDACORP, Inc.	IDA
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
Otter Tail Corporation	OTTR
Pinnacle West Capital Corporation	PNW
Portland General Electric Company	POR
Southern Company	SO
Xcel Energy Inc.	XEL

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3 **IV. COST OF EQUITY ESTIMATION**

4 **Q. How is the required ROE determined?**

5 A. The cost of equity is not directly observable, and, therefore, must be inferred by using one
6 or more analytical techniques that rely on market-based data to quantify investor
7 expectations regarding required equity returns, adjusted for certain incremental costs and
8 risks. Informed judgment is applied, based on the results of those analyses, to determine
9 where within the range of results the cost of equity for the Company falls. The resulting
10 adjusted cost of equity serves as the recommended ROE for ratemaking purposes. As a

1 general proposition, the key consideration in determining the cost of equity is to ensure
2 that the methodologies employed reasonably reflect investors' view of the financial
3 markets as well as investments in the subject company's common equity.

4 **Q. What methods did you use to determine the company's ROE?**

5 A. I considered the results of the Constant Growth DCF model, and two forms of risk premium
6 models (i.e., the CAPM and the Bond Yield Plus Risk Premium approach). I also
7 performed a comparative earnings analysis and a review of recently-authorized ROEs for
8 other vertically integrated electric utilities as reasonableness checks of the DCF and risk
9 premium results. As mentioned previously, it is appropriate to consider multiple
10 methodologies for estimating a reasonable ROE, and the reasonableness of the results
11 individually and collectively.

12 **A. CONSTANT GROWTH DCF MODEL**

13 **Q. Are DCF models widely used to determine the ROE for regulated utilities?**

14 A. Yes. Regulated utilities tend to be established, dividend paying companies. DCF models,
15 which incorporate expected dividends in the determination of ROEs, are widely used in
16 regulatory proceedings and have sound theoretical bases. Neither the DCF model nor any
17 other model, however, can be applied without considerable judgment in the selection of
18 data and the interpretation of results.

19 **Q. Please describe the constant growth DCF approach.**

20 A. In its simplest form, the DCF model expresses the cost of equity as the sum of the expected
21 dividend yield and long-term growth rate. The DCF approach is based on the theory that
22 a stock's current price represents the present value of all expected future cash flows, which,

1 for purposes of the model, are assumed to be equal to all expected future dividends. Thus,
2 the return required by investors is implied by the per share price of a company's common
3 stock. In its most general form, the DCF model is expressed as follows:

$$4 \quad P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

5 Where P_0 represents the current stock price, $D_1 \dots D_\infty$ are all expected future dividends,
6 and k is the discount rate, or required ROE. Equation [1] is a standard present value
7 calculation, which can be simplified and rearranged into the following formula:

$$8 \quad k = \frac{D(1+g)}{P_0} + g \quad [2]$$

9 Equation [2] is often referred to as the "Constant Growth DCF" model in which the first
10 term is the expected dividend yield, and the second term is the expected long-term growth
11 rate.

12 **Q. What assumptions are required for the constant growth DCF model?**

13 A. The Constant Growth DCF model requires the following assumptions: (1) a constant
14 growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant
15 price-to-earnings multiple; and (4) a discount rate that is greater than the expected growth
16 rate. To the extent that any of these assumptions do not hold true, considered judgment
17 and/or specific adjustments should be applied to the results.

18 **Q. What market data did you use to calculate the dividend yield in your DCF model?**

19 A. I used readily available market data to calculate the dividend yield component of the DCF
20 model. Specifically, the dividend yield is based on the proxy companies' current

1 annualized dividend, and average closing stock prices over the 30-, 90-, and 180-trading
2 days ended January 31, 2022.

3 **Q. What comment do you have regarding recent dividend yields for regulated utilities**
4 **and their impact on the results of the DCF model?**

5 A. As discussed in Section VI, utility dividend yields have been suppressed due in part to the
6 current low interest environment. The U.S. economy has entered, however, a period of
7 rising interest rates, in which utility shares are expected to underperform. A decrease in
8 the stock price (P_0 in the above equation), leads to an increase in the dividend yield, all else
9 equal. As such, current dividend yields based on historical share price data likely
10 understate the cost of equity.

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

13 A. Yes, I did. Since current dividend data reflects the last dividend paid (i.e., D_0) by each
14 proxy company, the dividend must be adjusted to reflect the next dividend expected by
15 investors (i.e., D_1). Since utility companies tend to increase their quarterly dividends at
16 different times throughout the year, it is reasonable to assume that dividend increases will
17 be evenly distributed over calendar quarters. Given that assumption, I applied one-half of
18 the expected annual dividend growth for the purposes of calculating the expected dividend
19 yield component of the DCF model, as shown in Direct Exhibit DSD-4. This adjustment
20 ensures that the expected dividend yield is, on average, representative of the coming
21 twelve-month period and does not overstate the aggregate dividends to be paid during that
22 time.

1 **Q. What growth rate assumption did you use in the DCF analysis?**

2 A. As implied by its name, the Constant Growth DCF model uses a single constant growth
3 rate for earnings and dividends, and assumes that rate in perpetuity. The growth rate in the
4 DCF model reflect investors' expectations of future growth. Therefore, I used investment
5 analysts' expected earnings growth rates for each proxy group company. Since the cost of
6 equity is a forward-looking concept, and since the DCF model is based on the premise that
7 today's stock price is based on expected cash flows, it is important to use forecasted, as
8 opposed to historical, estimates of proxy company growth. I used investment analysts'
9 expected earnings growth rates primarily because: (1) they are widely relied upon by
10 investors and available from multiple sources; (2) over the long run, dividend growth can
11 only be sustained by earnings growth; and (3) significant academic research supporting the
12 use of analysts' forecasts as the source of DCF growth rates.⁵

13 **Q. Please summarize your application of the constant growth DCF model.**

14 A. I applied the DCF model to the proxy group of 17 vertically-integrated utility companies,
15 using the following inputs for the price and dividend terms:

- 16 1. The average daily closing prices for the 30-trading days, 90-trading days, and 180-
17 trading days ended January 31, 2022, for the term P_0 ; and
18 2. The annualized dividend per share as of January 31, 2022, for the term D_0 .

19 I then calculated the DCF results using each of the following growth terms:

- 20 1. Zacks Investment Research consensus long-term earnings growth estimates;

⁵ See, Morin, Roger, *New Regulatory Finance*, Public Utility Reports, Inc. (1986), at 299-302, for a summary of empirical research on this topic.

1 2. Thomson First Call consensus long-term earnings growth estimates; and

2 3. Value Line earnings per share growth estimates.

3 **Q. How did you calculate the range of constant growth DCF results?**

4 A. I used the mean of all three growth rates in combination with the dividend yield to
5 determine the mean DCF result. I calculated the mean high DCF result for each proxy
6 company using the maximum growth rate (i.e., the maximum of the Value Line, Zack's,
7 and First Call EPS growth rates) in combination with the dividend yield for each of the
8 proxy group companies. Thus, the mean high result reflects the average maximum DCF
9 result for the proxy group. I used a similar approach to calculate the mean low results,
10 using the minimum growth rate for each proxy group company.

11 **Q. What are the results of your constant growth DCF analysis?**

12 A. Figure 4 (below) provides the results of my Constant Growth DCF analysis. As shown in
13 Figure 4, the median DCF results range from 9.24 percent to 9.49 percent, and the median
14 high results range from 10.21 percent to 10.43 percent. The results of the Constant Growth
15 DCF analysis are also presented in Direct Exhibit DSD- 4.

16 **Figure 4: Median Constant Growth DCF Results**

	Median Low	Median	Median High
30-Day Average	8.43%	9.24%	10.21%
90-Day Average	8.54%	9.32%	10.37%
180-Day Average	8.52%	9.49%	10.43%

1 **Q. Why did you reflect the median, rather than the mean results in the figure above?**

2 A. Both the mean and median provide measures of central tendency. The mean, however, is
3 subject to being “unduly influenced by extreme observations.”⁶ The median, or middle
4 point of a set of observations at which half of the set of observations are above it and half
5 are below it, is not subject to the same distortion due to extreme observations.⁷ In my
6 review of the results of the Constant Growth DCF analysis, it became apparent that certain
7 proxy company results were potentially distorting the mean results downwards.⁸ As such,
8 I report the median results in the figure above to mitigate that distortion.

9 **Q. What do you conclude regarding the results of the DCF models?**

10 A. As noted above, utility dividend yields have been suppressed due in part to the low interest
11 environment, and the U.S. economy has entered a period of rising interest rates, in which
12 utility shares are expected to underperform. As such, there is a significant risk that DCF
13 models are currently understating the cost of equity for Liberty-Empire. Therefore, while
14 I reflect the results of the DCF model in my overall analysis, I have given more weight to
15 the median and median-high outputs of that model, and have also considered and given
16 weight to the results of other ROE estimation models, as discussed below.

17

⁶ Keller and Warrack, *Statistics for Management and Economics*, 5e ed., Duxbury Thompson Learning, 2000, at 92.

⁷ *Id.*, at 93.

⁸ The average is particular impacted by certain company-specific results (e.g., the low DCF results for Entergy Corp., Hawaiian Electric Industries Inc., and Pinnacle West Capital Corporation) that are approximately at or below 5.00 percent and thus represent an unreasonably low equity risk premium over the cost of debt. An alternative approach would be to remove those unreasonably low results, but I have instead left them in the analysis and focused on the median results.

1 **B. CAPM ANALYSIS**

2 **Q. Please briefly describe the capital asset pricing model.**

3 A. The CAPM is an analytical approach that captures the relationship between risk and return,
4 reflecting the fact that investors require a higher return for taking on additional risk.
5 Specifically, the CAPM is a risk premium model that is based on a required return that
6 compensates the investor for the time value of money (indicated by a risk-free rate of
7 return) as well as a premium for bearing systematic, non-diversifiable risk. Systematic risk
8 is the risk inherent in the entire market or market segment that cannot be diversified away
9 by investing in a portfolio of assets. Non-systematic risk is the risk of a specific company
10 that can, theoretically, be mitigated with an appropriately diversified portfolio.

11 The CAPM requires four inputs, each of which must theoretically be a forward-
12 looking estimate:

13
$$K_e = r_f + \beta(r_m - r_f) [3]$$

14 Where:

15 K_e = the current required market ROE;

16 β = Beta coefficient of an individual security;

17 r_f = the risk-free rate of return; and

18 r_m = the required return on the market.

19 In this specification, the term $(r_m - r_f)$ represents the Market Risk Premium (“MRP”).
20 According to the theory underlying the CAPM, since unsystematic risk can be diversified
21 away, investors should only be concerned with non-diversifiable risk. Systematic risk is

1 measured by the Beta coefficient, a measure of the volatility of a security as compared to
2 the market as a whole. The Beta coefficient is defined as:

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

3 The variance of the market return (i.e., Variance (r_m)) is a measure of the
4 uncertainty of the general market. The covariance between the return on a specific security
5 and the general market (i.e., Covariance (r_e, r_m)) reflects the extent to which the return on
6 that security will respond to a given change in the general market return. Thus, the Beta
7 coefficient represents the risk of the security relative to the general market. A Beta
8 coefficient of 1.0 indicates a security whose returns generally move in the same direction
9 as the overall market and by the same percentage in movement. Positive Beta coefficients
10 of less than or greater than 1.0 also tend to move in the same direction as the overall market,
11 but to a lesser (for securities with Beta coefficients of less than 1.0) or greater (for securities
12 with Beta coefficients of more than 1.0) extent. Utility companies have historically tended
13 to have Beta coefficients of less than 1.0, indicating less riskiness with regard to market
14 risk. This lower level of market risk contributes to utility investments traditionally being
15 considered a “defensive” sector for investors. As I discuss in Section VI, however, utility
16 Beta coefficients have increased significantly in the past year, indicating greater perceived
17 risk for this sector relative to the overall market.

18 **Q. What risk-free rate is reflected in your CAPM analysis?**

19 A. As shown in Direct Exhibit DSD-5, I considered three estimates of the expected risk-free
20 rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds (i.e., 2.03

1 percent);⁹ (2) the projected 30-year U.S. Treasury bond yield for Q2 2022 through Q2 2023
2 (i.e., 2.58 percent);¹⁰ and (3) the projected 30-year U.S. Treasury bond yield for 2023
3 through 2027 (i.e., 3.40 percent).¹¹

4 **Q. What Beta coefficients are reflected in your CAPM analysis?**

5 A. I reflected the proxy companies' Beta coefficients in my CAPM analysis, as reported by
6 Value Line and Bloomberg. The Beta coefficients reported by Value Line are based on
7 five years of weekly returns relative to the New York Stock Exchange ("NYSE")
8 Composite Index, and those reported by Bloomberg reflect ten years of weekly returns
9 relative to the S&P 500 Index. The Beta coefficients are shown on Direct Exhibit DSD-5.

10 **Q. How did you estimate the MRP in the CAPM?**

11 A. As shown in equation [3], above, the MRP is equal to the required return on the market
12 (r_m) less the expected risk-free rate of return (r_f). The risk-free rate of return component is
13 discussed above. For the required return on the market, I first began with an analysis of
14 the overall expected market return, and then considered adjustments and alternatives to that
15 measure.

16 **Q. Please describe your estimation of the expected market return.**

17 A. Like the ROE, the expected market return is not directly observable, and so it must be
18 estimated or inferred by analyzing market data. I began my analysis of the expected market
19 return by determining the expected total return on the S&P 500 Index. That determination

⁹ Bloomberg Professional, as of January 31, 2022.

¹⁰ Blue Chip Financial Forecasts, Vol. 41, No. 2, February 2, 2022, at 2.

¹¹ Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021, at 14.

1 can be performed in a similar manner to the determination of the proxy group ROE by
2 applying the Constant Growth DCF model, but instead of applying it to only a proxy group
3 of comparable companies, applying it to all companies in the S&P 500 Index. This
4 approach resulted in an estimated expected market return of 15.16%. As discussed below,
5 while the estimated expected market return of 15.16% is consistent with (and even
6 conservative when compared to) certain benchmarks of expected market returns published
7 by reputable and relied-on industry participants such as Bloomberg Professional, State
8 Street, and S&P, the CAPM results from that estimation currently exceed other benchmarks
9 of the Company's ROE, including the DCF, Risk Premium, Expected Earnings, and
10 industry authorized ROEs. While that is not a reason in-and-of-itself to discard the results,
11 I further considered certain adjustments and alternative benchmarks to derive the expected
12 market return.

13 **Q. What adjustments did you make to the expected market return?**

14 A. I adjusted the calculation of the expected market return to exclude companies in the S&P
15 500 index that (1) did not pay dividends, or (2) had a projected earnings growth rate that
16 was less than 0 percent or greater than 20 percent. This approach resulted in an estimated
17 expected market return of 12.87%, and, depending on the assumed risk-free rate, an MRP
18 of 9.47% to 10.84%. While there are theoretical bases that would argue against these

1 adjustments,¹² they have been relied on in setting regulatory ROEs,¹³ and thus I considered
2 them reasonable for purposes of evaluating the expected market return.

3 **Q. What analyses did you perform to benchmark the expected market return calculated**
4 **using the constant growth DCF model?**

5 A. To benchmark the expected market return calculated using the Constant Growth DCF
6 model, I reviewed expected market returns reported by three sources (Bloomberg
7 Professional, S&P, and State Street), and then combined those expected market returns
8 with the dividend yields reported by those sources¹⁴ to develop expected total market
9 returns. Figure 5, below, provides the comparison of the market return estimate produced
10 by the Constant Growth DCF approach to those other estimates. As shown, these
11 independent benchmarks generally confirm the reasonableness of the market returns
12 produced by my unadjusted and adjusted Constant Growth DCF approaches.

13 **Figure 5: Market Return Benchmarking**

Source	Dividend Yield	Growth Rate	Market Return
Bloomberg Professional ¹⁵	1.46%	10.20%	11.73%
Constant Growth DCF on S&P 500 (Only Dividend Paying Stocks) ¹⁶	1.58%	11.21%	12.87%

¹² For example, it could be argued that it is inconsistent to apply Beta coefficients for the proxy companies that are measured against the entire S&P 500 to an MRP based on just a subset of the S&P.

¹³ See, e.g., 169 FERC ¶ 61,129, at 134 and 138.

¹⁴ If no dividend yield was reported, the analysis reflects the market cap-weighted dividend yield reflected in Exhibit_DSD-5.1.

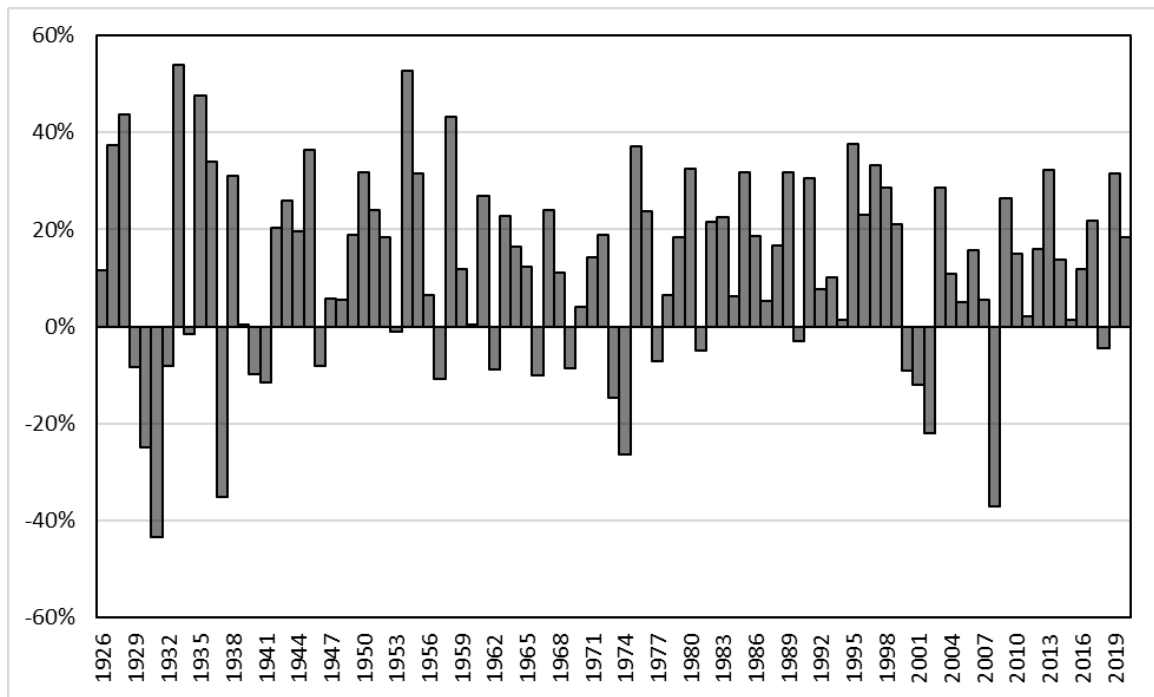
¹⁵ Source: Bloomberg Professional.

¹⁶ Source: Exhibit_DSD- 5.2.

Constant Growth DCF on S&P 500 (All Companies) ¹⁷	1.40%	13.66%	15.16%
State Street ¹⁸	1.40%	14.84%	16.35%
S&P ¹⁹	1.40%	15.98%	17.50%

1 Additionally, as shown in Figure 5, a current expected return of 12.87 percent to
 2 15.16 percent (i.e., the range provided by the expected market return analyses described
 3 above) is reasonable given the range of annual equity returns that have been observed over
 4 the past century. In 49 out of the past 95 years (or 52 percent of observations), the realized
 5 equity return was 12.87% or greater.

6 **Figure 6: Realized U.S. Equity Market Returns (1926-2020)²⁰**



7

¹⁷ Source: Exhibit DSD- 5.1.

¹⁸ <https://www.ssga.com/us/en/individual/etfs/funds/spdr-sp-500-etf-trust-spy>.

¹⁹ S&P Dow Jones Indices, S&P 500 Earnings and Estimate Report, March 31, 2021.

²⁰ Depicts total annual return on large company stocks, as reported in the 2020 Duff and Phelps S&P 500 Yearbook.

1 **Q. What other benchmark of expected market returns did you consider in your analysis?**

2 A. In addition to the expected market return (both unadjusted and adjusted), I further
3 considered the long-term (i.e., 1926 to 2020) arithmetic average market return of 12.16
4 percent,²¹ which is generally consistent with, albeit somewhat below, the adjusted expected
5 market return discussed above.

6 **Q. Please summarize your analysis of the required return on the market (r_m).**

7 A. The above analyses present a range for the required return on the market (r_m) of 12.16
8 percent to 15.16 percent, and the CAPM results based on each point in that range (i.e.,
9 12.16 percent based on the historical market return, 12.87 percent based on the adjusted
10 expected market return, and 15.16 percent based on the unadjusted expected market return)
11 are provided in Direct Exhibit DSD-5. Given the degree to which the top end of that range
12 currently provides CAPM results that are difficult to reconcile with the results of other
13 ROE estimation models, I focus on the lower end of that range (i.e., 12.16 percent to 12.87
14 percent) for purposes of presenting results below.

15 **Q. What are the results of your CAPM analysis?**

16 A. As shown Direct Exhibit DSD-5, my CAPM analyses result in returns within a broad range
17 from 10.21 percent to 13.75 percent, depending on the risk-free rate (i.e., r_f in the CAPM
18 equation). Focusing on the lower end of the range of expected market returns produces a
19 narrower range of CAPM results, as shown in Figure 7.

²¹ Duff & Phelps, 2021 SBBI Yearbook, at 6-17.

1

Figure 7: CAPM Results

	Constant Growth DCF Methodology (Subset of S&P 500 Companies)	Long-Term Historical Market Return
Value Line Betas		
Current Risk-Free Rate	11.57%	10.94%
2022-23 Projected Risk-Free Rate	11.63%	11.00%
2023-27 Projected Risk-Free Rate	11.73%	11.10%
Bloomberg Betas		
Current Risk-Free Rate	10.79%	10.21%
2022-23 Projected Risk-Free Rate	10.89%	10.32%
2023-27 Projected Risk-Free Rate	11.05%	10.47%

2

3

C. BOND YIELD PLUS RISK PREMIUM ANALYSIS

4

Q. Please provide an overview of the bond yield plus risk premium approach you employed.

5

6

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with ownership and therefore must be compensated for bearing that additional risk. That is, since returns to equity holders are more risky than returns to bondholders, equity investors require a premium over the return on less risky bonds. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. In my analysis, I used actual authorized returns for electric utilities as the historical measure of the cost of equity to determine the risk premium.

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1 **Q. Please further describe the analysis.**

2 A. I developed the analysis based on a regression of the risk premium (i.e., authorized ROEs
3 less Treasury yields) as a function of Treasury yields. More specifically, I let authorized
4 ROEs serve as the measure of required equity returns and defined the yield on the long-
5 term Treasury bond as the relevant measure of interest rates. The risk premium is simply
6 the difference between those two points.

7 **Q. Are there other factors that should be considered?**

8 A. Yes. In addition, it is important to recognize both academic literature and market evidence
9 indicating that the equity risk premium is inversely related to the level of interest rates.
10 That is, as interest rates increase (decrease), the equity risk premium decreases (increases).
11 My analysis thus reflects the inverse relationship between interest rates and the equity risk
12 premium and applies that relationship to expected market conditions.

13 **Q. What did your bond yield plus risk premium analysis reveal?**

14 A. As shown on Figure 8, from 1992 through the fourth quarter of 2021, there was, in fact, a
15 strong negative relationship between risk premia and interest rates for electric utilities. To
16 estimate that relationship, I conducted a regression analysis for electric utilities using the
17 following equation:

18
$$RP = a + b (T) \quad [5]$$

19 where:

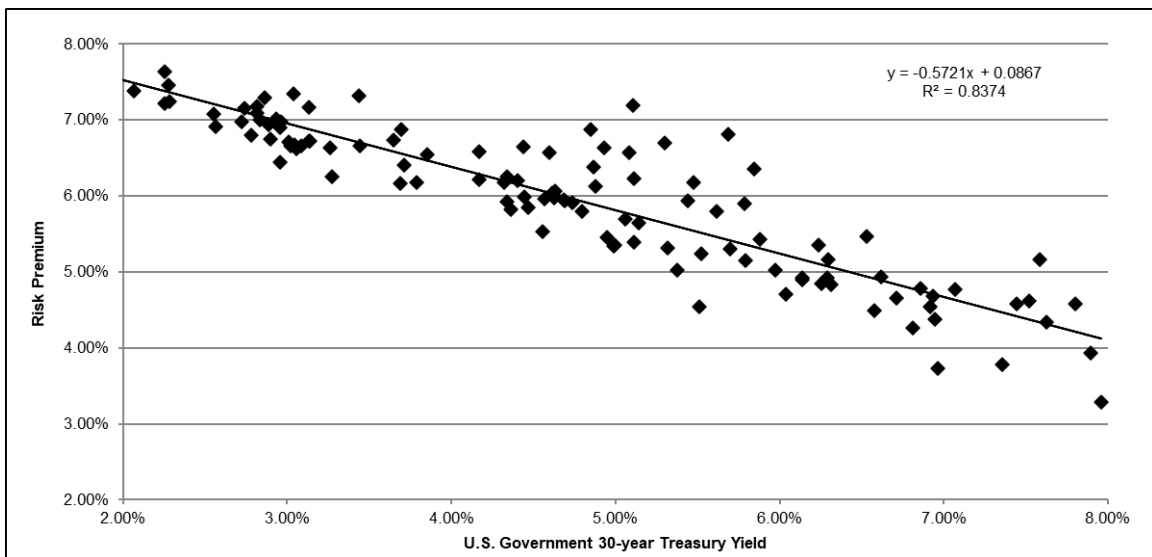
20 RP = Risk Premium (difference between allowed ROEs and the yield on 30-year
21 Treasuries)

22 a = Intercept term

1 b = Slope term
2 T = 30-year Treasury Bond Yield

3 Data regarding allowed ROEs were derived from 678 rate cases from 1992 through
4 2021 as reported by Regulatory Research Associates. That equation's coefficients were
5 statistically significant at the 99.00 percent level.

6 **Figure 8: Electric Utilities Risk Premium vs. Interest Rates²²**



7
8 As shown on Direct Exhibit DSD-6, based on the current 30-day average yield on
9 30-year Treasury bonds, the risk premium would be 7.51 percent, resulting in an estimated
10 ROE of 9.54 percent. Based on the near-term (2022-2023) projections of the 30-year
11 Treasury bond yield (i.e., 2.58 percent), the risk premium would be 7.20 percent, resulting
12 in an estimated ROE of 9.78 percent. Based on longer-term (2023-2027) projections of the
13 30-year Treasury Bond yield (i.e., 3.40 percent), the risk premium would be 6.73 percent,

²² Source: Bloomberg Financial.

1 resulting in an estimated ROE of 10.13 percent. The mean of these estimated ROE results
2 is 9.82 percent. These results are consistent with the median to median-high DCF results,
3 and further support my recommended ROE range of 9.50 percent to 10.40 percent, and my
4 point estimate of 10.00 percent.

5 **D. EXPECTED EARNINGS ANALYSIS**

6 **Q. Have you conducted any other analysis to corroborate the DCF and CAPM results?**

7 A. Yes. I also conducted an Expected Earnings analysis to provide further context for the cost
8 of equity for Liberty-Empire based on the projected ROEs for the proxy group companies.

9 **Q. What is an expected earnings analysis?**

10 A. The Expected Earnings methodology is a comparable earnings analysis that calculates the
11 earnings that an investor expects to receive on the book value of a stock. The Expected
12 Earnings analysis is a forward-looking estimate of investors' expected returns. The use of
13 an Expected Earnings approach based on the proxy companies provides a range of the
14 expected returns on a group of risk comparable companies to the subject company. This
15 range is useful in helping to determine the opportunity cost of investing in the subject
16 company, which is relevant in determining a company's ROE.

17 **Q. How did you develop the expected earnings approach?**

18 A. I relied primarily on the projected ROE for each of the proxy companies as reported by
19 Value Line for the period from 2024-2026. I then adjusted those projected ROEs to account
20 for the fact that the ROEs reported by Value Line are calculated on the basis of common
21 shares outstanding at the end of the period, as opposed to average shares outstanding over
22 the entire period. As shown in Direct Exhibit DSD-7, the Expected Earnings analysis

1 results in a mean ROE estimate of 10.78 percent and a median ROE estimate of 10.93
2 percent. Those results are slightly above the top end of my recommended ROE range, but
3 overlap with the CAPM results, and, as such, serve as a reasonableness check on the other
4 ROE estimation models I analyzed.

5 **E. OTHER BENCHMARK ANALYSES**

6 **Q. In addition to the traditional models used to estimate the cost of equity, have you also**
7 **considered other relevant benchmarks?**

8 A. Yes. In addition to the results of the traditional ROE estimation models, I also considered
9 the median allowed ROE of 9.50 percent for vertically-integrated electric utilities from
10 January 2021 through January 2022 as an important benchmark representing return
11 expectations for utility investors. Based on the results of the other ROE estimation models
12 described herein, as well as Company-specific risk factors and expected changes in
13 economic conditions, that result, while consistent with the lower end of my recommended
14 range of ROEs for the Company, serves as a conservative estimate of Liberty-Empire's
15 cost of equity, due to additional factors that impact the Company's ROE.

16 **V. SUMMARY OF COST OF CAPITAL ANALYSES**

17 **Q. Please provide a summary of your cost of capital analyses.**

18 A. Figure 9, below, provides a summary of the analyses described above.

1

Figure 9: Summary of Cost of Capital Analyses

Median DCF Results (90-Day)			
	Low	Median	High
Constant Growth	8.54%	9.32%	10.37%
Capital Asset Pricing Model (Subset of S&P 500 Companies)			
	Current Risk-Free Rate	2022-23 Projected Risk-Free Rate	2023-2027 Projected Risk-Free Rate
Value Line Betas	11.57%	11.63%	11.73%
Bloomberg Betas	10.79%	10.89%	11.05%
Capital Asset Pricing Model (Historical Market Return)			
	Current Risk-Free Rate	2022-23 Projected Risk-Free Rate	2023-2027 Projected Risk-Free Rate
Value Line Betas	10.94%	11.00%	11.10%
Bloomberg Betas	10.21%	10.32%	10.47%
Risk Premium			
	Current Risk-Free Rate	2022-23 Projected Risk-Free Rate	2023-2027 Projected Risk-Free Rate
Risk Premium Results	9.54%	9.78%	10.13%
Expected Earnings			
Average	10.78%		
Median	10.93%		

2 **Q. Were there other factors that you considered in your determination of a**
3 **recommended roe for Liberty-Empire?**

4 **A.** Yes. As described in the subsequent two sections, I also considered the impact of current
5 and expected economic and capital market conditions on the various models used to
6 estimate the cost of equity, as well as business risks specific to the Company and other
7 factors relevant to the estimation of the cost of equity. Those considerations informed my

1 opinion regarding where, within the range of results, Liberty-Empire's ROE reasonably
2 falls.

3 **VI. ECONOMIC AND CAPITAL MARKET CONDITIONS**

4 **Q. What topics do you discuss in this section of your testimony?**

5 A. In this section of my testimony, I describe recent changes in economic conditions that have
6 a bearing on the ROE estimation models and impact the Company's cost of equity. In
7 particular, this section of my testimony describes inflationary pressures and their impact
8 on utilities, changes in the market's view of the riskiness of the utility sector relative to the
9 overall market (which directly impacts the cost of equity), and expectations regarding near-
10 term increases in interest rates that I believe should be considered when evaluating the
11 current results of the DCF model and understanding the forward-looking impacts on the
12 Company's ROE.

13 **Q. Why is it important to consider economic and capital market conditions in your
14 assessment of the company's ROE?**

15 A. The cost of capital is affected by prevailing and expected economic and capital market
16 conditions, and the models used to estimate ROE directly rely on economic inputs related
17 to interest rates, market returns, and growth in the economy. In addition, as described
18 herein, the cost of capital is a forward-looking concept, yet ROE models often rely on
19 historical inputs. To the extent that those inputs are impacted by or reflect conditions that
20 are expected to change significantly, it is important to consider those impacts to inform the
21 analyst's judgment regarding the estimation of ROE.

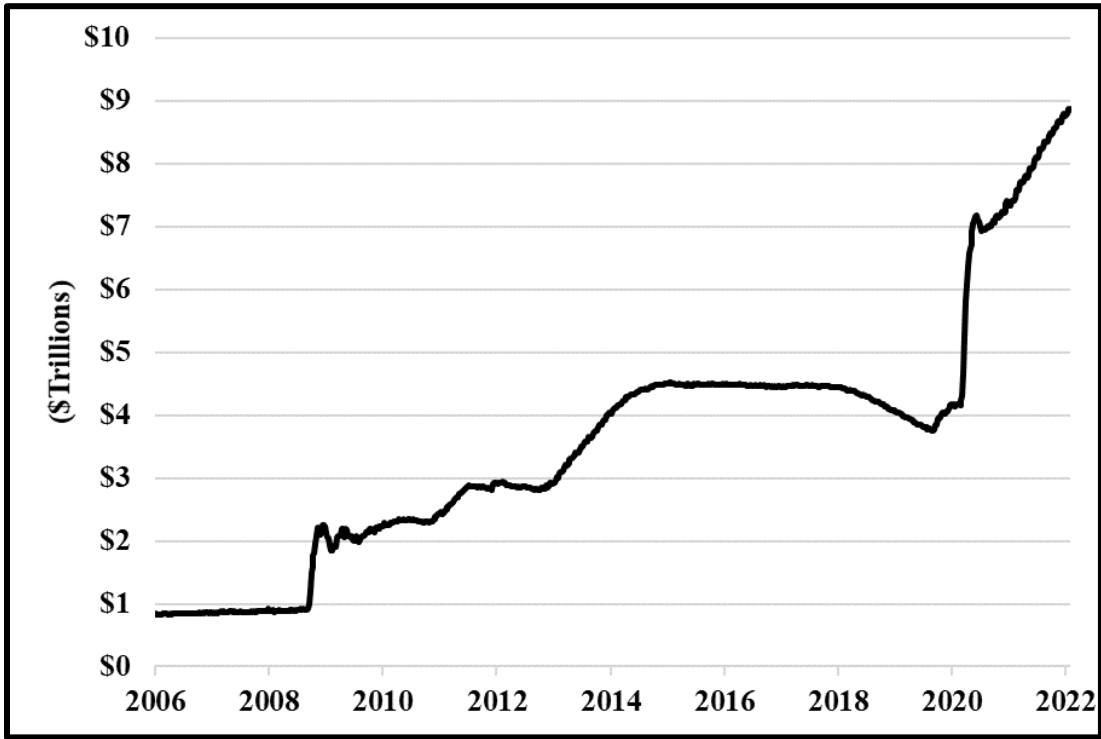
1 **Q. Please provide an overview of current economic and capital market conditions.**²³

2 A. The U.S. and other world economies contracted sharply in the first and second quarters of
3 2020 in the early stages of the COVID-19 pandemic. In response, the U.S. government
4 took action to combat the economic impacts of the pandemic, including passing multiple
5 rounds of fiscal stimulus, reducing borrowing rates, and increasing the supply of money in
6 the economy. The U.S. Federal Reserve (the “Fed”), the central bank of the U.S., took
7 significant steps in response to the pandemic, including: (1) decreasing its target range for
8 the Federal Funds rate (the rate at which depository institutions lend between themselves)
9 twice in March 2020, resulting in a target range of 0.00 percent to 0.25 percent; (2)
10 increasing its holdings of both Treasury and mortgaged-back securities; and (3) supporting
11 increased credit to both businesses and individual borrowers. In regard to the Fed’s
12 holdings of both Treasury and mortgage-backed securities, Figure 10 shows the build-up
13 in the Fed’s balance sheet over time, including the dramatic increase in response to the
14 economic impacts of the pandemic.

²³ Note, on February 24, 2022, Russia invaded Ukraine, causing reverberations around the world and increasing volatility in securities markets. The impact of increased volatility are described in more detail herein. The outcome and longer-term economic impacts of those events, however, are uncertain as of the filing of this case.

1

Figure 10: Federal Reserve Total Assets, 2006-2022²⁴



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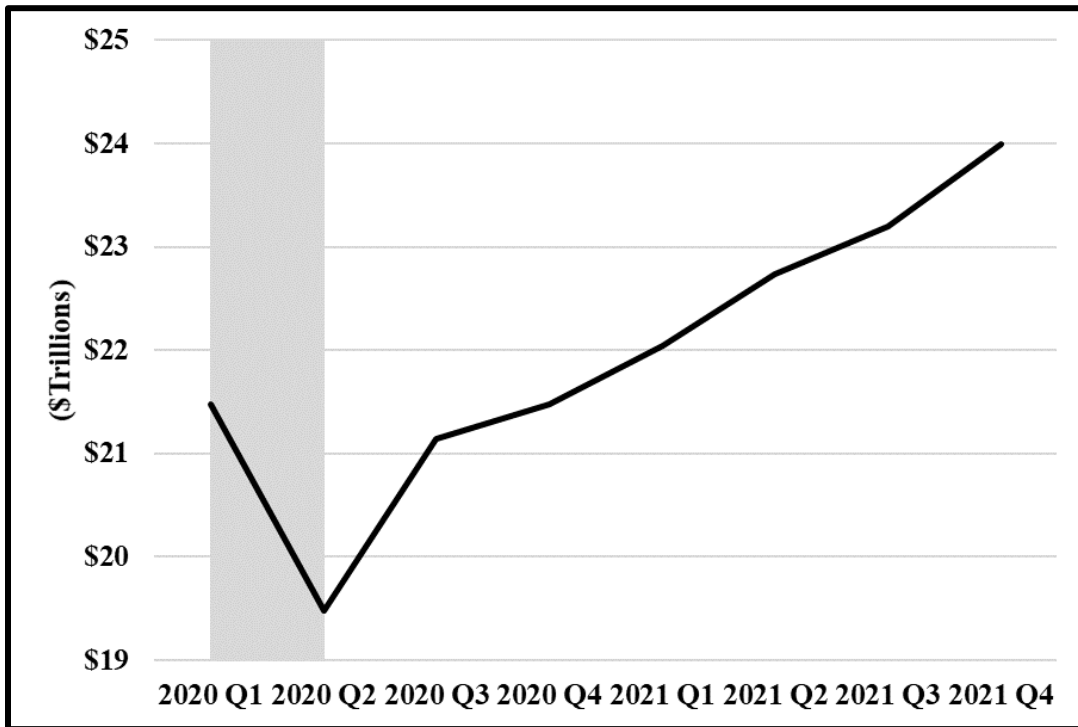
5

In the third and fourth quarters of 2020, the U.S. economy rebounded considerably, and steadily improved through 2021, as demonstrated by the growth in GDP in the chart below.

²⁴ Source: Federal Reserve Economic Data.

1

Figure 11: U.S. GDP, Q2 2020 to Q4 2021²⁵



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The U.S. economy also experienced elevated inflation in 2021 and into 2022 that was at its highest level in 40 years, and which economists generally attribute to Federal stimulus provided in response to the impacts of the COVID-19 pandemic and global supply constraints.²⁶

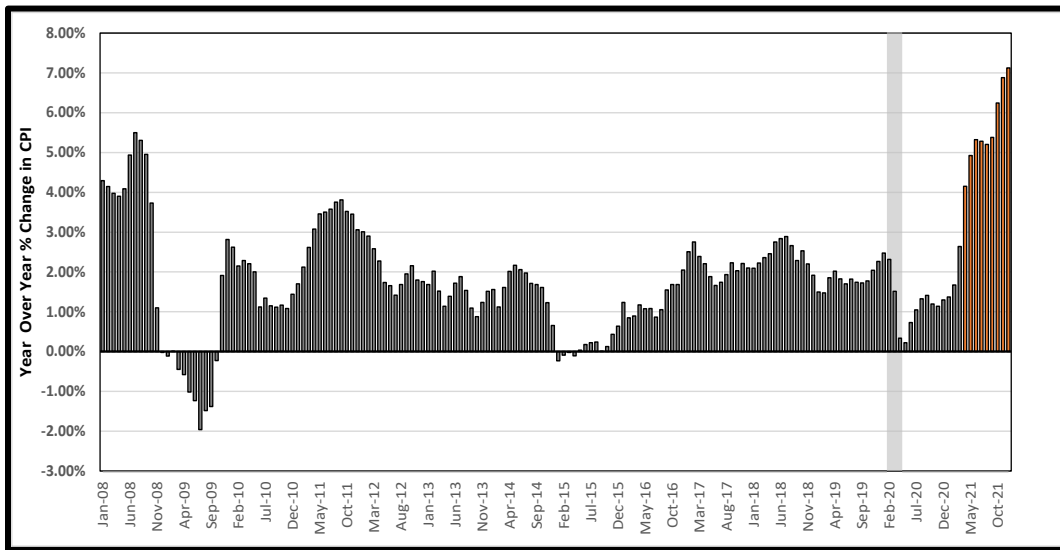
²⁵ Source: Federal Reserve Economic Data (recession highlighted in grey).

²⁶ Smialek, Jeanna and Swanson, Ana, "Rapid Inflation Fuels Debate Over What's to Blame: Pandemic or Policy," New York Times, January 22, 2022.

1 **Q. Please further discuss the elevated inflation rate in 2021.**

2 A. As shown in Figure 12, the Consumer Price Index (“CPI”) increased substantially in 2021.
3 Specifically, the year over year (“YOY”) increase in the CPI rose from 1.37 percent in
4 January 2021 to 7.12 percent in December, the largest 12-month increase since 1982.²⁷

5 **Figure 12: YOY CPI Increase – January 2008 – December 2021²⁸**



6
7 **Q. Is there increased risk for utilities related to inflation?**

8 A. Yes. Increased inflation poses a risk to utilities in terms of managing costs, particularly
9 when ratemaking conventions such as the use of an historical test year create regulatory
10 lag and delay utilities’ ability to recover those increased costs, pressuring cash flow and
11 credit metrics. In 2021, S&P opined on the risk that even a transitory increase in inflation
12 poses to regulated investor-owned utilities, stating:

²⁷ Matthews, Steve, “A Guide to the Fed Meeting as It Seeks to Tame Inflation,” Bloomberg News, January 26, 2022.

²⁸ Source: Bureau of Labor Statistics, shaded area indicates the COVID-19 pandemic recession.

1 The most recent data released during mid-June indicated that the CPI
2 rose 5.4% in June from the prior year, which could make it more
3 difficult for a utility to offset these costs on a timely basis through
4 traditional rate increases. While our economists expect the jump in
5 inflation to be largely transitory, they recently noted that the risk that
6 U.S. inflation will stay higher and last longer than our earlier forecasts
7 could force the fed to move on interest rates earlier than planned,
8 potentially fueling market volatility and widening spreads on debt.
9 Although inflation is not a new challenge for utilities, it had taken a
10 backseat to other more pressing problems the sector faces, such as
11 dealing with the energy transition, record debt burdens, and the potential
12 for more rigorous environmental regulation. Now, recent headlines
13 remind us that utilities tend to face pressure to raise rates during periods
14 of cost inflation and that regulatory lag can constrain their financial
15 performance.²⁹

16 More recently, S&P further noted the following with regard to the impact of
17 inflation on utilities:

18 Given the sustained increase to the U.S. consumer price index in 2021,
19 inflation no longer appears to be just transitory and may have financial
20 implications for the investor-owned North American regulated utility
21 industry. Because of the regulatory lag within the industry, inflation,
22 which causes prices to rise, typically leads to a weakening of financial
23 performance.³⁰

24 **Q. What has been the Fed's response to elevated inflation?**

25 A. In response, the Fed has shifted its stance and accelerated the timing of its planned response
26 to combat inflation in three areas: (1) increases in the Federal Funds rate; (2) deceleration
27 in the purchases of government debt and mortgage-backed securities;³¹ and (3) reducing,

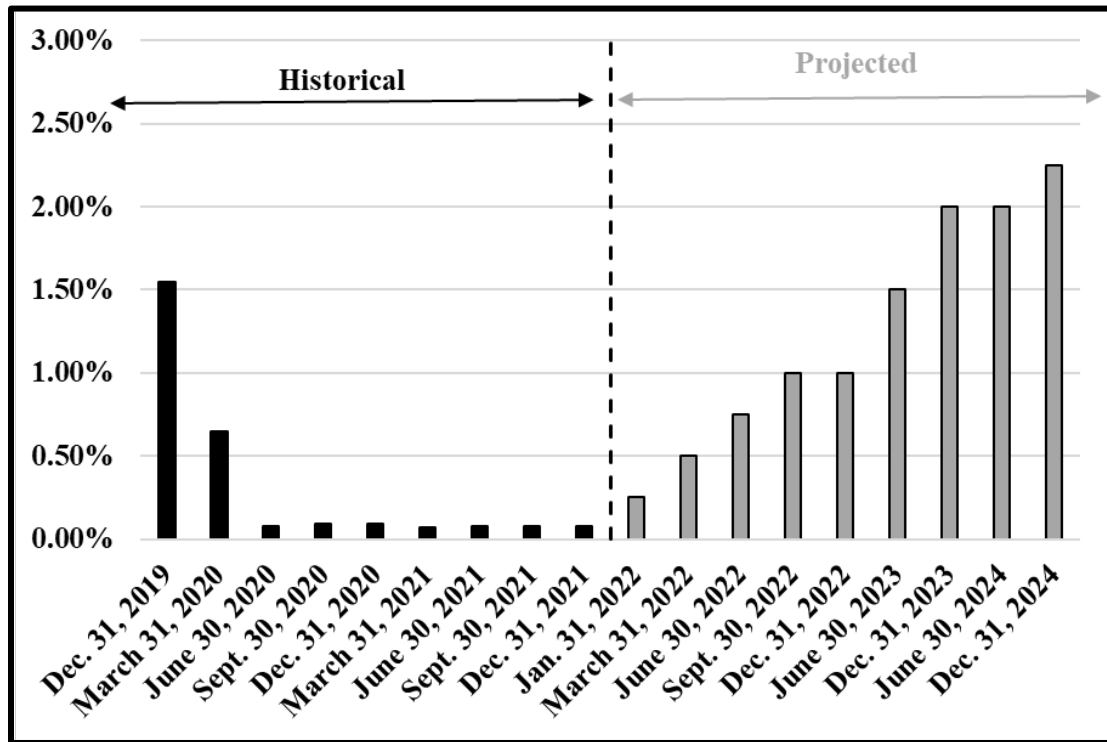
²⁹ S&P Global Ratings, "Will Rising Inflation Threaten North American Investor-Owned Regulated Utilities' Credit Quality?" July 20, 2021.

³⁰ S&P Global Ratings, "For The First Time Ever, The Median Investor-Owned Utility Ratings Falls To The 'BBB' Category," January 27, 2022, at 12.

³¹ Minutes of the Federal Open Market Committee, December 14-15, 2021, at 12.

1 or “normalizing,” the size of the Fed’s balance sheet. In terms of the Federal Funds rate,
 2 Figure 13 shows the historical level of the top end of the Fed’s target range for the Fed
 3 Funds rate, as well as anticipated increases, per a Bloomberg News survey of economists
 4 in January 2022.³²

5 **Figure 13: Historical and Projected Federal Funds Rate³³**



6
 7 In its January 25, 2022, meeting, the Federal Reserve indicated that it would begin
 8 implementing interest rate increases starting in March 2022, and that, due to the heightened
 9 level of inflation, it would continue to do so at a faster rate than its prior round of interest
 10 rate increases. To highlight that point, Jerome Powell, the Chairman of the Federal

³² Matthews, Steve, “A Guide to the Fed Meeting as It Seeks to Tame Inflation,” Bloomberg News, January 26, 2022.

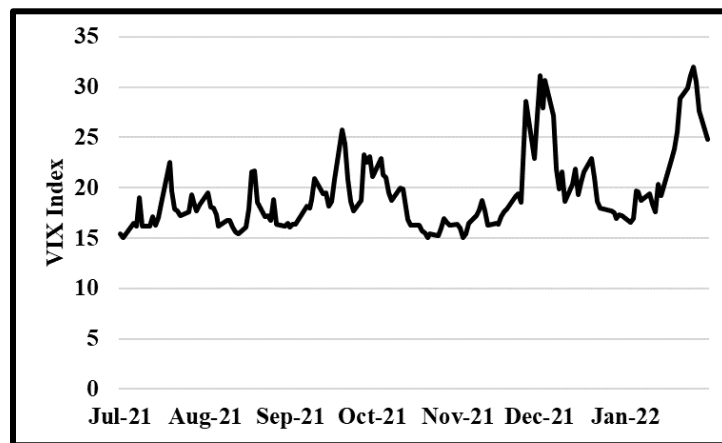
³³ Source: Bloomberg Financial.

1 Reserve, stated at a January 26, 2022, news conference that “[t]his is going to be a year in
2 which we move steadily away from the very highly accommodative monetary policy that
3 we put in place to deal with the economic effects of the pandemic.”³⁴ This timing
4 acceleration by the Fed has contributed to greater volatility in the stock market, as well as
5 increased current and expected long-term interest rates.

6 **Q. Please further describe the increased volatility in the stock market.**

7 A. As cited above, S&P identified in July 2021 that increases in the Federal Funds rate and
8 quantitative tightening could result in increased volatility. S&P specifically noted that
9 actions by the Fed could result in “market volatility and widening spreads on debt.” S&P’s
10 concerns, expressed in July 2021, have since been realized. The following Figure 14 shows
11 the CBOE Volatility Index (the “VIX”), which is a benchmark index to measure the
12 expected volatility in the S&P 500, since the beginning of July 2021.

13 **Figure 14: CBOE VIX Index, July 2021 – January 2022³⁵**



14

³⁴ Timiraos, Nick, “Fed Interest-Rate Decision Tees Up March Increase,” The Wall Street Journal, January 26, 2022.

³⁵ Source: Bloomberg Financial.

1 **Q. What is the impact of greater volatility in the stock market on the cost of equity?**

2 A. Greater volatility in the stock market indicates increased perceptions of investor risk and
3 increases the required return on the broader market.

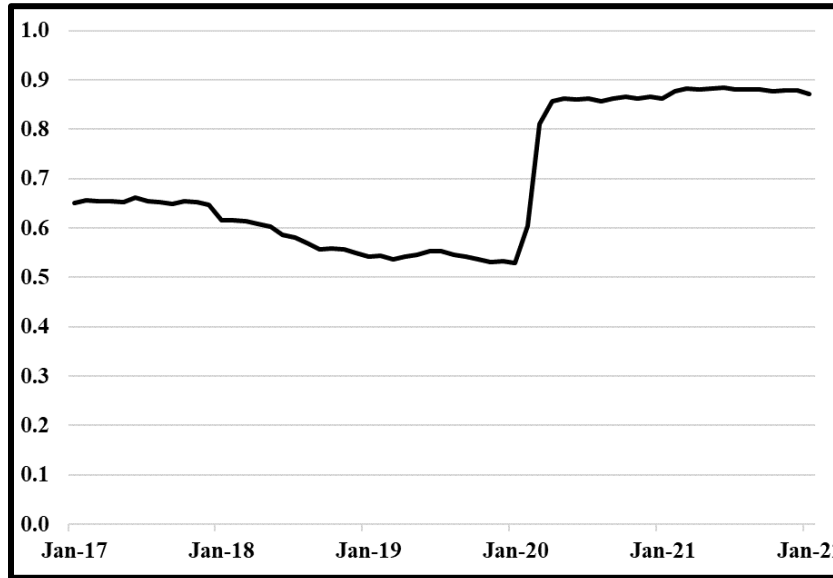
4 **Q. Does greater volatility in the stock market impact the cost of equity for regulated
5 utilities like the Company?**

6 A. Yes, although as discussed earlier shares in regulated utility companies have traditionally
7 been considered “defensive” investments, meaning that they are subject to less volatility
8 than the overall market. There is evidence, however, that the investment community’s
9 view of utilities’ relative market risk has shifted and there is greater relative risk perceived
10 for the sector.

11 **Q. What evidence is there that the investment community’s view of utilities’ relative
12 market risk has shifted and there is greater relative risk perceived for the sector?**

13 A. As discussed previously in the discussion of the CAPM analysis, the Beta coefficient is a
14 measure of how the return on a given investment or sector moves in relation to the overall
15 market. Increases in Beta coefficients indicate increasing risk of the security or sector
16 relative to the general market. Utility Beta coefficients have increased significantly, as
17 shown in Figure 15, providing evidence that the investment community’s view of utilities’
18 relative market risk has shifted and there is greater relative risk perceived for the sector.

1 **Figure 15: Summary of Utility Bloomberg Beta Coefficients Over Time³⁶**



2

3 **Q. You note previously that heightened inflation has increased the likelihood of**

4 **movements by the fed to increase interest rates, among other actions. What has been**

5 **the recent trend for interest rates?**

6 **A.** As shown in the figure below, interest rates on 30-year Treasury bonds have climbed

7 recently, increasing by over 30 basis points since December 1, 2021.

³⁶ Source: Bloomberg Financial.

1

Figure 16: 30-Year Treasury Yield (%)³⁷



2

3 **Q. What is the market's view regarding expected interest rate increases?**

4 A. In response to the Federal Reserve's announcements about increases to its target range for
5 the Federal Funds rate, investors have forecast between five to seven Federal Funds rate
6 increases in 2022 alone, as shown in the figure below.

³⁷ Source: Bloomberg Financial.

1 **Figure 17: Investment Banks' Expected 2022 Interest Rate Increases**³⁸

Investment Bank	Expected 2022 Federal Funds Increases
Goldman Sachs	7
BNP Paribas	5
Bank of America	6-7

2 Further, several equity analysts expect long-term government bond yields to
3 continue increasing at least through the end of 2022. As summarized in Figure 18,
4 according to a survey of six different equity analysts, the 10-year Treasury Bond yield is
5 expected to range from 1.75 percent to 2.50 percent, or 8 to 83 basis points higher than the
6 30-day average 10-year Treasury Bond yield of 1.67 percent as of January 31, 2022.³⁹
7 Morgan Stanley specifically noted that “strong growth in 2022, alongside receding but
8 above-target inflation, keeps the Fed patient, yet gradually moving toward rate hikes, and
9 keeps Treasury yields moving higher.”⁴⁰

10 **Figure 18: Equity Analysts' Forecast of the 10-Year Treasury Yield**⁴¹

Bank	2022 Forecast
Barclays	1.75%
Morgan Stanley	2.10%
Goldman Sachs	2.00%
JP Morgan	2.10%
Wells Fargo Investment Institute	2.00% - 2.50%
Amundi	1.80% - 2.00%

³⁸ Curran, Enda, “Goldman Sees Fed Hiking Seven Times in 2022 Instead of Five,” Bloomberg News, February 11, 2022; Kennedy, Simon, “Powell’s ‘Different Expansion’ Spurs Faster Fed Hike Calls,” Bloomberg News, January 27, 2022; Bank of America Global Research, “Jan FOMC Review: a Hawkish Bent,” January 26, 2022.

³⁹ The 10-year treasury yield has averaged 1.93 percent in February 2022, which is already in the range of the equity analysts’ forecasts.

⁴⁰ “Factbox: Wall Street Forecasts for the U.S. Dollar and 10-Year Treasury Yield in 2022.” Reuters, Thomson Reuters, 18 Nov. 2021, <https://www.reuters.com/markets/us/wall-street-forecasts-us-dollar-10-year-treasury-yield-2022-2021-11-18/>.

⁴¹ *Ibid.*

1 **Q. What is the impact of increased interest rates on the cost of equity?**

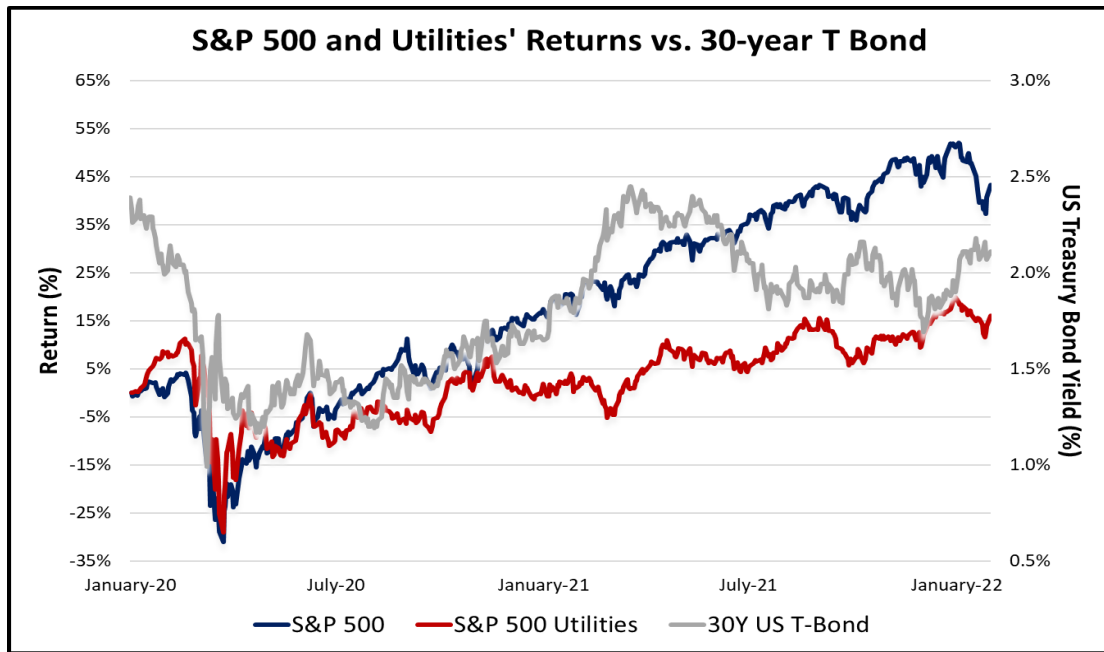
2 A. Equity investments are generally considered to be riskier than debt investments. All else
3 equal, increased interest rates increase the cost of equity. As previously discussed,
4 however, there is a demonstrated inverse relationship between the equity risk premium and
5 the level of interest rates. In addition, credit spreads, or yield differences between types of
6 debt securities (e.g., between Treasury bonds and highly-rate utility debt), also change over
7 time. Therefore, when interest rates (i.e., the cost of debt) increase, financial theory holds
8 that the cost of equity increases as well, although not on a one-for-one basis.

9 **Q. What do you conclude regarding the impact of increasing interest rates on the**
10 **company's cost of equity?**

11 A. When yields on government bonds are increasing, those yields become more competitive
12 with utility dividend yields, which may lead to a reduction in utility stock valuations and a
13 corresponding increase in dividend yields. That relationship is demonstrated in the chart
14 below, which shows the historical inverse relationship between interest rates and utility
15 share prices.

1
2

Figure 19: S&P 500 Index Returns, S&P 500 Utilities Index Returns, and 30-Year U.S. Treasury Bond Yields, January 2020 – January 2022



3

4

A reduction in utility stock prices increases the dividend yield used in the DCF model. I have considered this factor when evaluating the results of the DCF model and considering their reasonableness in representing the forward-looking cost of equity for the Company. In particular, I have placed greater weight on the median-to-median-high DCF results based on this consideration.

5

6

7

8

9

Q. Please summarize the key takeaways from your review of current and expected economic conditions.

10

11

A. In my view, inflationary pressures that are leading the Fed to pursue quantitative tightening, including increasing interest rates, along with the increased riskiness of the utility sector relative to overall market risk, are important considerations when determining where, within a reasonable range of results, the Company's ROE appropriately falls. Relatedly,

12

13

14

1 the DCF model results are likely understating the Company's forward-looking cost of
2 equity, which is particularly evident when considering the DCF model results in the context
3 of the other ROE estimation analyses discussed herein. I have considered these factors,
4 along with Company-specific business risks (discussed in the next section), in developing
5 my ROE recommendation.

6 **VII. BUSINESS RISKS AND OTHER CONSIDERATIONS**

7 **Q. What is the focus of this section of your Direct Testimony?**

8 A. This section of my direct testimony focuses on business risks and other considerations that
9 impact the Company's cost of equity. In particular, I discuss the Company's increased
10 business risk related to the following factors, as well as the relative impact of these risks
11 on Liberty-Empire as compared to the proxy companies: (1) small size risk; (2) capital
12 expenditure risk; and (3) regulatory risk, including consideration of the regulatory exposure
13 of the Company's Asbury plant investments and the extreme weather event of February
14 2021. I also considered the costs of issuing common stock, also known as flotation costs.
15 While I did not make explicit adjustments for those factors, they informed my opinion
16 regarding where, within the range of results, Liberty-Empire's ROE reasonably falls.

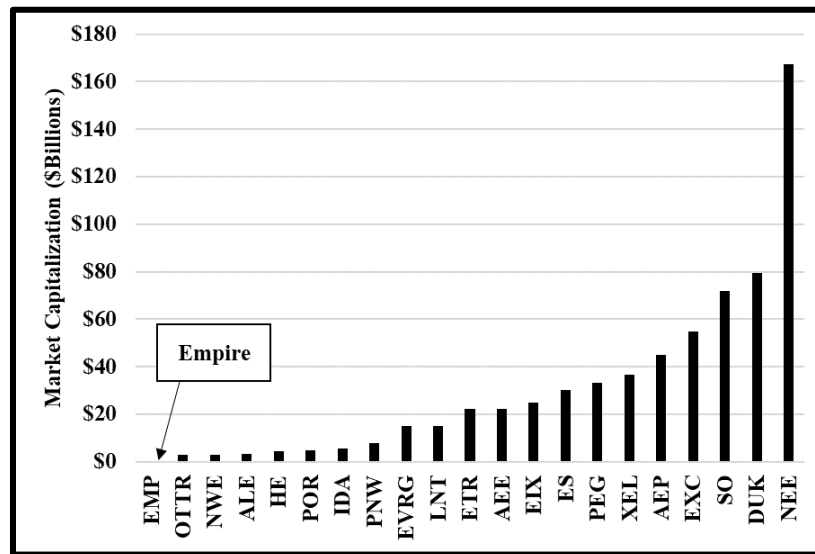
17 **A. SMALL SIZE RISK**

18 **Q. How does the Company's small size affect its risk profile and cost of equity?**

19 A. The small size of Liberty-Empire relative to the proxy group companies is an important
20 risk factor in determining the Company's cost of equity. Smaller companies generally are
21 thought to be riskier than larger companies, and thus investors require a higher return for
22 investment in smaller firms. That higher return requirement is known as the "size

1 premium.” Academic literature recognizes that smaller companies tend to be rewarded
2 with higher total returns than larger companies, even after the relative illiquidity of smaller
3 company stock is taken into account. Figure 20 (see also Direct Exhibit DSD-8) shows
4 Liberty-Empire’s implied market capitalization relative to the proxy group companies. As
5 shown in that figure, Liberty-Empire’s implied market capitalization is \$0.06 billion,
6 compared with the proxy group median market capitalization of \$22.30 billion.

7 **Figure 20: Market Capitalization of Liberty-Empire vs. Proxy Group**



8
9 Liberty-Empire’s small size relative to the proxy group companies means that the
10 Company’s earnings and cash flows may be disproportionately affected by circumstances
11 such as the loss of large customers, weaker than expected demand for electric utility service
12 due to general macroeconomic conditions in the service territory, or fuel price volatility.
13 Similarly, capital expenditures for non-revenue producing investments such as system
14 maintenance and replacements will put proportionately greater pressure on customer costs.
15 Taken together, these risks affect the return required by investors for smaller companies.

1 While I recognize that, as a wholly-owned, indirect subsidiary of LUCo, Liberty-Empire
2 may have some protection from such external shocks, on a stand-alone basis the Company
3 is relatively small as compared to the proxy group companies used for the ROE analysis.
4 This small size magnifies the effect of other business and financial risks on Liberty-Empire.

5 **Q. Do credit rating agencies consider small size as a distinguishing risk factor?**

6 A. Yes. Moody's, for example, considers the size and diversity of utility operations to be a
7 distinguishing factor that makes some utilities riskier than others. In discussing its rating
8 methodology for regulated electric and gas utilities, Moody's states:

9 We also consider the diversity of utility operations (e.g., regulated
10 electric, gas, water, steam) when there are material operations in more
11 than one area. Economic diversity is a typically a function of the
12 population, size and breadth of the territory and the businesses that drive
13 its GDP and employment. For the size of the territory, we typically
14 consider the number of customers and the volumes of generation and/or
15 throughput. For breadth, we consider the number of sizeable
16 metropolitan areas served, the economic diversity and vitality in those
17 metropolitan areas, and any concentration in a particular area or
18 industry. In our assessment, we may consider various information
19 sources.⁴²

20 Liberty-Empire's service territory is characterized by the small size and lack of
21 geographic and economic diversity that Moody's describes as an increased risk factor for
22 regulated utilities.

⁴² Moody's Investors Service, "Rating Methodology: Regulated Electric and Gas Utilities," June 23, 2017, at 16.

1 **Q. Have any credit rating agencies commented on Liberty-Empire’s small size?**

2 A. Yes. Moody’s, for example, notes that, “[o]ur assessment of Empire also incorporates the
3 utility’s small size and limited geographic diversity on a stand-alone basis, which is offset
4 to some degree by its position as a segment of the larger Liberty Utilities Company,
5 (Liberty, not rated), a wholly-owned subsidiary of Algonquin Power & Utilities Corp.
6 (Algonquin, not rated).”⁴³

7 **Q. What is your conclusion regarding how Liberty-Empire’s small size affects the**
8 **company’s cost of equity?**

9 A. My conclusion is that Liberty-Empire is significantly smaller than the proxy group
10 companies. While I have not made a specific adjustment to reflect the Company’s small
11 size, the risk associated with small size indicates that Liberty-Empire’s authorized ROE
12 should be higher than the mean and median results for the proxy group.

13 **B. CAPITAL EXPENDITURE RISK**

14 **Q. Please summarize Liberty-Empire’s projected capital expenditures.**

15 A. The Company projects that during the five-year period 2022-2026,
16 Liberty-Empire’s capital expenditures will total approximately \$1.3 billion. That
17 represents an average over \$250 million per year over that five-year period. These

⁴³ Moody’s Investors Service, Liberty-Empire District Electric Company (The), Credit Opinion, January 15, 2021, at 1.

1 expenditures represent approximately 58.46 percent of the Company's total net utility plant
2 in service as of December 31, 2020.⁴⁴

3 **Q. How is Liberty-Empire's risk profile affected by its substantial capital expenditure**
4 **program?**

5 A. The Company's risk profile is adversely affected because the heightened level of
6 investment increases the risk of under-recovery, or the delayed recovery of the invested
7 capital, which is known as regulatory lag. In addition, an inadequate return would put
8 downward pressure on key credit metrics.

9 **Q. Does the investment community recognize the risks associated with increased capital**
10 **expenditures?**

11 A. Yes, it does. From a credit perspective, the additional pressure on cash flows associated
12 with high levels of capital expenditures exerts corresponding pressure on credit metrics
13 and, therefore, credit ratings. S&P, noted the following with regard to capital spending in
14 the regulated electric utility industry:

15 [T]here is little doubt that the U.S. electric industry needs to make
16 record capital expenditures to comply with the proposed carbon
17 pollution rules over the next several years, while maintaining safety
18 standards and grid stability. We believe the higher capital spending and
19 subsequent rise in debt levels could strain these companies' financial
20 measures, resulting in an almost consistent negative discretionary cash
21 flow throughout this higher construction period. To meet the higher
22 capital spending requirements, companies will require ongoing and
23 steady access to the capital markets, necessitating that the industry

⁴⁴ Source: Data provided by Company. Liberty-Empire does not project capital expenditures for Oklahoma specifically. Therefore, capital expenditures and net plant for Liberty-Empire as a whole (i.e., including Arkansas, Kansas, Missouri, and Oklahoma) have been used herein as a proxy.

1 maintains its high credit quality. We expect that utilities will continue
2 to effectively manage their regulatory risk by using various creative
3 means to recover their costs and to finance their necessary higher
4 spending.⁴⁵

5 **Q. Have rating agencies commented specifically on the risk associated with the elevated**
6 **level of Liberty-Empire’s planned capital expenditures?**

7 A. Yes. For example, Moody’s recently commented that “[a]lthough Liberty-Empire has
8 produced higher than anticipated credit metrics over the last two years, we expect credit
9 metrics to weaken over the next 12-18 months as the company plans to spend about five
10 times its 2020 capital expenditures in 2021, primarily to add 600 MW of new wind
11 generation.”⁴⁶ As discussed above, Liberty-Empire is projecting continued elevated levels
12 of capital spending through 2026.

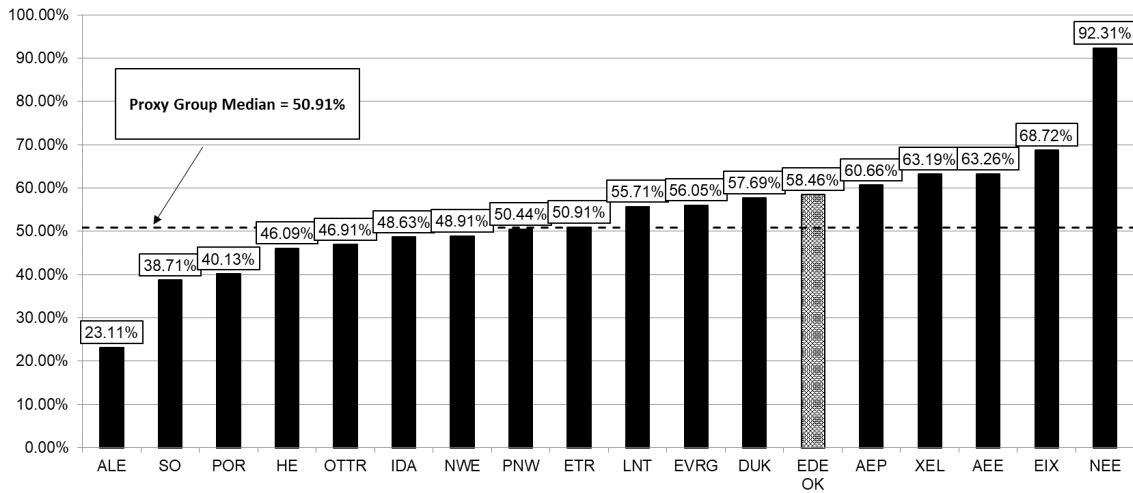
13 **Q. Have you analyzed how Liberty-Empire’s capital spending program compares to**
14 **those of the proxy group companies?**

15 A. Yes. I compared the ratio of projected capital expenditures to net utility plant for Liberty-
16 Empire to the ratios for the proxy group companies. Figure 21 (see also Direct Exhibit
17 DSD-9) shows that Liberty-Empire’s ratio of projected capital expenditures to net utility
18 plant is above average relative to the proxy group companies and is 1.15 times higher than
19 the median ratio for the proxy group of 50.91 percent.

⁴⁵ Standard & Poor’s RatingsDirect, “U.S. Regulated Electric Utilities’ Annual Capital Spending Is Poised To Eclipse \$100 Billion,” July 29, 2014, at 7.

⁴⁶ Moody’s Investors Service, Liberty-Empire District Electric Company (The), Credit Opinion, January 15, 2021, at 1.

1 **Figure 21: Ratio of 2022-26 Capital Expenditures to 2020 Net Utility Plant**



2
 3 **Q. What are your conclusions regarding the effect of Liberty-Empire’s capital spending**
 4 **program on its risk profile?**

5 A. Liberty-Empire’s projected level of capital expenditures over the next five years is
 6 significant, and timely cost recovery is needed to maintain the Company’s credit metrics
 7 at a level consistent with the current credit ratings. It is clear that the financial community
 8 recognizes the additional risks associated with substantial capital expenditures. In my view,
 9 given the magnitude of Liberty-Empire’s projected capital expenditures as a percentage of
 10 net utility plant, continued access to capital on reasonable terms is required and supports
 11 an authorized ROE for the Company above the proxy group mean or median.

12

1 **C. REGULATORY RISK ASSESSMENT**

2 **Q. Why is a utility’s regulatory framework an important consideration for investors?**

3 A. Regulatory risk is a key component of business risk for regulated utilities. For instance,
4 S&P Global, in its rating methodology for regulated utilities, states “[t]he regulatory
5 framework/regime’s influence is of critical importance when assessing regulated utilities’
6 credit risk because it defines the environment in which a utility operates and has a
7 significant bearing on a utility’s financial performance.”⁴⁷ Moody’s, in its rating
8 methodology for regulated electric and gas utilities, lists “Regulatory Framework” as one
9 of “four key factors that are important in [Moody’s] assessment of ratings in the regulated
10 electric and gas utility sector.”⁴⁸ Moody’s states that “[a]n over-arching consideration for
11 regulated utilities is the regulatory environment in which they operate. The nature of
12 regulation can vary significantly from jurisdiction to jurisdiction,”⁴⁹ and the agency assigns
13 “Regulatory Framework,” together with “Ability to Recover Costs and Earn Returns,” a
14 50% factor weighting in its ratings scorecard.

15 **Q. What factors did you consider in assessing Liberty-Empire’s regulatory framework
16 and regulatory risk?**

17 A. I primarily considered the following factors in assessing Liberty-Empire’s regulatory
18 framework and regulatory risk: (1) ratemaking conventions and adjustment mechanisms
19 available to Liberty-Empire compared to the proxy companies; and (2) significant areas of

⁴⁷ S&P Global, “Key Credit Factors for the Regulated Utilities Industry,” November 19, 2013, at 6.

⁴⁸ Moody’s Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 2.

⁴⁹ *Id.*, at 3.

1 potential cost exposure for Liberty-Empire – namely the recovery of costs related to the
2 retirement and decommissioning of the Asbury coal plant (“Asbury”) and costs borne
3 during the February 2021 extreme winter weather event (referred to herein as “Winter
4 Storm Uri”).

5 **Q. Please describe your analysis of ratemaking conventions and adjustment**
6 **mechanisms.**

7 A. I conducted an analysis of the ratemaking conventions and adjustment mechanisms that
8 most significantly impact the Company’s risk profile as compared to those of the operating
9 utility companies held by the proxy group companies. Specifically, I examined the
10 following factors that affect the business risk of Liberty-Empire, and the proxy group
11 companies: (1) test year convention; (2) rate base convention; (3) revenue decoupling; and
12 (4) capital cost recovery. The results of that analysis are provided in Direct Exhibit DSD-
13 10.

14 **Test Year Convention:** As shown in Direct Exhibit DSD-10, 51.90 percent of the
15 operating companies (i.e., 46 out of 79) in the proxy group provide service in jurisdictions
16 that allow the use of a fully or partially forecast test year. By contrast, Liberty-Empire’s
17 rates are set based on a historical test year, adjusted for known and measurable changes.

18 **Rate Base Convention:** Like Liberty-Empire, 45.57 percent of the operating companies in
19 the proxy group (i.e., 36 out of 79) use test year-end rate base, which provides more timely
20 cost recovery of capital investments, while 54.43 percent use average rate base.

21 **Revenue Decoupling:** 48.10 percent of the operating utilities (both gas and electric) held
22 by the proxy group (i.e., 38 out of 79) have revenue decoupling mechanisms or weather

1 normalization adjustment clauses that allow them to break the link between customer usage
2 and revenues. Liberty-Empire does not have a revenue decoupling mechanism for its
3 electric utility operations in Oklahoma.

4 **Capital Cost Recovery**: Approximately 55.70 percent of the operating utilities held by the
5 proxy group (i.e., 44 out of 79) have capital cost tracking mechanisms that allow them to
6 recover capital investments for generation capacity or generic infrastructure replacement
7 that are placed into service between rate cases, whereas Liberty-Empire does not have such
8 cost tracking mechanisms. Finally, 48.10 percent of the operating companies in the proxy
9 group (i.e., 38 out of 79) are allowed to include some or all of construction work in progress
10 (“CWIP”) in rate base between rate cases, whereas Liberty-Empire is not authorized to do
11 so in Oklahoma.

12 **Q. What comment do you have on the Company’s cost exposure related to Asbury?**

13 A. Liberty-Empire announced the retirement of Asbury in March 2020, which further reduced
14 the Company’s exposure to coal-fired generation. In fact, the Company reduced CO₂
15 emissions by 33 percent from 2017 to 2020.⁵⁰ The Company also added 600 MW of new
16 wind generation in 2021 and expects coal to represent about 24 percent of its generation
17 mix in 2021 compared to 39 percent in 2019 and approximately 80 percent in 2002.⁵¹

18 While these developments are important steps in Liberty-Empire’s “Greening the
19 Fleet” plans and net-zero transition, the rate treatment of the retired Asbury plant is an

⁵⁰ Algonquin Power & Utilities Corp., December 14, 2021, Investor Day presentation, at 26.

⁵¹ Moody’s Investors Service, Liberty-Empire District Electric Company (The), Credit Opinion, January 15, 2021, at 4.

1 important consideration for investors. In particular, it is important that Liberty-Empire be
2 allowed to recover a return on and of Asbury in rates, to compensate and return to investors
3 their investments made in the Company. Liberty-Empire is proposing to amortize Asbury's
4 net rate base over 30 years assuming a full return on and recovery of the remaining
5 unrecovered balance. In addition, Liberty-Empire is requesting approval of a tracker for
6 certain costs including decommissioning costs. A result that differs significantly from the
7 Company's proposal, particularly if it includes only a partial recovery of costs or a lower
8 return on capital, would increase the Company's regulatory risk, impacting its cost of
9 equity.

10 **Q. What comment do you have on the Company's cost exposure related to Winter Storm**
11 **Uri?**

12 A. In February 2021, a winter storm event known as Winter Storm Uri brought extreme
13 weather conditions that caused a crisis for utilities that provide electric and natural gas
14 service. Costs that Liberty-Empire incurred related to this event included spot and daily
15 index purchases of supplemental natural gas to fuel generating stations and Southwest
16 Power Pool charges. Liberty-Empire's total costs related to the event were estimated at
17 \$218 million, of which \$6.7 million was allocable to Liberty-Empire's Oklahoma
18 jurisdiction.⁵² A Commission order authorized Liberty-Empire to defer those costs, thus
19 avoiding flowing them more immediately through Liberty-Empire's fuel adjustment
20 mechanism.⁵³ Those costs are to be addressed at a later date. Like the undepreciated

⁵² Cause No. PUD 202100050, Order No. 717356, March 18, 2021, at 2.

⁵³ *Id.*, at 3-4.

1 Asbury plant costs, the degree to which Liberty-Empire is authorized full cost recovery of
2 prudently-incurred costs in a manner that considers the financials integrity of the Company
3 will influence the perceived risk of Liberty-Empire from the investment community's
4 view.

5 **Q. Based on these considerations, what is your conclusion regarding the level of**
6 **regulatory risk for Liberty-Empire relative to that of the proxy group companies?**

7 A. My conclusion is that Liberty-Empire's electric utility business has higher regulatory risk
8 than the proxy group due to the use of a historical test year, which contributes to regulatory
9 lag. In addition, Liberty-Empire does not have protection against volumetric risk through
10 revenue decoupling or weather normalization mechanisms and is not allowed to recover
11 certain capital costs through a tracking mechanism. For these reasons, my conclusion is
12 that Liberty-Empire has higher regulatory risk than the proxy group, which supports an
13 authorized ROE above the proxy group mean and median. The manner in which the
14 Asbury plant and Winter Storm Uri costs are handled from a recovery perspective will also
15 impact the perceived business risk of the Company.

16 **D. FLOTATION COSTS**

17 **Q. What are flotation costs?**

18 A. Flotation costs are the costs associated with the sale of new issues of common stock. These
19 costs include underwriter discounts; audit, legal and listing fees; printing costs; and other
20 direct issuance expenses. Such flotation costs are similar to debt issuance costs in that they
21 are necessary for the issuance of the securities, and they reduce the net proceeds available
22 to the issuing company. As an example, whereas a company's share price at the time of

1 a stock issuance may be \$22.00, if flotation costs are equal to \$0.50 per share, the Company
2 will receive only \$21.50 per share. In order to compensate investors for the return they
3 require (implied by the \$22.00 price at the time of the issuance), the enterprise must earn a
4 higher ROE on the reduced proceeds.

5 **Q. Should flotation costs be considered when setting the allowed ROE?**

6 A. Yes. Flotation costs are not expenses that flow through the income statement, but instead
7 reduce the proceeds of the securities issuances, resulting in a permanent net reduction to
8 the common equity portion of the balance sheet. As a result, flotation costs should be
9 recovered through a return adjustment, regardless of whether an issuance occurs during, or
10 is planned for, the test year. Recovery of investments is not limited to the year in which
11 the investment is made, and neither should the recovery of legitimately incurred, direct
12 flotation costs. According to Dr. Shannon Pratt:

13 Flotation costs occur when new issues of stock or debt are sold to the
14 public. The firm usually incurs several kinds of flotation or transaction
15 costs, which reduce the actual proceeds received by the firm. Some of
16 these are direct out-of-pocket outlays, such as fees paid to underwriters,
17 legal expenses, and prospectus preparation costs. Because of this
18 reduction in proceeds, the firm's required returns on these proceeds
19 equate to a higher return to compensate for the additional costs.
20 Flotation costs can be accounted for either by amortizing the cost, thus
21 reducing the cash flow to discount, or by incorporating the cost into the
22 cost of capital. Because flotation costs are not typically applied to
23 operating cash flow, one must incorporate them into the cost of capital.⁵⁴

24 In addition, in order to attract and retain new investors, a regulated utility must have
25 the opportunity to earn a return that is both competitive and compensatory. To the extent

⁵⁴ Shannon P. Pratt, Cost of Capital Estimation and Applications, Second Edition, at 220-221.

1 that a company is denied the opportunity to recover prudently incurred flotation costs,
2 actual returns will fall short of expected (or required) returns, thereby diminishing the
3 company's ability to attract adequate capital on reasonable terms.

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

5 A. Flotation costs are part of the invested cost of the utility, which are reflected on the balance
6 sheet under "paid in capital." As a result, the great majority of a utility's flotation costs is
7 incurred prior to the test year, but remain part of the cost structure that exists during the
8 test year and beyond, and as such, should be recognized for ratemaking purposes.
9 Therefore, this adjustment is appropriate even if no new issuances are planned in the near
10 future because failure to allow such an adjustment may deny the Company the opportunity
11 to earn its required rate of return in the future.

12 **Q. Is the need to consider flotation costs eliminated because the company is a subsidiary**
13 **of APUC?**

14 A. No. Although the Company is a subsidiary of APUC, it is appropriate to consider flotation
15 costs because the source of capital used by the Company was the result of a public issuance
16 by its parent organization, which led to the issuance costs. To deny recovery of issuance
17 costs associated with the capital that is invested in the utility ultimately will penalize the
18 investors that fund the utility operations and will inhibit the utility's ability to obtain new
19 equity capital at a reasonable cost.

1 **Q. Does the DCF model already incorporate investor expectations of a return that**
2 **compensates for flotation costs?**

3 A. No. All the models used to estimate the appropriate ROE assume no “friction” or
4 transaction costs, as these costs are not reflected in the market price (in the case of the DCF
5 model). Therefore, it is appropriate to consider flotation costs when estimating the
6 Company’s ROE.

7 **Q. Have you calculated the effect of flotation costs on the ROE?**

8 A. Yes, I have. I modified the DCF calculation to provide a dividend yield that would
9 reimburse investors for issuance costs. Based on the issuance costs provided in Direct
10 Exhibit DSD-11, an adjustment of 0.08 percent (i.e., 8 basis points) is reflective of flotation
11 costs for the Company.

12 **Q. Are you proposing to directly increase your recommended roe by 8 basis points to**
13 **account for flotation costs?**

14 A. No. I did consider flotation costs, however, as well as the other factors discussed above,
15 in determining where Liberty-Empire ROE’s reasonably falls within the range of results.

16 **VIII. CAPITAL STRUCTURE AND COST OF DEBT**

17 **Q. What is Liberty-Empire’s proposed capital structure?**

18 A. As discussed in the Direct Testimony of Charlotte T. Emery, Liberty-Empire is proposing
19 to establish a rate-making consolidated capital structure comprised of 52.79 percent

1 common equity and 47.21 percent long-term debt based on its per books capital⁵⁵ structure
2 for the test year ending June 30, 2021.

3 **Q. What is the relationship between the authorized equity ratio and the authorized**
4 **ROE?**

5 A. There is a direct relationship between the authorized capital structure and the authorized
6 ROE. In particular, the authorized equity ratio is a major indicator of financial risk for a
7 regulated utility such as Liberty-Empire. To the extent the authorized equity ratio is
8 reduced from 52.79 percent, a corresponding increase is necessary in the authorized ROE
9 to compensate investors for the greater financial risk associated with a lower equity ratio.

10 **Q. Have you analyzed the capital structures of the proxy group companies?**

11 A. Yes. I calculated the mean proportions of common equity and long-term debt over the
12 most recent eight quarters for each of the proxy group companies at the utility operating
13 company level. My analysis of the proxy group's utility operating company capital
14 structures is provided in Direct Exhibit DSD-12. As shown in that Schedule, the equity
15 ratios for the proxy group have averaged 53.18 percent over the last eight quarters. The
16 average equity ratios for the proxy group range from 46.90 percent to 61.11 percent, not
17 including the effect of off-balance sheet transactions that may be imputed as debt and may
18 affect the investment community's perception of a company's leverage. Liberty-Empire's
19 proposed equity ratio of 52.79 percent is slightly below the average for the proxy group
20 companies.

⁵⁵ Excluding Liberty-Empire's non-controlling interest in the Company's investment in the WindHoldCo Company.

1 **Q. What is your conclusion regarding Liberty-Empire's proposed capital structure?**

2 A. The proposed equity ratio for Liberty-Empire is within the range established by the proxy
3 group and below the average for the operating utilities held by the proxy group companies.
4 As such, my conclusion is that the Company's proposed consolidated capital structure is
5 reasonable and appropriate for ratemaking purposes.

6 **Q. What is the Company's cost of debt?**

7 A. As shown in Schedule WP F-3 of the Minimum Filing Requirements, the Company's cost
8 of debt is 3.76 percent.

9 **Q. Have you assessed the Company's cost of debt relative to other electric utilities?**

10 A. Yes, I calculated the embedded cost of debt for authorized electric utility returns from
11 January 1, 2020, through January 31, 2022. The mean embedded cost of debt over that
12 period was 4.48 percent, and the median was 4.39 percent. Further, I reviewed recent
13 yields on utility debt as measured by the Moody's Baa-rated utility bond index, which
14 averaged 3.32% for the 180 days ending January 31, 2022. Based on that review, I believe
15 the Company's 3.76 percent cost of debt is reasonable and appropriate.

16 **IX. CONCLUSION**

17 **Q. Please summarize your cost of capital recommendations.**

18 A. Based on the various quantitative and qualitative factors discussed herein, I find that
19 reasonable range of ROE results for Liberty-Empire is from 9.50 percent to 10.40 percent.
20 This range reflects several well-accepted methodologies for estimating ROE, recently
21 authorized ROEs for other vertically integrated electric utilities, prevailing and expected
22 capital market conditions, and Liberty-Empire's business risk profile relative to its peers.

1 Within that range, I recommend that the Commission authorize the Company the
2 opportunity to earn an ROE of 10.00 percent. Figure 22 below summarizes the ROE model
3 results that informed my recommendation.

4 In addition, I conclude that Company's proposed capital structure of 52.79 percent
5 common equity and 47.21 percent long-term debt is reasonable and within the range of the
6 capital structures maintained by the operating utilities held by the proxy group companies.

1

Figure 22: Summary of Cost of Capital Analyses

Median DCF Results (90-Day)			
	Low	Mean	High
Constant Growth	8.54%	9.32%	10.37%
Capital Asset Pricing Model (Subset of S&P 500 Companies)			
	Current Risk-Free Rate	2022-23 Projected Risk-Free Rate	2023-2027 Projected Risk-Free Rate
Value Line Betas	11.57%	11.63%	11.73%
Bloomberg Betas	10.79%	10.89%	11.05%
Capital Asset Pricing Model (Historical Market Return)			
	Current Risk-Free Rate	2022-23 Projected Risk-Free Rate	2023-2027 Projected Risk-Free Rate
Value Line Betas	10.94%	11.00%	11.10%
Bloomberg Betas	10.21%	10.32%	10.47%
Risk Premium			
	Current Risk-Free Rate	2022-23 Projected Risk-Free Rate	2023-2027 Projected Risk-Free Rate
Risk Premium Results	9.54%	9.78%	10.13%
Expected Earnings			
Average	10.78%		
Median	10.93%		

2 Q. Does this conclude your Direct Testimony?

3 A. Yes.

**DANIEL S. DANE, CPA**

Senior Vice President

Daniel S. Dane has 20 years of experience in the energy, utility, and financial services industries providing advisory services to power companies, natural gas pipelines, local gas distribution companies, and water utilities in the areas of regulation and ratemaking, litigation support, mergers and acquisitions, valuation, financial statement audits and analysis, and the examination of financial reporting systems and controls. Mr. Dane has provided expert testimony in utility merger approval proceedings related to the financial implications of utility transactions. Mr. Dane has also testified and provided expert reports on regulated ratemaking and utility performance matters for investor- and provincially-owned utilities, including on the cost of capital and capital structure, revenue requirements, lead-lag studies/cash working capital, and utility productivity and benchmarking. Mr. Dane has an MBA from Boston College in Chestnut Hill, Massachusetts, and a BA in Economics from Colgate University in Hamilton, New York. Mr. Dane is a certified public accountant, and is a licensed securities professional (Series 7, 28, 63, 79, and 99). Mr. Dane also serves as the Financial and Operations Principal of CE Capital Advisors, a FINRA-Member firm and a subsidiary of Concentric.

PROFESSIONAL HISTORY**Concentric Energy Advisors, Inc. (2004 – Present)****CE Capital Advisors, Inc.**

Senior Vice President (Concentric/CE Capital)

Financial and Operations Principal (CE Capital)

Ernst & Young (2000 – 2001, 2003 – 2004)

Audit and Assurance Services; Sales and Marketing

ZIA Information Analysis Group (1997 – 2000)

Litigation Support

EDUCATION**Boston College**

M.B.A., 2003

Colgate University

B.A., Economics, 1996



REPRESENTATIVE PROJECT EXPERIENCE

Ratemaking and Utility Regulation Assignments

Expert Testimony

- Submitted expert testimony on behalf of utilities and other stakeholders in state and provincial administrative rate setting and merger approval proceedings regarding cost of capital, merger impacts, revenue requirements, lead-lag studies/cash working capital, regulatory lag and rate base development.

Regulatory Advisory and Support

- Provided financial modeling, development of expert reports, and preparation of multiple rounds of testimony on behalf of U.S. and Canadian investor-owned electric, natural gas, and water utilities related to multiple aspects of the ratemaking process, including: cost of capital; ring fencing; revenue requirements and lead-lag studies/cash working capital; decoupling; prudence and cost recovery; capital tracker tariff mechanisms; cost allocation and shared services; merger approval; regulatory lag; and ratemaking policy.
- Consulting assignments have included utility clients across the U.S. and Canada.

Financial Advisory Assignments

Buy- and Sell-Side Transaction Advisory and Support

- Sell-side support for approximately \$2 billion in generating asset transactions, including nuclear, natural gas, and coal generating facilities.
- Buy-side due diligence support for U.S., Canadian, and international investors in electric and natural gas LDC utility operations, wind generation, natural gas pipeline facilities, and water/wastewater utilities.
- Regulatory policy, ring-fencing, and merger impacts advisory services provided to U.S. and Canadian investor-owned utilities.

Valuation Services

- Developed Fairness Opinions issued by CE Capital Advisors, Inc. to Boards of Directors of companies entering into asset purchases and sales. Led valuation modeling on multiple energy-related valuation assignments using the Income Approach, Cost Approach, and Sales Comparison Approach.

Litigation Advisory Assignments

Prepared economic and valuation analyses and expert reports in proceedings related to contract disputes, takings claims, and bankruptcy proceedings. Clients include international diversified energy companies, regulated utilities, and bondholders.



Management and Operations Consulting Assignments

Performed prudence reviews, including contracting strategy reviews and assessments of project controls and oversight for developers of nuclear-generating capacity uprates and new nuclear facilities.

Performed operations and financial performance benchmarking and studies of productivity programs.

DESIGNATIONS AND PROFESSIONAL AFFILIATIONS

Certified Public Accountant, 2004

Massachusetts Society of Certified Public Accountants, 2004

American Institute of Certified Public Accountants, 2011

CERTIFICATIONS

Licensed Securities Professional: NASD Series 7, 28, 63, 79 and 99 Licenses

PRESENTATIONS

“Regulatory Treatment of Timing Differences Related to Pension and OPEB Costs.” Presented to the Ontario Energy Board, July 2016 (Docket No. EB-2015-0040).

“Financial Management and Capital Markets.” University of Idaho Utility Executive Course, 2018.

“Increasing Shareholder Value through the Capital Markets.” University of Idaho Utility Executive Course, 2015, 2016 and 2017.

“A Comparative Analysis of Return on Equity of Natural Gas Utilities” (with Jim Coyne and Julie Lieberman), presented to the Ontario Energy Association, June 2007.



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Connecticut Public Utilities Regulatory Authority				
SJW Group and Connecticut Water Service, Inc.	4/19	Application of SJW Group and Connecticut Water Service, Inc. for Approval of Change of Control	Docket No. 19-04-02	Merger Impacts Cost of Debt and Credit Quality
SJW Group and Connecticut Water Service, Inc.	12/18	Application of SJW Group and Connecticut Water Service, Inc. for Approval of Change of Control	Docket No. 18-07-10	Merger Impacts Cost of Debt and Credit Quality
Connecticut Natural Gas Corporation	06/18	Connecticut Natural Gas Corporation	Docket No. 18-05-16	Lead-Lag Study Cash Working Capital
The Southern Connecticut Gas Company	06/17	The Southern Connecticut Gas Company	Docket No. 17-05-42	Lead-Lag Study Cash Working Capital
The United Illuminating Company	07/16	The United Illuminating Company	Docket No. 16-06-04	Lead-lag Study Cash Working Capital
Illinois Commerce Commission				
The Ameren Illinois Utilities	07/10	Central Illinois Light Company; Central Illinois Public Service Company; Illinois Power Company	Docket Nos. 09-0306 thru 09-0311 (cons.)	Rate Base Adjustments Earnings Attrition
Maine Public Utilities Commission				
The Maine Water Company	07/19	Application for Approval of Reorganization Pursuant to 35-A M.R.S. § 708	Docket No. 2019-00096	Merger Impacts, Customer Benefits, Public Interest
Massachusetts Department of Public Utilities				
National Grid	11/20	Boston Gas Company and Colonial Gas Company (each d/b/a National Grid)	D.P.U. 20-120	Revenue Requirement Lead-lag Study Cash Working Capital
The Berkshire Gas Company	05/18	The Berkshire Gas Company	D.P.U. 18-40	Revenue Requirement
National Grid	04/18	Boston Gas Company and Colonial Gas Company (each d/b/a National Grid)	D.P.U. 17-170	Impact of the Tax Cuts and Jobs Act of 2017; Administrative and General Expense Allocations
National Grid	11/17	Boston Gas Company and Colonial Gas Company (each d/b/a National Grid)	D.P.U. 17-170	Revenue Requirement Lead-lag Study Cash Working Capital
New Hampshire Public Utilities Commission				



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Liberty Utilities (EnergyNorth Natural Gas) Corp.	04/17	Liberty Utilities (EnergyNorth Natural Gas) Corp.	Docket No. DG 17-048	Temporary Rates
Liberty Utilities (EnergyNorth Natural Gas) Corp.	04/17	Liberty Utilities (EnergyNorth Natural Gas) Corp.	Docket No. DG 17-048	Revenue Requirement
New Mexico Public Regulation Commission				
El Paso Electric Company	05/20	El Paso Electric Company	Case No. 20-00104-UT	Lead-lag Study Cash Working Capital
Public Utility Commission of Texas				
El Paso Electric Company	06/21	El Paso Electric Company	Docket No. 52195	Lead-lag Study Cash Working Capital
El Paso Electric Company	02/17	El Paso Electric Company	Docket No. 46831	Lead-lag Study Cash Working Capital
Regulatory Commission of Alaska				
Golden Heart Utilities, Inc. and College Utilities Corporation	08/21	Golden Heart Utilities, Inc. and College Utilities Corporation	U-21-070 U-21-071	Lead-lag Study Cash Working Capital
Rhode Island Division of Public Utilities and Carriers				
PPL Corp.	11/21	Petition for Authority to Transfer Ownership of The Narragansett Electric Company to PPL Rhode Island Holdings, LLC and Related Approvals	Docket No. D-21-09	Merger Impacts
South Dakota Public Service Commission				
Northern States Power Company-MN	06/11	Northern States Power Company-MN	EL 11-019	Return on Equity
Vermont Public Utility Commission				



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Vermont Department of Public Service	08/17	Joint Petition of NorthStar Decommissioning Holdings, LLC, NorthStar Nuclear Decommissioning Company, LLC, NorthStar Group Services, Inc., LVI Parent Corp., NorthStar Group Holdings, LLC, Entergy Nuclear Vermont Investment Company, LLC, and Entergy Nuclear Operations, Inc., to transfer ownership of Entergy Nuclear Vermont Yankee, LLC, and for certain ancillary approvals, pursuant to 30 V.S.A. §§ 107, 231, and 232	Docket No. 8880	Nuclear Facility Transfer Financial Capability and Credit Quality
Ontario Energy Board				
Hydro One Networks Inc.	08/21	Hydro One Networks Inc.	EB 2021-0110	Productivity Framework Review
Ontario Power Generation	12/20	Ontario Power Generation	EB 2020-0290	Cost of Capital: Equity Thickness
Ontario Power Generation	05/16	Ontario Power Generation	EB 2016-0152	Cost of Capital: Equity Thickness
Nova Scotia Utility and Review Board				
Nova Scotia Power Incorporated	01/22	Nova Scotia Power Incorporated	NSP Power 2022-2024 General Rate Application	Earning Sharing Mechanism Regulatory Adjustment Mechanisms

ROE ANALYSES RESULTS

Constant Growth DCF			
	Median Low	Median	Median High
30-Day Average	8.43%	9.24%	10.21%
90-Day Average	8.54%	9.32%	10.37%
180-Day Average	8.52%	9.49%	10.43%
Capital Asset Pricing Model (Subset of S&P 500 Companies)			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.57%	11.63%	11.73%
Bloomberg Beta	10.79%	10.89%	11.05%
Capital Asset Pricing Model (Historical Market Return)			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	10.94%	11.00%	11.10%
Bloomberg Beta	10.21%	10.32%	10.47%
Expected Earnings			
Average	10.78%		
Median	10.93%		
Treasury Yield Plus Risk Premium			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Risk Premium	9.54%	9.78%	10.13%

PROXY GROUP SCREENING DATA AND RESULTS

	[1]	[2]	[3]	[4]	[6]	[7]	[8]	[9]	
Company	Ticker	Dividends	S&P Credit Rating Between BBB- and AAA	Covered by More Than 1 Analyst	Generation	Positive Growth Rates From At Least 2 Sources	% Regulated Operating Income of Total Income > 60%	Regulated Electric Income of Total Regulated Income > 80%	Announced Merger
ALLETE, Inc.	ALE	Yes	BBB	Yes	Yes	Yes	88.66%	97.38%	No
Alliant Energy Corporation	LNT	Yes	A-	Yes	Yes	Yes	96.26%	90.75%	No
Ameren Corporation	AEE	Yes	BBB+	Yes	Yes	Yes	100.00%	86.49%	No
American Electric Power Company, Inc.	AEP	Yes	A-	Yes	Yes	Yes	97.16%	100.00%	No
Duke Energy Corporation	DUK	Yes	BBB+	Yes	Yes	Yes	99.36%	91.26%	No
Edison International	EIX	Yes	BBB	Yes	Yes	Yes	90.12%	100.00%	No
Entergy Corporation	ETR	Yes	BBB+	Yes	Yes	Yes	100.00%	99.09%	No
Evergy, Inc.	EVRG	Yes	A-	Yes	Yes	Yes	100.00%	100.00%	No
Hawaiian Electric Industries, Inc.	HE	Yes	BBB-	Yes	Yes	Yes	77.21%	100.00%	No
IDACORP, Inc.	IDA	Yes	BBB	Yes	Yes	Yes	99.66%	100.00%	No
NextEra Energy, Inc.	NEE	Yes	A-	Yes	Yes	Yes	75.63%	100.00%	No
NorthWestern Corporation	NWE	Yes	BBB	Yes	Yes	Yes	99.75%	83.44%	No
Otter Tail Corporation	OTTR	Yes	BBB	Yes	Yes	Yes	71.14%	100.00%	No
Pinnacle West Capital Corporation	PNW	Yes	BBB+	Yes	Yes	Yes	100.00%	100.00%	No
Portland General Electric Company	POR	Yes	BBB+	Yes	Yes	Yes	100.00%	100.00%	No
Southern Company	SO	Yes	BBB+	Yes	Yes	Yes	86.98%	82.21%	No
Xcel Energy Inc.	XEL	Yes	A-	Yes	Yes	Yes	100.00%	86.71%	No
Mean							93.1%	95.1%	

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: SNL Financial
- [3] Source: Yahoo! Finance and Zacks
- [4] Source: Form 10-K from 2020
- [5] Source: Yahoo! Finance, Value Line Investment Survey, and Zacks
- [6] Source: SNL Financial
- [7] - [8] Source: Form 10-Ks for 2018, 2019 & 2020, three-year average
- [9] SNL Financial News Releases

30-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
ALLETE, Inc.	ALE	\$2.52	\$65.05	3.87%	3.98%	5.00%	5.67%	6.00%	5.56%	8.97%	9.54%	9.99%
Alliant Energy Corporation	LNT	\$1.71	\$60.03	2.85%	2.93%	5.50%	6.10%	6.10%	5.90%	8.43%	8.83%	9.04%
Ameren Corporation	AEE	\$2.20	\$87.63	2.51%	2.60%	6.50%	7.90%	7.50%	7.30%	9.09%	9.90%	10.51%
American Electric Power Company, Inc.	AEP	\$3.12	\$89.06	3.50%	3.61%	6.50%	5.70%	5.60%	5.93%	9.20%	9.54%	10.12%
Duke Energy Corporation	DUK	\$3.94	\$103.52	3.81%	3.91%	7.00%	3.70%	5.30%	5.33%	7.58%	9.24%	10.94%
Edison International	EIX	\$2.80	\$65.13	4.30%	4.40%	NMF	5.80%	3.70%	4.75%	8.08%	9.15%	10.22%
Entergy Corporation	ETR	\$4.04	\$110.35	3.66%	3.72%	3.00%	6.00%	1.00%	3.33%	4.68%	7.06%	9.77%
Evergy, Inc.	EVRG	\$2.29	\$66.20	3.46%	3.57%	8.00%	5.12%	6.10%	6.41%	8.67%	9.98%	11.60%
Hawaiian Electric Industries, Inc.	HE	\$1.36	\$41.64	3.27%	3.33%	3.00%	1.30%	7.30%	3.87%	4.59%	7.20%	10.69%
IDACORP, Inc.	IDA	\$3.00	\$110.42	2.72%	2.77%	4.00%	4.40%	4.40%	4.27%	6.77%	7.04%	7.18%
NextEra Energy, Inc.	NEE	\$1.54	\$85.45	1.80%	1.89%	10.50%	9.17%	8.80%	9.49%	10.68%	11.38%	12.40%
NorthWestern Corporation	NWE	\$2.48	\$56.95	4.36%	4.43%	2.00%	4.50%	4.10%	3.53%	6.40%	7.97%	8.95%
Otter Tail Corporation	OTTR	\$1.56	\$66.07	2.36%	2.45%	8.00%	9.00%	4.70%	7.23%	7.12%	9.68%	11.47%
Pinnacle West Capital Corporation	PNW	\$3.40	\$69.98	4.86%	4.92%	Nil	0.10%	5.00%	2.55%	4.96%	7.47%	9.98%
Portland General Electric Company	POR	\$1.72	\$52.42	3.28%	3.41%	7.00%	7.15%	8.60%	7.58%	10.40%	10.99%	12.02%
Southern Company	SO	\$2.64	\$67.86	3.89%	4.00%	6.00%	6.20%	4.90%	5.70%	8.89%	9.70%	10.21%
Xcel Energy Inc.	XEL	\$1.83	\$68.15	2.69%	2.77%	6.00%	6.90%	6.40%	6.43%	8.77%	9.21%	9.68%
PROXY GROUP MEAN				3.36%	3.45%	5.87%	5.57%	5.62%	5.60%	7.84%	9.05%	10.28%
PROXY GROUP MEDIAN										8.43%	9.24%	10.21%

Notes

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 30-day average as of January 31, 2022

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.50 x [8])

[5] Source: Value Line

[6] Source: Yahoo! Finance

[7] Source: Zacks

[8] Equals Average ([5], [6], [7])

[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))

[10] Equals [4] + [8]

[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))

90-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
ALLETE, Inc.	ALE	\$2.52	\$62.98	4.00%	4.11%	5.00%	5.67%	6.00%	5.56%	9.10%	9.67%	10.12%
Alliant Energy Corporation	LNT	\$1.71	\$57.82	2.96%	3.04%	5.50%	6.10%	6.10%	5.90%	8.54%	8.94%	9.15%
Ameren Corporation	AEE	\$2.20	\$85.38	2.58%	2.67%	6.50%	7.90%	7.50%	7.30%	9.16%	9.97%	10.58%
American Electric Power Company, Inc.	AEP	\$3.12	\$85.39	3.65%	3.76%	6.50%	5.70%	5.60%	5.93%	9.36%	9.70%	10.27%
Duke Energy Corporation	DUK	\$3.94	\$101.59	3.88%	3.98%	7.00%	3.70%	5.30%	5.33%	7.65%	9.32%	11.01%
Edison International	EIX	\$2.80	\$63.08	4.44%	4.54%	NMF	5.80%	3.70%	4.75%	8.22%	9.29%	10.37%
Entergy Corporation	ETR	\$4.04	\$105.86	3.82%	3.88%	3.00%	6.00%	1.00%	3.33%	4.84%	7.21%	9.93%
Evergy, Inc.	EVRG	\$2.29	\$64.99	3.52%	3.64%	8.00%	5.12%	6.10%	6.41%	8.73%	10.04%	11.66%
Hawaiian Electric Industries, Inc.	HE	\$1.36	\$40.94	3.32%	3.39%	3.00%	1.30%	7.30%	3.87%	4.64%	7.25%	10.74%
IDACORP, Inc.	IDA	\$3.00	\$107.12	2.80%	2.86%	4.00%	4.40%	4.40%	4.27%	6.86%	7.13%	7.26%
NextEra Energy, Inc.	NEE	\$1.54	\$85.06	1.81%	1.90%	10.50%	9.17%	8.80%	9.49%	10.69%	11.39%	12.41%
NorthWestern Corporation	NWE	\$2.48	\$57.07	4.35%	4.42%	2.00%	4.50%	4.10%	3.53%	6.39%	7.96%	8.94%
Otter Tail Corporation	OTTR	\$1.56	\$64.02	2.44%	2.53%	8.00%	9.00%	4.70%	7.23%	7.19%	9.76%	11.55%
Pinnacle West Capital Corporation	PNW	\$3.40	\$68.24	4.98%	5.05%	Nil	0.10%	5.00%	2.55%	5.09%	7.60%	10.11%
Portland General Electric Company	POR	\$1.72	\$50.36	3.42%	3.54%	7.00%	7.15%	8.60%	7.58%	10.53%	11.13%	12.16%
Southern Company	SO	\$2.64	\$64.65	4.08%	4.20%	6.00%	6.20%	4.90%	5.70%	9.08%	9.90%	10.41%
Xcel Energy Inc.	XEL	\$1.83	\$65.77	2.78%	2.87%	6.00%	6.90%	6.40%	6.43%	8.87%	9.31%	9.78%
PROXY GROUP MEAN				3.46%	3.55%	5.87%	5.57%	5.62%	5.60%	7.94%	9.15%	10.38%
PROXY GROUP MEDIAN										8.54%	9.32%	10.37%

Notes

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 90-day average as of January 31, 2022
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))

180-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
ALLETE, Inc.	ALE	\$2.52	\$65.87	3.83%	3.93%	5.00%	5.67%	6.00%	5.56%	8.92%	9.49%	9.94%
Alliant Energy Corporation	LNT	\$1.71	\$58.26	2.94%	3.02%	5.50%	6.10%	6.10%	5.90%	8.52%	8.92%	9.12%
Ameren Corporation	AEE	\$2.20	\$85.20	2.58%	2.68%	6.50%	7.90%	7.50%	7.30%	9.17%	9.98%	10.58%
American Electric Power Company, Inc.	AEP	\$3.12	\$86.10	3.62%	3.73%	6.50%	5.70%	5.60%	5.93%	9.33%	9.66%	10.24%
Duke Energy Corporation	DUK	\$3.94	\$102.30	3.85%	3.95%	7.00%	3.70%	5.30%	5.33%	7.62%	9.29%	10.99%
Edison International	EIX	\$2.80	\$60.14	4.66%	4.77%	NMF	5.80%	3.70%	4.75%	8.44%	9.52%	10.59%
Entergy Corporation	ETR	\$4.04	\$106.34	3.80%	3.86%	3.00%	6.00%	1.00%	3.33%	4.82%	7.20%	9.91%
Evergy, Inc.	EVRG	\$2.29	\$64.81	3.53%	3.65%	8.00%	5.12%	6.10%	6.41%	8.74%	10.05%	11.67%
Hawaiian Electric Industries, Inc.	HE	\$1.36	\$42.06	3.23%	3.30%	3.00%	1.30%	7.30%	3.87%	4.55%	7.16%	10.65%
IDACORP, Inc.	IDA	\$3.00	\$104.93	2.86%	2.92%	4.00%	4.40%	4.40%	4.27%	6.92%	7.19%	7.32%
NextEra Energy, Inc.	NEE	\$1.54	\$81.60	1.89%	1.98%	10.50%	9.17%	8.80%	9.49%	10.77%	11.47%	12.49%
NorthWestern Corporation	NWE	\$2.48	\$59.87	4.14%	4.22%	2.00%	4.50%	4.10%	3.53%	6.18%	7.75%	8.74%
Otter Tail Corporation	OTTR	\$1.56	\$57.59	2.71%	2.81%	8.00%	9.00%	4.70%	7.23%	7.47%	10.04%	11.83%
Pinnacle West Capital Corporation	PNW	\$3.40	\$75.00	4.53%	4.59%	Nil	0.10%	5.00%	2.55%	4.64%	7.14%	9.65%
Portland General Electric Company	POR	\$1.72	\$49.70	3.46%	3.59%	7.00%	7.15%	8.60%	7.58%	10.58%	11.18%	12.21%
Southern Company	SO	\$2.64	\$64.37	4.10%	4.22%	6.00%	6.20%	4.90%	5.70%	9.10%	9.92%	10.43%
Xcel Energy Inc.	XEL	\$1.83	\$67.11	2.73%	2.81%	6.00%	6.90%	6.40%	6.43%	8.81%	9.25%	9.72%
PROXY GROUP MEAN				3.44%	3.53%	5.87%	5.57%	5.62%	5.60%	7.92%	9.13%	10.36%
PROXY GROUP MEDIAN										8.52%	9.49%	10.43%

Notes

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 180-day average as of January 31, 2022

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.50 x [8])

[5] Source: Value Line

[6] Source: Yahoo! Finance

[7] Source: Zacks

[8] Equals Average ([5], [6], [7])

[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))

[10] Equals [4] + [8]

[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))

MARKET RISK PREMIUM DERIVED FROM S&P 500 DIVIDEND YIELD

[1] Estimate of the S&P 500 Dividend Yield	1.40%
[2] Estimate of the S&P 500 Growth Rate	13.66%
[3] S&P 500 Estimated Required Market Return	15.16%

Notes:

- [1] Sum of [6]
 [2] Sum of [8]
 [3] Equals $([1] \times (1 + 0.5 \times [2])) + [2]$

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4] Weight in Index	[5] Current Dividend Yield	[6] Cap-Weighted Dividend Yield	[7] Value Line Long-Term Growth Est.	[8] Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	0.09%	4.67%	0.00%	8.00%	0.01%
Signature Bank/New York NY	SBNY	0.05%	0.74%	0.00%	12.00%	0.01%
American Express Co	AXP	0.38%	0.96%	0.00%	12.00%	0.05%
Verizon Communications Inc	VZ	0.61%	4.81%	0.03%	2.50%	0.02%
Broadcom Inc	AVGO	0.66%	2.80%	0.02%	27.00%	0.18%
Boeing Co/The	BA	0.00%	n/a	n/a		0.00%
Caterpillar Inc	CAT	0.30%	2.20%	0.01%	9.50%	0.03%
JPMorgan Chase & Co	JPM	1.21%	2.69%	0.03%	7.50%	0.09%
Chevron Corp	CVX	0.70%	4.32%	0.03%	24.00%	0.17%
Coca-Cola Co/The	KO	0.72%	2.75%	0.02%	7.00%	0.05%
AbbVie Inc	ABBV	0.66%	4.12%	0.03%	6.50%	0.04%
Walt Disney Co/The	DIS	0.72%	n/a	n/a	37.50%	0.27%
FleetCor Technologies Inc	FLT	0.05%	n/a	n/a	11.00%	0.01%
Extra Space Storage Inc	EXR	0.07%	2.52%	0.00%	5.50%	0.00%
Exxon Mobil Corp	XOM	0.00%	4.63%	0.00%		0.00%
Phillips 66	PSX	0.10%	4.34%	0.00%	20.00%	0.02%
General Electric Co	GE	0.29%	0.34%	0.00%	15.00%	0.04%
HP Inc	HPQ	0.11%	2.72%	0.00%	15.50%	0.02%
Home Depot Inc/The	HD	1.05%	1.80%	0.02%	11.00%	0.12%
Monolithic Power Systems Inc	MPWR	0.05%	0.60%	0.00%	20.50%	0.01%
International Business Machines Corp	IBM	0.33%	4.91%	0.02%	0.50%	0.00%
Johnson & Johnson	JNJ	1.25%	2.46%	0.03%	10.00%	0.12%
McDonald's Corp	MCD	0.53%	2.13%	0.01%	10.50%	0.06%
Merck & Co Inc	MRK	0.57%	3.39%	0.02%	7.50%	0.04%
3M Co	MMM	0.26%	3.57%	0.01%	6.00%	0.02%
American Water Works Co Inc	AWK	0.08%	1.50%	0.00%	8.50%	0.01%
Bank of America Corp	BAC	1.02%	1.82%	0.02%	7.50%	0.08%
Pfizer Inc	PFE	0.81%	3.04%	0.02%	11.50%	0.09%
Procter & Gamble Co/The	PG	1.06%	2.17%	0.02%	7.00%	0.07%
AT&T Inc	T	0.50%	8.16%	0.04%	1.50%	0.01%
Travelers Cos Inc/The	TRV	0.11%	2.12%	0.00%	8.00%	0.01%
Raytheon Technologies Corp	RTX	0.37%	2.26%	0.01%	1.50%	0.01%
Analog Devices Inc	ADI	0.24%	1.68%	0.00%	11.00%	0.03%
Walmart Inc	WMT	1.07%	1.57%	0.02%	7.50%	0.08%
Cisco Systems Inc/Delaware	CSCO	0.65%	2.66%	0.02%	7.00%	0.05%
Intel Corp	INTC	0.55%	2.99%	0.02%	7.00%	0.04%
General Motors Co	GM	0.21%	n/a	n/a	12.00%	0.03%
Microsoft Corp	MSFT	6.41%	0.80%	0.05%	17.50%	1.12%
Dollar General Corp	DG	0.13%	0.81%	0.00%	10.50%	0.01%
Cigna Corp	CI	0.21%	1.74%	0.00%	10.00%	0.02%
Kinder Morgan Inc	KMI	0.11%	6.22%	0.01%	19.00%	0.02%
Citigroup Inc	C	0.36%	3.13%	0.01%	7.00%	0.02%
American International Group Inc	AIG	0.13%	2.22%	0.00%	31.50%	0.04%
Altria Group Inc	MO	0.26%	7.08%	0.02%	5.50%	0.01%
HCA Healthcare Inc	HCA	0.21%	0.93%	0.00%	13.50%	0.03%
Under Armour Inc	UA	0.01%	n/a	n/a	33.00%	0.00%
International Paper Co	IP	0.05%	3.83%	0.00%	12.00%	0.01%
Hewlett Packard Enterprise Co	HPE	0.06%	2.94%	0.00%	6.50%	0.00%
Abbott Laboratories	ABT	0.62%	1.47%	0.01%	11.50%	0.07%
Aflac Inc	AFL	0.11%	2.55%	0.00%	11.00%	0.01%
Air Products and Chemicals Inc	APD	0.17%	2.13%	0.00%	12.00%	0.02%
Royal Caribbean Cruises Ltd	RCL	0.00%	n/a	n/a		0.00%
Hess Corp	HES	0.00%	1.08%	0.00%		0.00%
Archer-Daniels-Midland Co	ADM	0.12%	2.13%	0.00%	12.50%	0.01%
Automatic Data Processing Inc	ADP	0.24%	2.02%	0.00%	9.00%	0.02%
Verisk Analytics Inc	VRSK	0.09%	0.59%	0.00%	11.50%	0.01%
AutoZone Inc	AZO	0.11%	n/a	n/a	16.50%	0.02%
Avery Dennison Corp	AVY	0.05%	1.32%	0.00%	9.00%	0.00%
Enphase Energy Inc	ENPH	0.05%	n/a	n/a	40.00%	0.02%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]
		Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
MSCI Inc	MSCI	0.12%	0.78%	0.00%	16.00%	0.02%
Ball Corp	BLL	0.09%	0.82%	0.00%	21.00%	0.02%
Ceridian HCM Holding Inc	CDAY	0.00%	n/a	n/a		0.00%
Carrier Global Corp	CARR	0.00%	1.26%	0.00%		0.00%
Bank of New York Mellon Corp/The	BK	0.13%	2.29%	0.00%	5.00%	0.01%
Otis Worldwide Corp	OTIS	0.00%	1.12%	0.00%		0.00%
Baxter International Inc	BAX	0.12%	1.31%	0.00%	8.50%	0.01%
Becton Dickinson and Co	BDX	0.20%	1.37%	0.00%	7.50%	0.01%
Berkshire Hathaway Inc	BRK/B	1.12%	n/a	n/a	6.00%	0.07%
Best Buy Co Inc	BBY	0.07%	2.82%	0.00%	8.50%	0.01%
Boston Scientific Corp	BSX	0.17%	n/a	n/a	17.50%	0.03%
Bristol-Myers Squibb Co	BMJ	0.40%	3.33%	0.01%	12.50%	0.05%
Fortune Brands Home & Security Inc	FBHS	0.04%	1.19%	0.00%	11.00%	0.00%
Brown-Forman Corp	BF/B	0.06%	1.12%	0.00%	13.00%	0.01%
Coterra Energy Inc	CTRA	0.00%	2.28%	0.00%		0.00%
Campbell Soup Co	CPB	0.04%	3.35%	0.00%	5.50%	0.00%
Hilton Worldwide Holdings Inc	HLT	0.00%	n/a	n/a		0.00%
Carnival Corp	CCL	0.00%	n/a	n/a		0.00%
Qorvo Inc	QRVO	0.04%	n/a	n/a	27.00%	0.01%
Lumen Technologies Inc	LUMN	0.03%	8.09%	0.00%	3.50%	0.00%
UDR Inc	UDR	0.05%	2.55%	0.00%	6.00%	0.00%
Clorox Co/The	CLX	0.06%	2.76%	0.00%	5.00%	0.00%
Paycom Software Inc	PAYC	0.06%	n/a	n/a	20.00%	0.01%
CMS Energy Corp	CMS	0.05%	2.86%	0.00%	6.00%	0.00%
Newell Brands Inc	NWL	0.00%	3.96%	0.00%		0.00%
Colgate-Palmolive Co	CL	0.19%	2.18%	0.00%	5.00%	0.01%
EPAM Systems Inc	EPAM	0.07%	n/a	n/a	23.50%	0.02%
Comerica Inc	CMA	0.03%	2.93%	0.00%	2.50%	0.00%
IPG Photonics Corp	IPGP	0.02%	n/a	n/a	17.00%	0.00%
Conagra Brands Inc	CAG	0.05%	3.60%	0.00%	4.50%	0.00%
Consolidated Edison Inc	ED	0.08%	3.66%	0.00%	3.00%	0.00%
Corning Inc	GLW	0.10%	2.28%	0.00%	20.00%	0.02%
Cummins Inc	CMI	0.09%	2.63%	0.00%	7.00%	0.01%
Caesars Entertainment Inc	CZR	0.00%	n/a	n/a		0.00%
Danaher Corp	DHR	0.56%	0.29%	0.00%	21.00%	0.12%
Target Corp	TGT	0.29%	1.63%	0.00%	15.00%	0.04%
Deere & Co	DE	0.32%	1.12%	0.00%	21.50%	0.07%
Dominion Energy Inc	D	0.18%	3.31%	0.01%	12.00%	0.02%
Dover Corp	DOV	0.07%	1.18%	0.00%	9.00%	0.01%
Alliant Energy Corp	LNT	0.04%	2.86%	0.00%	5.50%	0.00%
Duke Energy Corp	DUK	0.22%	3.75%	0.01%	7.00%	0.02%
Regency Centers Corp	REG	0.03%	3.48%	0.00%	16.00%	0.01%
Eaton Corp PLC	ETN	0.17%	1.92%	0.00%	11.50%	0.02%
Ecolab Inc	ECL	0.15%	1.08%	0.00%	6.00%	0.01%
PerkinElmer Inc	PKI	0.06%	0.16%	0.00%	12.00%	0.01%
Emerson Electric Co	EMR	0.15%	2.24%	0.00%	11.50%	0.02%
EOG Resources Inc	EOG	0.18%	2.69%	0.00%	16.00%	0.03%
Aon PLC	AON	0.17%	0.74%	0.00%	7.00%	0.01%
Entergy Corp	ETR	0.06%	3.61%	0.00%	3.00%	0.00%
Equifax Inc	EFX	0.08%	0.65%	0.00%	11.00%	0.01%
IQVIA Holdings Inc	IQV	0.13%	n/a	n/a	15.50%	0.02%
Gartner Inc	IT	0.07%	n/a	n/a	20.50%	0.01%
FedEx Corp	FDX	0.18%	1.22%	0.00%	13.00%	0.02%
FMC Corp	FMC	0.04%	1.92%	0.00%	10.50%	0.00%
Brown & Brown Inc	BRO	0.05%	0.62%	0.00%	10.50%	0.01%
Ford Motor Co	F	0.22%	1.97%	0.00%	47.50%	0.10%
NextEra Energy Inc	NEE	0.42%	1.97%	0.01%	10.50%	0.04%
Franklin Resources Inc	BEN	0.04%	3.63%	0.00%	11.00%	0.00%
Garmin Ltd	GRMN	0.07%	2.15%	0.00%	10.00%	0.01%
Freeport-McMoRan Inc	FCX	0.15%	0.81%	0.00%	37.50%	0.06%
Gap Inc/The	GPS	0.02%	2.66%	0.00%	27.00%	0.01%
Dexcom Inc	DXCM	0.00%	n/a	n/a		0.00%
General Dynamics Corp	GD	0.16%	2.24%	0.00%	6.00%	0.01%
General Mills Inc	GIS	0.11%	2.97%	0.00%	3.50%	0.00%
Genuine Parts Co	GPC	0.05%	2.45%	0.00%	7.00%	0.00%
Atmos Energy Corp	ATO	0.04%	2.54%	0.00%	7.00%	0.00%
WW Grainger Inc	GWW	0.07%	1.31%	0.00%	6.50%	0.00%
Halliburton Co	HAL	0.08%	1.56%	0.00%	9.50%	0.01%
L3Harris Technologies Inc	LHX	0.00%	1.95%	0.00%		0.00%
Healthpeak Properties Inc	PEAK	0.05%	3.39%	0.00%	-12.00%	-0.01%
Catalent Inc	CTLT	0.05%	n/a	n/a	21.00%	0.01%
Fortive Corp	FTV	0.07%	0.40%	0.00%	6.00%	0.00%
Hershey Co/The	HSY	0.08%	1.83%	0.00%	6.00%	0.00%
Synchrony Financial	SYF	0.06%	2.07%	0.00%	9.50%	0.01%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]
		Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Hormel Foods Corp	HRL	0.07%	2.19%	0.00%	6.50%	0.00%
Arthur J Gallagher & Co	AJG	0.09%	1.29%	0.00%	14.50%	0.01%
Mondelez International Inc	MDLZ	0.26%	2.09%	0.01%	8.00%	0.02%
CenterPoint Energy Inc	CNP	0.05%	2.40%	0.00%	4.50%	0.00%
Humana Inc	HUM	0.14%	0.71%	0.00%	12.00%	0.02%
Willis Towers Watson PLC	WTW	0.08%	1.37%	0.00%	11.00%	0.01%
Illinois Tool Works Inc	ITW	0.20%	2.09%	0.00%	10.50%	0.02%
CDW Corp/DE	CDW	0.07%	1.06%	0.00%	11.00%	0.01%
Trane Technologies PLC	TT	0.00%	1.36%	0.00%		0.00%
Interpublic Group of Cos Inc/The	IPG	0.04%	3.04%	0.00%	12.00%	0.00%
International Flavors & Fragrances Inc	IFF	0.09%	2.40%	0.00%	7.50%	0.01%
Jacobs Engineering Group Inc	J	0.05%	0.71%	0.00%	15.00%	0.01%
Generac Holdings Inc	GNRC	0.05%	n/a	n/a	23.50%	0.01%
NXP Semiconductors NV	NXPI	0.15%	1.65%	0.00%	11.00%	0.02%
Kellogg Co	K	0.06%	3.68%	0.00%	3.50%	0.00%
Broadridge Financial Solutions Inc	BR	0.05%	1.61%	0.00%	9.50%	0.00%
Kimberly-Clark Corp	KMB	0.13%	3.37%	0.00%	4.50%	0.01%
Kimco Realty Corp	KIM	0.04%	2.80%	0.00%	10.50%	0.00%
Oracle Corp	ORCL	0.60%	1.58%	0.01%	10.00%	0.06%
Kroger Co/The	KR	0.09%	1.93%	0.00%	6.50%	0.01%
Lennar Corp	LEN	0.07%	1.56%	0.00%	12.50%	0.01%
Eli Lilly & Co	LLY	0.64%	1.60%	0.01%	12.00%	0.08%
Bath & Body Works Inc	BBWI	0.04%	1.07%	0.00%	26.00%	0.01%
Charter Communications Inc	CHTR	0.28%	n/a	n/a	29.50%	0.08%
Lincoln National Corp	LNC	0.03%	2.57%	0.00%	9.00%	0.00%
Loews Corp	L	0.04%	0.42%	0.00%	12.50%	0.01%
Lowe's Cos Inc	LOW	0.44%	1.35%	0.01%	16.50%	0.07%
IDEX Corp	IEX	0.05%	1.00%	0.00%	8.00%	0.00%
Marsh & McLennan Cos Inc	MMC	0.21%	1.39%	0.00%	12.00%	0.03%
Masco Corp	MAS	0.04%	1.48%	0.00%	10.00%	0.00%
S&P Global Inc	SPGI	0.27%	0.74%	0.00%	10.50%	0.03%
Medtronic PLC	MDT	0.38%	2.44%	0.01%	9.00%	0.03%
Viatrix Inc	VTRS	0.00%	3.21%	0.00%		0.00%
CVS Health Corp	CVS	0.39%	2.07%	0.01%	6.00%	0.02%
DuPont de Nemours Inc	DD	0.00%	1.57%	0.00%		0.00%
Micron Technology Inc	MU	0.25%	0.49%	0.00%	22.50%	0.06%
Motorola Solutions Inc	MSI	0.11%	1.36%	0.00%	7.00%	0.01%
Cboe Global Markets Inc	CBOE	0.03%	1.62%	0.00%	12.00%	0.00%
Laboratory Corp of America Holdings	LH	0.07%	n/a	n/a	6.00%	0.00%
Newmont Corp	NEM	0.13%	3.60%	0.00%	12.00%	0.02%
NIKE Inc	NKE	0.52%	0.82%	0.00%	27.00%	0.14%
NiSource Inc	NI	0.03%	3.22%	0.00%	8.50%	0.00%
Norfolk Southern Corp	NSC	0.18%	1.82%	0.00%	10.50%	0.02%
Principal Financial Group Inc	PFG	0.05%	3.50%	0.00%	6.00%	0.00%
Eversource Energy	ES	0.08%	2.69%	0.00%	6.50%	0.01%
Northrop Grumman Corp	NOC	0.16%	1.70%	0.00%	8.50%	0.01%
Wells Fargo & Co	WFC	0.57%	1.86%	0.01%	5.50%	0.03%
Nucor Corp	NUE	0.08%	1.97%	0.00%	12.00%	0.01%
PVH Corp	PVH	0.02%	0.16%	0.00%	14.00%	0.00%
Occidental Petroleum Corp	OXY	0.10%	0.11%	0.00%	36.50%	0.04%
Omnicom Group Inc	OMC	0.04%	3.72%	0.00%	6.00%	0.00%
ONEOK Inc	OKE	0.07%	6.16%	0.00%	10.00%	0.01%
Raymond James Financial Inc	RJF	0.06%	1.28%	0.00%	10.50%	0.01%
Parker-Hannifin Corp	PH	0.11%	1.33%	0.00%	13.50%	0.01%
Rollins Inc	ROL	0.04%	1.30%	0.00%	11.50%	0.00%
PPL Corp	PPL	0.00%	5.59%	0.00%		0.00%
ConocoPhillips	COP	0.32%	0.23%	0.00%	16.50%	0.05%
PulteGroup Inc	PHM	0.04%	1.14%	0.00%	13.00%	0.00%
Pinnacle West Capital Corp	PNW	0.02%	4.88%	0.00%		0.00%
PNC Financial Services Group Inc/The	PNC	0.24%	2.43%	0.01%	11.50%	0.03%
PPG Industries Inc	PPG	0.10%	1.51%	0.00%	10.00%	0.01%
Progressive Corp/The	PGR	0.17%	0.37%	0.00%	5.00%	0.01%
Public Service Enterprise Group Inc	PEG	0.09%	3.07%	0.00%	3.50%	0.00%
Robert Half International Inc	RHI	0.03%	1.34%	0.00%	7.50%	0.00%
Edison International	EIX	0.00%	4.46%	0.00%		0.00%
Schlumberger NV	SLB	0.15%	1.28%	0.00%	11.50%	0.02%
Charles Schwab Corp/The	SCHW	0.44%	0.91%	0.00%	7.00%	0.03%
Sherwin-Williams Co/The	SHW	0.21%	0.77%	0.00%	10.50%	0.02%
West Pharmaceutical Services Inc	WST	0.08%	0.18%	0.00%	17.00%	0.01%
J M Smucker Co/The	SJM	0.04%	2.82%	0.00%	4.00%	0.00%
Snap-on Inc	SNA	0.03%	2.73%	0.00%	4.50%	0.00%
AMETEK Inc	AME	0.09%	0.58%	0.00%	9.00%	0.01%
Southern Co/The	SO	0.20%	3.80%	0.01%	6.00%	0.01%
Truist Financial Corp	TFC	0.23%	3.06%	0.01%	7.00%	0.02%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]
		Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Southwest Airlines Co	LUV	0.07%	n/a	n/a	34.00%	0.02%
W R Berkley Corp	WRB	0.04%	0.62%	0.00%	14.50%	0.01%
Stanley Black & Decker Inc	SWK	0.08%	1.81%	0.00%	6.00%	0.00%
Public Storage	PSA	0.17%	2.23%	0.00%	6.50%	0.01%
Arista Networks Inc	ANET	0.10%	n/a	n/a	4.50%	0.00%
Sysco Corp	SYU	0.11%	2.41%	0.00%	17.50%	0.02%
Corteva Inc	CTVA	0.00%	1.16%	0.00%		0.00%
Texas Instruments Inc	TXN	0.46%	2.56%	0.01%	9.00%	0.04%
Textron Inc	TXT	0.04%	0.12%	0.00%	8.50%	0.00%
Thermo Fisher Scientific Inc	TMO	0.63%	0.18%	0.00%	15.00%	0.09%
TJX Cos Inc/The	TJX	0.24%	1.45%	0.00%	20.00%	0.05%
Globe Life Inc	GL	0.03%	0.77%	0.00%	8.00%	0.00%
Johnson Controls International plc	JCI	0.14%	1.87%	0.00%	14.00%	0.02%
Ulta Beauty Inc	ULTA	0.05%	n/a	n/a	15.50%	0.01%
Union Pacific Corp	UNP	0.43%	1.93%	0.01%	10.00%	0.04%
Keysight Technologies Inc	KEYS	0.08%	n/a	n/a	17.00%	0.01%
UnitedHealth Group Inc	UNH	1.22%	1.23%	0.02%	12.00%	0.15%
Marathon Oil Corp	MRO	0.00%	1.44%	0.00%		0.00%
Bio-Rad Laboratories Inc	BIO	0.04%	n/a	n/a	11.50%	0.00%
Ventas Inc	VTR	0.06%	3.39%	0.00%	4.50%	0.00%
VF Corp	VFC	0.07%	3.07%	0.00%	9.50%	0.01%
Vornado Realty Trust	VNO	0.02%	5.17%	0.00%	-22.50%	0.00%
Vulcan Materials Co	VMC	0.07%	0.78%	0.00%	10.00%	0.01%
Weyerhaeuser Co	WY	0.08%	1.68%	0.00%	22.00%	0.02%
Whirlpool Corp	WHR	0.03%	2.66%	0.00%	9.50%	0.00%
Williams Cos Inc/The	WMB	0.10%	5.48%	0.01%	10.50%	0.01%
WEC Energy Group Inc	WEC	0.08%	3.00%	0.00%	6.50%	0.01%
Adobe Inc	ADBE	0.69%	n/a	n/a	15.50%	0.11%
AES Corp/The	AES	0.04%	2.85%	0.00%	24.00%	0.01%
Amgen Inc	AMGN	0.35%	3.42%	0.01%	5.50%	0.02%
Apple Inc	AAPL	7.84%	0.50%	0.04%	13.00%	1.02%
Autodesk Inc	ADSK	0.15%	n/a	n/a	18.00%	0.03%
Cintas Corp	CTAS	0.11%	0.97%	0.00%	13.50%	0.02%
Comcast Corp	CMCSA	0.63%	2.16%	0.01%	11.00%	0.07%
Molson Coors Beverage Co	TAP	0.03%	2.85%	0.00%	41.00%	0.01%
KLA Corp	KLAC	0.16%	1.08%	0.00%	19.50%	0.03%
Marriott International Inc/MD	MAR	0.14%	n/a	n/a	17.50%	0.03%
McCormick & Co Inc/MD	MKC	0.07%	1.48%	0.00%	6.00%	0.00%
PACCAR Inc	PCAR	0.09%	1.46%	0.00%	5.00%	0.00%
Costco Wholesale Corp	COST	0.62%	0.63%	0.00%	10.50%	0.06%
First Republic Bank/CA	FRC	0.09%	0.51%	0.00%	13.50%	0.01%
Stryker Corp	SYK	0.26%	1.12%	0.00%	11.00%	0.03%
Tyson Foods Inc	TSN	0.07%	2.02%	0.00%	6.00%	0.00%
Lamb Weston Holdings Inc	LW	0.03%	1.53%	0.00%	6.00%	0.00%
Applied Materials Inc	AMAT	0.34%	0.69%	0.00%	16.50%	0.06%
American Airlines Group Inc	AAL	0.00%	n/a	n/a		0.00%
Cardinal Health Inc	CAH	0.04%	3.81%	0.00%	12.00%	0.00%
Cerner Corp	CERN	0.07%	1.18%	0.00%	11.00%	0.01%
Cincinnati Financial Corp	CINF	0.05%	2.34%	0.00%	17.50%	0.01%
ViacomCBS Inc	VIAC	0.06%	2.87%	0.00%	7.00%	0.00%
DR Horton Inc	DHI	0.09%	1.01%	0.00%	11.00%	0.01%
Electronic Arts Inc	EA	0.10%	0.51%	0.00%	10.50%	0.01%
Expeditors International of Washington Inc	EXPD	0.05%	1.01%	0.00%	10.00%	0.01%
Fastenal Co	FAST	0.09%	2.19%	0.00%	9.00%	0.01%
M&T Bank Corp	MTB	0.06%	2.83%	0.00%	8.00%	0.00%
Xcel Energy Inc	XEL	0.10%	2.63%	0.00%	6.00%	0.01%
Fiserv Inc	FISV	0.19%	n/a	n/a	13.00%	0.02%
Fifth Third Bancorp	FITB	0.08%	2.69%	0.00%	9.50%	0.01%
Gilead Sciences Inc	GILD	0.24%	4.14%	0.01%	3.50%	0.01%
Hasbro Inc	HAS	0.04%	2.94%	0.00%	11.50%	0.00%
Huntington Bancshares Inc/OH	HBAN	0.06%	4.12%	0.00%	9.00%	0.01%
Welltower Inc	WELL	0.10%	2.82%	0.00%	-1.50%	0.00%
Biogen Inc	BIIB	0.09%	n/a	n/a	7.00%	0.01%
Northern Trust Corp	NTRS	0.07%	2.40%	0.00%	7.00%	0.00%
Packaging Corp of America	PKG	0.04%	2.66%	0.00%	9.00%	0.00%
Paychex Inc	PAYX	0.12%	2.24%	0.00%	9.00%	0.01%
People's United Financial Inc	PBCT	0.02%	3.77%	0.00%	2.50%	0.00%
QUALCOMM Inc	QCOM	0.54%	1.55%	0.01%	18.50%	0.10%
Roper Technologies Inc	ROP	0.13%	0.57%	0.00%	8.50%	0.01%
Ross Stores Inc	ROST	0.09%	1.17%	0.00%	14.00%	0.01%
IDEXX Laboratories Inc	IDXX	0.12%	n/a	n/a	14.50%	0.02%
Starbucks Corp	SBUX	0.31%	1.99%	0.01%	16.00%	0.05%
KeyCorp	KEY	0.06%	3.11%	0.00%	9.50%	0.01%
Fox Corp	FOXA	0.04%	1.18%	0.00%	10.50%	0.00%

STANDARD AND POOR'S 500 INDEX

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		Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Fox Corp	FOX	0.00%	1.29%	0.00%		0.00%
State Street Corp	STT	0.09%	2.41%	0.00%	8.00%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	0.00%	n/a	n/a		0.00%
US Bancorp	USB	0.24%	3.16%	0.01%	6.50%	0.02%
A O Smith Corp	AOS	0.03%	1.47%	0.00%	10.00%	0.00%
NortonLifeLock Inc	NLOK	0.04%	1.92%	0.00%	11.00%	0.00%
T Rowe Price Group Inc	TROW	0.10%	2.80%	0.00%	12.00%	0.01%
Waste Management Inc	WM	0.17%	1.53%	0.00%	7.50%	0.01%
Constellation Brands Inc	STZ	0.11%	1.28%	0.00%	5.50%	0.01%
Xilinx Inc	XLNX	0.13%	0.76%	0.00%	8.50%	0.01%
DENTSPLY SIRONA Inc	XRAY	0.03%	0.82%	0.00%	5.50%	0.00%
Zions Bancorp NA	ZION	0.03%	2.24%	0.00%	7.50%	0.00%
Alaska Air Group Inc	ALK	0.00%	n/a	n/a		0.00%
Invesco Ltd	IVZ	0.03%	3.00%	0.00%	15.50%	0.00%
Linde PLC	LIN	0.00%	1.33%	0.00%		0.00%
Intuit Inc	INTU	0.43%	0.49%	0.00%	18.50%	0.08%
Morgan Stanley	MS	0.50%	2.73%	0.01%	10.50%	0.05%
Microchip Technology Inc	MCHP	0.12%	1.20%	0.00%	10.50%	0.01%
Chubb Ltd	CB	0.23%	1.62%	0.00%	12.50%	0.03%
Hologic Inc	HOLX	0.05%	n/a	n/a	25.00%	0.01%
Citizens Financial Group Inc	CFG	0.06%	3.03%	0.00%	8.50%	0.01%
O'Reilly Automotive Inc	ORLY	0.12%	n/a	n/a	13.00%	0.02%
Allstate Corp/The	ALL	0.10%	2.69%	0.00%	5.00%	0.00%
Equity Residential	EQR	0.09%	2.72%	0.00%	2.00%	0.00%
BorgWarner Inc	BWA	0.03%	1.55%	0.00%	8.00%	0.00%
Organon & Co	OGN	0.00%	3.51%	0.00%		0.00%
Host Hotels & Resorts Inc	HST	0.03%	n/a	n/a	10.00%	0.00%
Incyte Corp	INCY	0.00%	n/a	n/a		0.00%
Simon Property Group Inc	SPG	0.13%	4.48%	0.01%	1.50%	0.00%
Eastman Chemical Co	EMN	0.04%	2.56%	0.00%	8.00%	0.00%
Twitter Inc	TWTR	0.08%	n/a	n/a	39.00%	0.03%
AvalonBay Communities Inc	AVB	0.09%	2.60%	0.00%	1.50%	0.00%
Prudential Financial Inc	PRU	0.12%	4.12%	0.00%	4.50%	0.01%
United Parcel Service Inc	UPS	0.41%	2.02%	0.01%	11.50%	0.05%
Walgreens Boots Alliance Inc	WBA	0.12%	3.84%	0.00%	7.50%	0.01%
STERIS PLC	STE	0.06%	0.77%	0.00%	12.00%	0.01%
McKesson Corp	MCK	0.11%	0.73%	0.00%	9.50%	0.01%
Lockheed Martin Corp	LMT	0.29%	2.88%	0.01%	7.50%	0.02%
AmerisourceBergen Corp	ABC	0.08%	1.35%	0.00%	6.50%	0.01%
Capital One Financial Corp	COF	0.00%	1.64%	0.00%		0.00%
Waters Corp	WAT	0.05%	n/a	n/a	6.00%	0.00%
Dollar Tree Inc	DLTR	0.08%	n/a	n/a	10.00%	0.01%
Darden Restaurants Inc	DRI	0.05%	3.15%	0.00%	19.50%	0.01%
Match Group Inc	MTCH	0.09%	n/a	n/a	18.50%	0.02%
Domino's Pizza Inc	DPZ	0.05%	0.83%	0.00%	15.00%	0.01%
NVR Inc	NVR	0.05%	n/a	n/a	9.00%	0.00%
NetApp Inc	NTAP	0.05%	2.31%	0.00%	8.00%	0.00%
Citrix Systems Inc	CTXS	0.03%	1.45%	0.00%	8.00%	0.00%
DXC Technology Co	DXC	0.02%	n/a	n/a	6.00%	0.00%
Old Dominion Freight Line Inc	ODFL	0.10%	0.26%	0.00%	11.50%	0.01%
DaVita Inc	DVA	0.03%	n/a	n/a	16.00%	0.00%
Hartford Financial Services Group Inc/The	HIG	0.07%	2.14%	0.00%	6.50%	0.00%
Iron Mountain Inc	IRM	0.04%	5.39%	0.00%	8.50%	0.00%
Estee Lauder Cos Inc/The	EL	0.20%	0.77%	0.00%	11.50%	0.02%
Cadence Design Systems Inc	CDNS	0.12%	n/a	n/a	12.00%	0.01%
Tyler Technologies Inc	TYL	0.05%	n/a	n/a	14.00%	0.01%
Universal Health Services Inc	UHS	0.03%	0.62%	0.00%	11.00%	0.00%
Skyworks Solutions Inc	SWKS	0.07%	1.53%	0.00%	16.00%	0.01%
Quest Diagnostics Inc	DGX	0.05%	1.84%	0.00%	7.50%	0.00%
Activision Blizzard Inc	ATVI	0.17%	0.59%	0.00%	15.00%	0.03%
Rockwell Automation Inc	ROK	0.09%	1.55%	0.00%	10.00%	0.01%
Kraft Heinz Co/The	KHC	0.12%	4.47%	0.01%	4.00%	0.00%
American Tower Corp	AMT	0.31%	2.21%	0.01%	9.50%	0.03%
Regeneron Pharmaceuticals Inc	REGN	0.18%	n/a	n/a	12.50%	0.02%
Amazon.com Inc	AMZN	4.17%	n/a	n/a	26.50%	1.10%
Jack Henry & Associates Inc	JKHY	0.03%	1.10%	0.00%	10.50%	0.00%
Ralph Lauren Corp	RL	0.01%	2.48%	0.00%	12.50%	0.00%
Boston Properties Inc	BXP	0.05%	3.50%	0.00%	-2.00%	0.00%
Amphenol Corp	APH	0.13%	1.01%	0.00%	12.00%	0.02%
Howmet Aerospace Inc	HWM	0.04%	0.26%	0.00%	12.00%	0.00%
Pioneer Natural Resources Co	PXD	0.15%	1.13%	0.00%	23.00%	0.03%
Valero Energy Corp	VLO	0.09%	4.72%	0.00%	13.00%	0.01%
Synopsys Inc	SNPS	0.13%	n/a	n/a	14.00%	0.02%
Etsy Inc	ETSY	0.05%	n/a	n/a	29.00%	0.02%

STANDARD AND POOR'S 500 INDEX

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		Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
CH Robinson Worldwide Inc	CHRW	0.04%	2.10%	0.00%	9.00%	0.00%
Accenture PLC	ACN	0.64%	1.10%	0.01%	12.00%	0.08%
TransDigm Group Inc	TDG	0.09%	n/a	n/a	16.50%	0.02%
Yum! Brands Inc	YUM	0.10%	1.60%	0.00%	11.00%	0.01%
Prologis Inc	PLD	0.32%	1.61%	0.01%	8.50%	0.03%
FirstEnergy Corp	FE	0.06%	3.72%	0.00%	11.50%	0.01%
VeriSign Inc	VRSN	0.07%	n/a	n/a	8.50%	0.01%
Quanta Services Inc	PWR	0.04%	0.27%	0.00%	12.50%	0.01%
Henry Schein Inc	HSIC	0.03%	n/a	n/a	6.50%	0.00%
Ameren Corp	AEE	0.06%	2.48%	0.00%	6.50%	0.00%
ANSYS Inc	ANSS	0.08%	n/a	n/a	8.50%	0.01%
FactSet Research Systems Inc	FDS	0.04%	0.78%	0.00%	9.50%	0.00%
NVIDIA Corp	NVDA	1.68%	0.07%	0.00%	20.00%	0.34%
Sealed Air Corp	SEE	0.03%	1.18%	0.00%	13.50%	0.00%
Cognizant Technology Solutions Corp	CTSH	0.12%	1.12%	0.00%	7.00%	0.01%
SVB Financial Group	SIVB	0.09%	n/a	n/a	5.00%	0.00%
Intuitive Surgical Inc	ISRG	0.28%	n/a	n/a	16.00%	0.04%
Take-Two Interactive Software Inc	TTWO	0.05%	n/a	n/a	15.00%	0.01%
Republic Services Inc	RSG	0.11%	1.44%	0.00%	11.00%	0.01%
eBay Inc	EBAY	0.10%	1.20%	0.00%	16.50%	0.02%
Goldman Sachs Group Inc/The	GS	0.33%	2.26%	0.01%	8.50%	0.03%
SBA Communications Corp	SBAC	0.10%	0.71%	0.00%	45.00%	0.04%
Sempra Energy	SRE	0.12%	3.18%	0.00%	10.00%	0.01%
Moody's Corp	MCO	0.18%	0.72%	0.00%	10.00%	0.02%
Booking Holdings Inc	BKNG	0.28%	n/a	n/a	14.00%	0.04%
F5 Inc	FFIV	0.03%	n/a	n/a	7.00%	0.00%
Akamai Technologies Inc	AKAM	0.05%	n/a	n/a	9.50%	0.00%
Charles River Laboratories International Inc	CRL	0.05%	n/a	n/a	7.00%	0.00%
MarketAxess Holdings Inc	MKTX	0.04%	0.81%	0.00%	14.00%	0.01%
Devon Energy Corp	DVN	0.00%	6.64%	0.00%		0.00%
Alphabet Inc	GOOGL	0.00%	n/a	n/a		0.00%
Bio-Techne Corp	TECH	0.04%	0.34%	0.00%	13.00%	0.01%
Teleflex Inc	TFX	0.04%	0.44%	0.00%	15.00%	0.01%
Netflix Inc	NFLX	0.52%	n/a	n/a	23.50%	0.12%
Allegion plc	ALLE	0.03%	1.17%	0.00%	9.50%	0.00%
Agilent Technologies Inc	A	0.12%	0.60%	0.00%	12.50%	0.01%
Anthem Inc	ANTM	0.29%	1.16%	0.00%	13.00%	0.04%
Trimble Inc	TRMB	0.05%	n/a	n/a	14.50%	0.01%
CME Group Inc	CME	0.23%	1.57%	0.00%	8.50%	0.02%
Juniper Networks Inc	JNPR	0.03%	2.41%	0.00%	7.00%	0.00%
BlackRock Inc	BLK	0.34%	2.37%	0.01%	11.00%	0.04%
DTE Energy Co	DTE	0.06%	2.94%	0.00%	1.00%	0.00%
Nasdaq Inc	NDAQ	0.08%	1.21%	0.00%	6.50%	0.01%
Celanese Corp	CE	0.05%	1.75%	0.00%	6.50%	0.00%
Philip Morris International Inc	PM	0.44%	4.86%	0.02%	7.00%	0.03%
salesforce.com Inc	CRM	0.63%	n/a	n/a	20.00%	0.13%
Ingersoll Rand Inc	IR	0.00%	0.14%	0.00%		0.00%
Huntington Ingalls Industries Inc	HII	0.02%	2.52%	0.00%	7.00%	0.00%
MetLife Inc	MET	0.15%	2.86%	0.00%	6.50%	0.01%
Under Armour Inc	UA	0.00%	n/a	n/a		0.00%
Tapestry Inc	TPR	0.03%	2.64%	0.00%	10.00%	0.00%
CSX Corp	CSX	0.21%	1.09%	0.00%	11.50%	0.02%
Edwards Lifesciences Corp	EW	0.19%	n/a	n/a	13.00%	0.02%
Ameriprise Financial Inc	AMP	0.09%	1.49%	0.00%	13.50%	0.01%
Zebra Technologies Corp	ZBRA	0.07%	n/a	n/a	13.00%	0.01%
Zimmer Biomet Holdings Inc	ZBH	0.07%	0.78%	0.00%	8.50%	0.01%
CBRE Group Inc	CBRE	0.09%	n/a	n/a	10.50%	0.01%
Mastercard Inc	MA	1.03%	0.51%	0.01%	13.00%	0.13%
CarMax Inc	KMX	0.05%	n/a	n/a	13.50%	0.01%
Intercontinental Exchange Inc	ICE	0.20%	1.04%	0.00%	8.00%	0.02%
Fidelity National Information Services Inc	FIS	0.20%	1.57%	0.00%	28.00%	0.06%
Chipotle Mexican Grill Inc	CMG	0.11%	n/a	n/a	22.00%	0.03%
Wynn Resorts Ltd	WYNN	0.03%	n/a	n/a	27.00%	0.01%
Live Nation Entertainment Inc	LYV	0.00%	n/a	n/a		0.00%
Assurant Inc	AIZ	0.02%	1.78%	0.00%	15.50%	0.00%
NRG Energy Inc	NRG	0.03%	3.51%	0.00%	-1.50%	0.00%
Regions Financial Corp	RF	0.06%	2.96%	0.00%	10.50%	0.01%
Monster Beverage Corp	MNST	0.13%	n/a	n/a	13.00%	0.02%
Mosaic Co/The	MOS	0.04%	1.13%	0.00%	56.50%	0.02%
Baker Hughes Co	BKR	0.00%	2.62%	0.00%		0.00%
Expedia Group Inc	EXPE	0.00%	n/a	n/a		0.00%
Evergy Inc	EVRG	0.04%	3.53%	0.00%	8.00%	0.00%
Discovery Inc	DISCA	0.01%	n/a	n/a	13.50%	0.00%
CF Industries Holdings Inc	CF	0.04%	1.74%	0.00%	19.50%	0.01%

STANDARD AND POOR'S 500 INDEX

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Leidos Holdings Inc	LDOS	0.03%	1.61%	0.00%	9.00%	0.00%
APA Corp	APA	0.00%	1.51%	0.00%		0.00%
Alphabet Inc	GOOG	2.37%	n/a	n/a	23.50%	0.56%
TE Connectivity Ltd	TEL	0.13%	1.57%	0.00%	10.00%	0.01%
Cooper Cos Inc/The	COO	0.05%	0.02%	0.00%	19.00%	0.01%
Discover Financial Services	DFS	0.09%	1.73%	0.00%	16.00%	0.01%
Visa Inc	V	1.03%	0.66%	0.01%	12.00%	0.12%
Mid-America Apartment Communities Inc	MAA	0.07%	2.10%	0.00%	9.00%	0.01%
Xylem Inc/NY	XYL	0.05%	1.07%	0.00%	6.50%	0.00%
Marathon Petroleum Corp	MPC	0.00%	3.23%	0.00%		0.00%
Tractor Supply Co	TSCO	0.07%	1.69%	0.00%	11.00%	0.01%
Advanced Micro Devices Inc	AMD	0.38%	n/a	n/a	30.00%	0.11%
ResMed Inc	RMD	0.09%	0.73%	0.00%	8.50%	0.01%
Mettler-Toledo International Inc	MTD	0.09%	n/a	n/a	12.50%	0.01%
Copart Inc	CPRT	0.08%	n/a	n/a	12.00%	0.01%
Albemarle Corp	ALB	0.07%	0.71%	0.00%	6.50%	0.00%
Fortinet Inc	FTNT	0.13%	n/a	n/a	24.00%	0.03%
Moderna Inc	MRNA	0.00%	n/a	n/a		0.00%
Essex Property Trust Inc	ESS	0.06%	2.51%	0.00%	-0.50%	0.00%
Realty Income Corp	O	0.11%	4.26%	0.00%	3.50%	0.00%
Westrock Co	WRK	0.03%	2.17%	0.00%	18.50%	0.01%
IHS Markit Ltd	INFO	0.13%	0.68%	0.00%	10.50%	0.01%
Westinghouse Air Brake Technologies Corp	WAB	0.05%	0.54%	0.00%	9.50%	0.00%
Pool Corp	POOL	0.05%	0.67%	0.00%	17.00%	0.01%
Western Digital Corp	WDC	0.04%	n/a	n/a	9.00%	0.00%
PepsiCo Inc	PEP	0.66%	2.48%	0.02%	6.50%	0.04%
Diamondback Energy Inc	FANG	0.00%	1.59%	0.00%		0.00%
ServiceNow Inc	NOW	0.32%	n/a	n/a	44.50%	0.14%
Church & Dwight Co Inc	CHD	0.07%	1.02%	0.00%	8.00%	0.01%
Duke Realty Corp	DRE	0.06%	1.94%	0.00%	-2.00%	0.00%
Federal Realty Investment Trust	FRT	0.03%	3.36%	0.00%	2.00%	0.00%
MGM Resorts International	MGM	0.06%	0.02%	0.00%	25.00%	0.01%
American Electric Power Co Inc	AEP	0.13%	3.45%	0.00%	6.50%	0.01%
SolarEdge Technologies Inc	SEDG	0.03%	n/a	n/a	19.50%	0.01%
PTC Inc	PTC	0.00%	n/a	n/a		0.00%
JB Hunt Transport Services Inc	JBHT	0.06%	0.83%	0.00%	10.00%	0.01%
Lam Research Corp	LRCX	0.23%	1.02%	0.00%	17.50%	0.04%
Mohawk Industries Inc	MHK	0.03%	n/a	n/a	10.50%	0.00%
Pentair PLC	PNR	0.03%	1.32%	0.00%	14.00%	0.00%
Vertex Pharmaceuticals Inc	VRTX	0.17%	n/a	n/a	18.50%	0.03%
Amcor PLC	AMCR	0.05%	4.00%	0.00%	15.00%	0.01%
Meta Platforms Inc	FB	2.04%	n/a	n/a	21.50%	0.44%
T-Mobile US Inc	TMUS	0.37%	n/a	n/a	8.50%	0.03%
United Rentals Inc	URI	0.06%	n/a	n/a	12.50%	0.01%
ABIOMED Inc	ABMD	0.04%	n/a	n/a	9.50%	0.00%
Honeywell International Inc	HON	0.39%	1.92%	0.01%	11.00%	0.04%
Alexandria Real Estate Equities Inc	ARE	0.09%	2.36%	0.00%	12.00%	0.01%
Delta Air Lines Inc	DAL	0.07%	n/a	n/a	49.00%	0.03%
Seagate Technology Holdings PLC	STX	0.06%	2.61%	0.00%	15.00%	0.01%
United Airlines Holdings Inc	UAL	0.00%	n/a	n/a		0.00%
News Corp	NWS	0.00%	0.90%	0.00%		0.00%
Centene Corp	CNC	0.12%	n/a	n/a	9.50%	0.01%
Martin Marietta Materials Inc	MLM	0.07%	0.63%	0.00%	10.50%	0.01%
Teradyne Inc	TER	0.05%	0.37%	0.00%	13.50%	0.01%
PayPal Holdings Inc	PYPL	0.56%	n/a	n/a	16.00%	0.09%
Tesla Inc	TSLA	0.00%	n/a	n/a		0.00%
DISH Network Corp	DISH	0.03%	n/a	n/a	4.00%	0.00%
Dow Inc	DOW	0.00%	4.69%	0.00%		0.00%
Penn National Gaming Inc	PENN	0.02%	n/a	n/a	28.00%	0.01%
Everest Re Group Ltd	RE	0.03%	2.19%	0.00%	11.00%	0.00%
Teledyne Technologies Inc	TDY	0.05%	n/a	n/a	15.00%	0.01%
News Corp	NWSA	0.00%	0.90%	0.00%		0.00%
Exelon Corp	EXC	0.16%	2.64%	0.00%	5.50%	0.01%
Global Payments Inc	GPN	0.12%	0.67%	0.00%	16.50%	0.02%
Crown Castle International Corp	CCI	0.22%	3.22%	0.01%	8.50%	0.02%
Aptiv PLC	APTIV	0.10%	n/a	n/a	21.50%	0.02%
Advance Auto Parts Inc	AAP	0.04%	1.73%	0.00%	11.00%	0.00%
Align Technology Inc	ALGN	0.11%	n/a	n/a	17.00%	0.02%
Illumina Inc	ILMN	0.15%	n/a	n/a	10.00%	0.01%
LKQ Corp	LKQ	0.04%	1.82%	0.00%	14.00%	0.01%
Nielsen Holdings PLC	NLSN	0.00%	1.27%	0.00%		0.00%
Zoetis Inc	ZTS	0.26%	0.65%	0.00%	12.00%	0.03%
Equinix Inc	EQIX	0.18%	1.58%	0.00%	17.00%	0.03%
Digital Realty Trust Inc	DLR	0.12%	3.11%	0.00%	8.50%	0.01%

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]
Name	Ticker	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Las Vegas Sands Corp	LVS	0.09%	n/a	n/a	17.00%	0.02%
Discovery Inc	DISCK	0.00%	n/a	n/a		0.00%

Notes:

- [4] Source: Bloomberg Professional
- [5] Source: Bloomberg Professional
- [6] Equals [4] x [5]
- [7] Source: Value Line, as of January 31, 2022
- [8] Equals [4] x [7]

MARKET RISK PREMIUM DERIVED FROM S&P 500 DIVIDEND YIELD

[1] Estimate of the S&P 500 Dividend Yield	1.58%
[2] Estimate of the S&P 500 Growth Rate	11.21%
[3] S&P 500 Estimated Required Market Return	12.87%

Notes:

- [1] Sum of [6]
- [2] Sum of [8]
- [3] Equals $([1] \times (1 + 0.5 \times [2])) + [2]$

STANDARD AND POOR'S 500 INDEX

Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	[4]	[5]	[6]	[7]	[8]
						Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.	
LyondellBasell Industries NV	LYB	96.73	330	31,921	0.11%	4.67%	0.00%	8.00%	0.01%	
Signature Bank/New York NY	SBNY	304.63	63	19,060	0.06%	0.74%	0.00%	12.00%	0.01%	
American Express Co	AXP	179.82	761	136,843	0.45%	0.96%	0.00%	12.00%	0.05%	
Verizon Communications Inc	VZ	53.23	4,198	223,460	0.74%	4.81%	0.04%	2.50%	0.02%	
Broadcom Inc	AVGO	585.88	413	Excl.	Excl.	2.80%	n/a	27.00%	n/a	
Boeing Co/The	BA	200.24	583	Excl.	Excl.	n/a	n/a		n/a	
Caterpillar Inc	CAT	201.56	541	109,032	0.36%	2.20%	0.01%	9.50%	0.03%	
JPMorgan Chase & Co	JPM	148.60	2,955	439,153	1.45%	2.69%	0.04%	7.50%	0.11%	
Chevron Corp	CVX	131.33	1,928	Excl.	Excl.	4.32%	n/a	24.00%	n/a	
Coca-Cola Co/The	KO	61.01	4,319	263,528	0.87%	2.75%	0.02%	7.00%	0.06%	
AbbVie Inc	ABBV	136.89	1,768	242,005	0.80%	4.12%	0.03%	6.50%	0.05%	
Walt Disney Co/The	DIS	142.97	1,820	Excl.	Excl.	n/a	n/a	37.50%	n/a	
FleetCor Technologies Inc	FLT	238.26	81	19,346	0.06%	n/a	n/a	11.00%	0.01%	
Extra Space Storage Inc	EXR	198.19	134	26,536	0.09%	2.52%	0.00%	5.50%	0.00%	
Exxon Mobil Corp	XOM	75.96	4,234	Excl.	Excl.	4.63%	n/a		n/a	
Phillips 66	PSX	84.79	438	37,152	0.12%	4.34%	0.01%	20.00%	0.02%	
General Electric Co	GE	94.48	1,098	103,752	0.34%	0.34%	0.00%	15.00%	0.05%	
HP Inc	HPQ	36.73	1,083	39,768	0.13%	2.72%	0.00%	15.50%	0.02%	
Home Depot Inc/The	HD	366.98	1,044	383,215	1.26%	1.80%	0.02%	11.00%	0.14%	
Monolithic Power Systems Inc	MPWR	402.93	46	Excl.	Excl.	0.60%	n/a	20.50%	n/a	
International Business Machines Corp	IBM	133.57	897	119,786	0.40%	4.91%	0.02%	0.50%	0.00%	
Johnson & Johnson	JNJ	172.29	2,633	453,570	1.50%	2.46%	0.04%	10.00%	0.15%	
McDonald's Corp	MCD	259.45	747	193,873	0.64%	2.13%	0.01%	10.50%	0.07%	
Merck & Co Inc	MRK	81.48	2,526	205,814	0.68%	3.39%	0.02%	7.50%	0.05%	
3M Co	MMM	166.02	576	95,670	0.32%	3.57%	0.01%	6.00%	0.02%	
American Water Works Co Inc	AWK	160.80	182	29,191	0.10%	1.50%	0.00%	8.50%	0.01%	
Bank of America Corp	BAC	46.14	8,078	372,711	1.23%	1.82%	0.02%	7.50%	0.09%	
Pfizer Inc	PFE	52.69	5,613	295,742	0.98%	3.04%	0.03%	11.50%	0.11%	
Procter & Gamble Co/The	PG	160.45	2,397	384,609	1.27%	2.17%	0.03%	7.00%	0.09%	
AT&T Inc	T	25.50	7,141	182,096	0.60%	8.16%	0.05%	1.50%	0.01%	
Travelers Cos Inc/The	TRV	166.18	241	40,083	0.13%	2.12%	0.00%	8.00%	0.01%	
Raytheon Technologies Corp	RTX	90.19	1,497	134,994	0.45%	2.26%	0.01%	1.50%	0.01%	
Analog Devices Inc	ADI	163.97	526	86,210	0.28%	1.68%	0.00%	11.00%	0.03%	
Walmart Inc	WMT	139.81	2,774	387,816	1.28%	1.57%	0.02%	7.50%	0.10%	
Cisco Systems Inc/Delaware	CSCO	55.67	4,218	234,794	0.77%	2.66%	0.02%	7.00%	0.05%	
Intel Corp	INTC	48.82	4,072	198,795	0.66%	2.99%	0.02%	7.00%	0.05%	
General Motors Co	GM	52.73	1,452	76,557	0.25%	n/a	n/a	12.00%	0.03%	
Microsoft Corp	MSFT	310.98	7,497	2,331,375	7.69%	0.80%	0.06%	17.50%	1.35%	
Dollar General Corp	DG	208.48	232	48,306	0.16%	0.81%	0.00%	10.50%	0.02%	
Cigna Corp	CI	230.46	331	76,381	0.25%	1.74%	0.00%	10.00%	0.03%	
Kinder Morgan Inc	KMI	17.36	2,267	39,363	0.13%	6.22%	0.01%	19.00%	0.02%	
Citigroup Inc	C	65.12	1,984	129,215	0.43%	3.13%	0.01%	7.00%	0.03%	
American International Group Inc	AIG	57.75	830	Excl.	Excl.	2.22%	n/a	31.50%	n/a	
Altria Group Inc	MO	50.88	1,837	93,466	0.31%	7.08%	0.02%	5.50%	0.02%	
HCA Healthcare Inc	HCA	240.05	311	74,661	0.25%	0.93%	0.00%	13.50%	0.03%	
Under Armour Inc	UA	18.83	189	Excl.	Excl.	n/a	n/a	33.00%	n/a	
International Paper Co	IP	48.25	387	18,685	0.06%	3.83%	0.00%	12.00%	0.01%	
Hewlett Packard Enterprise Co	HPE	16.33	1,293	21,122	0.07%	2.94%	0.00%	6.50%	0.00%	
Abbott Laboratories	ABT	127.46	1,768	225,386	0.74%	1.47%	0.01%	11.50%	0.09%	
Aflac Inc	AFL	62.82	662	41,557	0.14%	2.55%	0.00%	11.00%	0.02%	
Air Products and Chemicals Inc	APD	282.12	222	62,541	0.21%	2.13%	0.00%	12.00%	0.02%	
Royal Caribbean Cruises Ltd	RCL	77.81	255	Excl.	Excl.	n/a	n/a		n/a	
Hess Corp	HES	92.29	310	Excl.	Excl.	1.08%	n/a		n/a	
Archer-Daniels-Midland Co	ADM	75.00	559	41,958	0.14%	2.13%	0.00%	12.50%	0.02%	
Automatic Data Processing Inc	ADP	206.17	420	86,601	0.29%	2.02%	0.01%	9.00%	0.03%	
Verisk Analytics Inc	VRSK	196.13	161	31,609	0.10%	0.59%	0.00%	11.50%	0.01%	
AutoZone Inc	AZO	1,986.35	21	40,986	0.14%	n/a	n/a	16.50%	0.02%	
Avery Dennison Corp	AVY	205.42	83	17,008	0.06%	1.32%	0.00%	9.00%	0.01%	
Enphase Energy Inc	ENPH	140.47	135	Excl.	Excl.	n/a	n/a	40.00%	n/a	
MSCI Inc	MSCI	536.12	82	44,201	0.15%	0.78%	0.00%	16.00%	0.02%	
Ball Corp	BLL	97.10	324	Excl.	Excl.	0.82%	n/a	21.00%	n/a	
Ceridian HCM Holding Inc	CDAY	75.82	151	Excl.	Excl.	n/a	n/a		n/a	
Carrier Global Corp	CARR	47.68	867	Excl.	Excl.	1.26%	n/a		n/a	
Bank of New York Mellon Corp/The	BK	59.26	804	47,654	0.16%	2.29%	0.00%	5.00%	0.01%	

STANDARD AND POOR'S 500 INDEX

Name	Ticker	Price	Shares Outstanding	Market Capitalization	[4]	[5]	[6]	[7]	[8]
					Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Otis Worldwide Corp	OTIS	85.43	425	Excl.	Excl.	1.12%	n/a		n/a
Baxter International Inc	BAX	85.44	501	42,779	0.14%	1.31%	0.00%	8.50%	0.01%
Becton Dickinson and Co	BDX	254.14	285	72,441	0.24%	1.37%	0.00%	7.50%	0.02%
Berkshire Hathaway Inc	BRK/B	313.02	1,303	408,014	1.35%	n/a	n/a	6.00%	0.08%
Best Buy Co Inc	BBY	99.28	241	23,883	0.08%	2.82%	0.00%	8.50%	0.01%
Boston Scientific Corp	BSX	42.90	1,425	61,132	0.20%	n/a	n/a	17.50%	0.04%
Bristol-Myers Squibb Co	BMJ	64.89	2,220	144,033	0.48%	3.33%	0.02%	12.50%	0.06%
Fortune Brands Home & Security Inc	FBHS	94.17	136	12,782	0.04%	1.19%	0.00%	11.00%	0.00%
Brown-Forman Corp	BF/B	67.43	310	20,886	0.07%	1.12%	0.00%	13.00%	0.01%
Coterra Energy Inc	CTRA	21.90	814	Excl.	Excl.	2.28%	n/a		n/a
Campbell Soup Co	CPB	44.12	302	13,313	0.04%	3.35%	0.00%	5.50%	0.00%
Hilton Worldwide Holdings Inc	HLT	145.11	279	Excl.	Excl.	n/a	n/a		n/a
Carnival Corp	CCL	19.81	986	Excl.	Excl.	n/a	n/a		n/a
Qorvo Inc	QRVO	137.28	110	Excl.	Excl.	n/a	n/a	27.00%	n/a
Lumen Technologies Inc	LUMN	12.36	1,024	12,655	0.04%	8.09%	0.00%	3.50%	0.00%
UDR Inc	UDR	56.84	309	17,574	0.06%	2.55%	0.00%	6.00%	0.00%
Clorox Co/The	CLX	167.86	123	20,624	0.07%	2.76%	0.00%	5.00%	0.00%
Paycom Software Inc	PAYC	335.30	60	20,127	0.07%	n/a	n/a	20.00%	0.01%
CMS Energy Corp	CMS	64.38	290	18,651	0.06%	2.86%	0.00%	6.00%	0.00%
Newell Brands Inc	NWL	23.21	425	Excl.	Excl.	3.96%	n/a		n/a
Colgate-Palmolive Co	CL	82.45	843	69,493	0.23%	2.18%	0.01%	5.00%	0.01%
EPAM Systems Inc	EPAM	476.14	57	Excl.	Excl.	n/a	n/a	23.50%	n/a
Comerica Inc	CMA	92.78	131	12,154	0.04%	2.93%	0.00%	2.50%	0.00%
IPG Photonics Corp	IPGP	154.47	53	8,235	0.03%	n/a	n/a	17.00%	0.00%
Conagra Brands Inc	CAG	34.76	480	16,674	0.06%	3.60%	0.00%	4.50%	0.00%
Consolidated Edison Inc	ED	86.45	354	30,582	0.10%	3.66%	0.00%	3.00%	0.00%
Corning Inc	GLW	42.04	830	34,893	0.12%	2.28%	0.00%	20.00%	0.02%
Cummins Inc	CMI	220.88	143	31,593	0.10%	2.63%	0.00%	7.00%	0.01%
Caesars Entertainment Inc	CZR	76.14	214	Excl.	Excl.	n/a	n/a		n/a
Danaher Corp	DHR	285.79	715	Excl.	Excl.	0.29%	n/a	21.00%	n/a
Target Corp	TGT	220.43	479	105,613	0.35%	1.63%	0.01%	15.00%	0.05%
Deere & Co	DE	376.40	308	Excl.	Excl.	1.12%	n/a	21.50%	n/a
Dominion Energy Inc	D	80.66	810	65,335	0.22%	3.31%	0.01%	12.00%	0.03%
Dover Corp	DOV	169.91	144	24,464	0.08%	1.18%	0.00%	9.00%	0.01%
Alliant Energy Corp	LNT	59.86	250	14,987	0.05%	2.86%	0.00%	5.50%	0.00%
Duke Energy Corp	DUK	105.06	769	80,791	0.27%	3.75%	0.01%	7.00%	0.02%
Regency Centers Corp	REG	71.75	171	12,285	0.04%	3.48%	0.00%	16.00%	0.01%
Eaton Corp PLC	ETN	158.43	399	63,150	0.21%	1.92%	0.00%	11.50%	0.02%
Ecolab Inc	ECL	189.45	287	54,290	0.18%	1.08%	0.00%	6.00%	0.01%
PerkinElmer Inc	PKI	172.17	126	21,728	0.07%	0.16%	0.00%	12.00%	0.01%
Emerson Electric Co	EMR	91.95	596	54,775	0.18%	2.24%	0.00%	11.50%	0.02%
EOG Resources Inc	EOG	111.48	585	65,226	0.22%	2.69%	0.01%	16.00%	0.03%
Aon PLC	AON	276.44	220	60,909	0.20%	0.74%	0.00%	7.00%	0.01%
Entergy Corp	ETR	111.77	201	22,464	0.07%	3.61%	0.00%	3.00%	0.00%
Equifax Inc	EFX	239.76	122	29,251	0.10%	0.65%	0.00%	11.00%	0.01%
IQVIA Holdings Inc	IQV	244.90	191	46,786	0.15%	n/a	n/a	15.50%	0.02%
Gartner Inc	IT	293.89	82	Excl.	Excl.	n/a	n/a	20.50%	n/a
FedEx Corp	FDX	245.86	265	65,145	0.21%	1.22%	0.00%	13.00%	0.03%
FMC Corp	FMC	110.37	127	13,990	0.05%	1.92%	0.00%	10.50%	0.00%
Brown & Brown Inc	BRO	66.28	282	18,719	0.06%	0.62%	0.00%	10.50%	0.01%
Ford Motor Co	F	20.30	3,925	Excl.	Excl.	1.97%	n/a	47.50%	n/a
NextEra Energy Inc	NEE	78.12	1,962	153,282	0.51%	1.97%	0.01%	10.50%	0.05%
Franklin Resources Inc	BEN	31.97	503	16,066	0.05%	3.63%	0.00%	11.00%	0.01%
Garmin Ltd	GRMN	124.42	192	23,929	0.08%	2.15%	0.00%	10.00%	0.01%
Freeport-McMoRan Inc	FCX	37.22	1,468	Excl.	Excl.	0.81%	n/a	37.50%	n/a
Gap Inc/The	GPS	18.07	373	Excl.	Excl.	2.66%	n/a	27.00%	n/a
Dexcom Inc	DXCM	430.48	97	Excl.	Excl.	n/a	n/a		n/a
General Dynamics Corp	GD	212.10	279	59,223	0.20%	2.24%	0.00%	6.00%	0.01%
General Mills Inc	GIS	68.68	603	41,428	0.14%	2.97%	0.00%	3.50%	0.00%
Genuine Parts Co	GPC	133.23	142	18,975	0.06%	2.45%	0.00%	7.00%	0.00%
Atmos Energy Corp	ATO	107.22	133	14,229	0.05%	2.54%	0.00%	7.00%	0.00%
WW Grainger Inc	GWW	495.11	52	25,508	0.08%	1.31%	0.00%	6.50%	0.01%
Halliburton Co	HAL	30.74	895	27,516	0.09%	1.56%	0.00%	9.50%	0.01%
L3Harris Technologies Inc	LHX	209.29	196	Excl.	Excl.	1.95%	n/a		n/a
Healthpeak Properties Inc	PEAK	35.37	539	Excl.	Excl.	3.39%	n/a	-12.00%	n/a
Catalent Inc	CTLT	103.93	171	Excl.	Excl.	n/a	n/a	21.00%	n/a
Fortive Corp	FTV	70.54	359	25,294	0.08%	0.40%	0.00%	6.00%	0.01%
Hershey Co/The	HSY	197.07	145	28,652	0.09%	1.83%	0.00%	6.00%	0.01%
Synchrony Financial	SYF	42.59	527	22,436	0.07%	2.07%	0.00%	9.50%	0.01%
Hormel Foods Corp	HRL	47.47	543	25,756	0.08%	2.19%	0.00%	6.50%	0.01%
Arthur J Gallagher & Co	AJG	157.94	209	32,930	0.11%	1.29%	0.00%	14.50%	0.02%
Mondelez International Inc	MDLZ	67.03	1,395	93,505	0.31%	2.09%	0.01%	8.00%	0.02%
CenterPoint Energy Inc	CNP	28.36	629	17,835	0.06%	2.40%	0.00%	4.50%	0.00%
Humana Inc	HUM	392.50	129	50,450	0.17%	0.71%	0.00%	12.00%	0.02%
Willis Towers Watson PLC	WTW	233.96	125	29,153	0.10%	1.37%	0.00%	11.00%	0.01%
Illinois Tool Works Inc	ITW	233.92	314	73,423	0.24%	2.09%	0.01%	10.50%	0.03%
CDW Corp/DE	CDW	189.05	136	25,658	0.08%	1.06%	0.00%	11.00%	0.01%
Trane Technologies PLC	TT	173.10	238	Excl.	Excl.	1.36%	n/a		n/a
Interpublic Group of Cos Inc/The	IPG	35.54	394	13,994	0.05%	3.04%	0.00%	12.00%	0.01%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	Price	Shares Outstanding	Market Capitalization	[4]	[5]	[6]	[7]	[8]
					Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
International Flavors & Fragrances Inc	IFF	131.92	255	33,580	0.11%	2.40%	0.00%	7.50%	0.01%
Jacobs Engineering Group Inc	J	130.18	129	16,852	0.06%	0.71%	0.00%	15.00%	0.01%
Generac Holdings Inc	GNRC	282.38	63	Excl.	Excl.	n/a	n/a	23.50%	n/a
NXP Semiconductors NV	NXPI	205.44	266	54,633	0.18%	1.65%	0.00%	11.00%	0.02%
Kellogg Co	K	63.00	341	21,491	0.07%	3.68%	0.00%	3.50%	0.00%
Broadridge Financial Solutions Inc	BR	159.22	117	18,562	0.06%	1.61%	0.00%	9.50%	0.01%
Kimberly-Clark Corp	KMB	137.65	337	46,349	0.15%	3.37%	0.01%	4.50%	0.01%
Kimco Realty Corp	KIM	24.26	616	14,955	0.05%	2.80%	0.00%	10.50%	0.01%
Oracle Corp	ORCL	81.16	2,670	216,733	0.72%	1.58%	0.01%	10.00%	0.07%
Kroger Co/The	KR	43.59	735	32,050	0.11%	1.93%	0.00%	6.50%	0.01%
Lennar Corp	LEN	96.11	261	25,121	0.08%	1.56%	0.00%	12.50%	0.01%
Eli Lilly & Co	LLY	245.39	957	234,738	0.77%	1.60%	0.01%	12.00%	0.09%
Bath & Body Works Inc	BBWI	56.07	258	Excl.	Excl.	1.07%	n/a	26.00%	n/a
Charter Communications Inc	CHTR	593.34	173	Excl.	Excl.	n/a	n/a	29.50%	n/a
Lincoln National Corp	LNC	69.98	181	12,646	0.04%	2.57%	0.00%	9.00%	0.00%
Loews Corp	L	59.66	254	15,135	0.05%	0.42%	0.00%	12.50%	0.01%
Lowe's Cos Inc	LOW	237.35	674	159,914	0.53%	1.35%	0.01%	16.50%	0.09%
IDEX Corp	IEX	215.44	76	16,380	0.05%	1.00%	0.00%	8.00%	0.00%
Marsh & McLennan Cos Inc	MMC	153.64	505	77,572	0.26%	1.39%	0.00%	12.00%	0.03%
Masco Corp	MAS	63.33	244	15,458	0.05%	1.48%	0.00%	10.00%	0.01%
S&P Global Inc	SPGI	415.22	241	100,068	0.33%	0.74%	0.00%	10.50%	0.03%
Medtronic PLC	MDT	103.49	1,345	139,148	0.46%	2.44%	0.01%	9.00%	0.04%
Viatis Inc	VTRS	14.97	1,209	Excl.	Excl.	3.21%	n/a	n/a	n/a
CVS Health Corp	CVS	106.51	1,320	140,599	0.46%	2.07%	0.01%	6.00%	0.03%
DuPont de Nemours Inc	DD	76.60	518	Excl.	Excl.	1.57%	n/a	n/a	n/a
Micron Technology Inc	MU	82.27	1,120	Excl.	Excl.	0.49%	n/a	22.50%	n/a
Motorola Solutions Inc	MSI	231.94	169	39,174	0.13%	1.36%	0.00%	7.00%	0.01%
Cboe Global Markets Inc	CBOE	118.53	107	12,640	0.04%	1.62%	0.00%	12.00%	0.01%
Laboratory Corp of America Holdings	LH	271.36	96	25,969	0.09%	n/a	n/a	6.00%	0.01%
Newmont Corp	NEM	61.17	797	48,779	0.16%	3.60%	0.01%	12.00%	0.02%
NIKE Inc	NKE	148.07	1,276	Excl.	Excl.	0.82%	n/a	27.00%	n/a
NiSource Inc	NI	29.18	393	11,459	0.04%	3.22%	0.00%	8.50%	0.00%
Norfolk Southern Corp	NSC	271.99	240	65,322	0.22%	1.82%	0.00%	10.50%	0.02%
Principal Financial Group Inc	PFGE	73.06	265	19,366	0.06%	3.50%	0.00%	6.00%	0.00%
Eversource Energy	ES	89.49	344	30,809	0.10%	2.69%	0.00%	6.50%	0.01%
Northrop Grumman Corp	NOC	369.90	156	57,742	0.19%	1.70%	0.00%	8.50%	0.02%
Wells Fargo & Co	WFC	53.80	3,886	209,056	0.69%	1.86%	0.01%	5.50%	0.04%
Nucor Corp	NUE	101.40	286	28,980	0.10%	1.97%	0.00%	12.00%	0.01%
PVH Corp	PVH	95.01	70	6,649	0.02%	0.16%	0.00%	14.00%	0.00%
Occidental Petroleum Corp	OXY	37.67	934	Excl.	Excl.	0.11%	n/a	36.50%	n/a
Omnicom Group Inc	OMC	75.36	213	16,018	0.05%	3.72%	0.00%	6.00%	0.00%
ONEOK Inc	OKE	60.68	446	27,059	0.09%	6.16%	0.01%	10.00%	0.01%
Raymond James Financial Inc	RJF	105.87	208	21,978	0.07%	1.28%	0.00%	10.50%	0.01%
Parker-Hannifin Corp	PH	310.01	129	39,841	0.13%	1.33%	0.00%	13.50%	0.02%
Rollins Inc	ROL	30.85	492	15,180	0.05%	1.30%	0.00%	11.50%	0.01%
PPL Corp	PPL	29.68	751	Excl.	Excl.	5.59%	n/a	n/a	n/a
ConocoPhillips	COP	88.62	1,319	116,885	0.39%	0.23%	0.00%	16.50%	0.06%
PulteGroup Inc	PHM	52.69	253	13,340	0.04%	1.14%	0.00%	13.00%	0.01%
Pinnacle West Capital Corp	PNW	69.61	113	Excl.	Excl.	4.88%	n/a	n/a	n/a
PNC Financial Services Group Inc/The	PNC	205.99	420	86,516	0.29%	2.43%	0.01%	11.50%	0.03%
PPG Industries Inc	PPG	156.20	237	37,082	0.12%	1.51%	0.00%	10.00%	0.01%
Progressive Corp/The	PGR	108.66	584	63,501	0.21%	0.37%	0.00%	5.00%	0.01%
Public Service Enterprise Group Inc	PEG	66.53	506	33,642	0.11%	3.07%	0.00%	3.50%	0.00%
Robert Half International Inc	RHI	113.26	111	12,609	0.04%	1.34%	0.00%	7.50%	0.00%
Edison International	EIX	62.79	380	Excl.	Excl.	4.46%	n/a	n/a	n/a
Schlumberger NV	SLB	39.07	1,403	54,830	0.18%	1.28%	0.00%	11.50%	0.02%
Charles Schwab Corp/The	SCHW	87.70	1,811	158,852	0.52%	0.91%	0.00%	7.00%	0.04%
Sherwin-Williams Co/The	SHW	286.51	262	75,122	0.25%	0.77%	0.00%	10.50%	0.03%
West Pharmaceutical Services Inc	WST	393.22	74	29,130	0.10%	0.18%	0.00%	17.00%	0.02%
J M Smucker Co/The	SJM	140.58	108	15,234	0.05%	2.82%	0.00%	4.00%	0.00%
Snap-on Inc	SNA	208.25	54	11,149	0.04%	2.73%	0.00%	4.50%	0.00%
AMETEK Inc	AME	136.77	231	31,638	0.10%	0.58%	0.00%	9.00%	0.01%
Southern Co/The	SO	69.49	1,060	73,646	0.24%	3.80%	0.01%	6.00%	0.01%
Truist Financial Corp	TFC	62.82	1,328	83,414	0.28%	3.06%	0.01%	7.00%	0.02%
Southwest Airlines Co	LUV	44.76	592	Excl.	Excl.	n/a	n/a	34.00%	n/a
W R Berkley Corp	WRB	84.50	177	14,938	0.05%	0.62%	0.00%	14.50%	0.01%
Stanley Black & Decker Inc	SWK	174.65	163	28,474	0.09%	1.81%	0.00%	6.00%	0.01%
Public Storage	PSA	358.53	175	62,870	0.21%	2.23%	0.00%	6.50%	0.01%
Arista Networks Inc	ANET	124.31	307	38,198	0.13%	n/a	n/a	4.50%	0.01%
Sysco Corp	SYYS	78.15	513	40,064	0.13%	2.41%	0.00%	17.50%	0.02%
Corteva Inc	CTVA	48.08	730	Excl.	Excl.	1.16%	n/a	n/a	n/a
Texas Instruments Inc	TXN	179.49	924	165,849	0.55%	2.56%	0.01%	9.00%	0.05%
Textron Inc	TXT	68.06	220	15,002	0.05%	0.12%	0.00%	8.50%	0.00%
Thermo Fisher Scientific Inc	TMO	581.30	394	229,060	0.76%	0.18%	0.00%	15.00%	0.11%
TJX Cos Inc/The	TJX	71.97	1,193	85,851	0.28%	1.45%	0.00%	20.00%	0.06%
Globe Life Inc	GL	102.30	101	10,330	0.03%	0.77%	0.00%	8.00%	0.00%
Johnson Controls International plc	JCI	72.67	703	51,060	0.17%	1.87%	0.00%	14.00%	0.02%
Ulta Beauty Inc	ULTA	363.74	54	19,686	0.06%	n/a	n/a	15.50%	0.01%
Union Pacific Corp	UNP	244.55	643	157,215	0.52%	1.93%	0.01%	10.00%	0.05%

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Keysight Technologies Inc	KEYS	168.82	183	30,854	0.10%	n/a	n/a	17.00%	0.02%
UnitedHealth Group Inc	UNH	472.57	942	445,091	1.47%	1.23%	0.02%	12.00%	0.18%
Marathon Oil Corp	MRO	19.47	779	Excl.	Excl.	1.44%	n/a	n/a	n/a
Bio-Rad Laboratories Inc	BIO	599.73	25	14,895	0.05%	n/a	n/a	11.50%	0.01%
Ventas Inc	VTR	53.02	399	21,164	0.07%	3.39%	0.00%	4.50%	0.00%
VF Corp	VFC	65.21	389	25,360	0.08%	3.07%	0.00%	9.50%	0.01%
Vornado Realty Trust	VNO	41.01	192	Excl.	Excl.	5.17%	n/a	-22.50%	n/a
Vulcan Materials Co	VMC	190.31	133	25,255	0.08%	0.78%	0.00%	10.00%	0.01%
Weyerhaeuser Co	WY	40.43	747	Excl.	Excl.	1.68%	n/a	22.00%	n/a
Whirlpool Corp	WHR	210.19	59	12,401	0.04%	2.66%	0.00%	9.50%	0.00%
Williams Cos Inc/The	WMB	29.94	1,215	36,378	0.12%	5.48%	0.01%	10.50%	0.01%
WEC Energy Group Inc	WEC	97.04	315	30,610	0.10%	3.00%	0.00%	6.50%	0.01%
Adobe Inc	ADBE	534.30	472	252,029	0.83%	n/a	n/a	15.50%	0.13%
AES Corp/The	AES	22.18	667	Excl.	Excl.	2.85%	n/a	24.00%	n/a
Amgen Inc	AMGN	227.14	563	127,940	0.42%	3.42%	0.01%	5.50%	0.02%
Apple Inc	AAPL	174.78	16,319	2,852,312	9.41%	0.50%	0.05%	13.00%	1.22%
Autodesk Inc	ADSK	249.79	220	54,947	0.18%	n/a	n/a	18.00%	0.03%
Cintas Corp	CTAS	391.53	104	40,615	0.13%	0.97%	0.00%	13.50%	0.02%
Comcast Corp	CMCSA	49.99	4,559	227,928	0.75%	2.16%	0.02%	11.00%	0.08%
Molson Coors Beverage Co	TAP	47.66	201	Excl.	Excl.	2.85%	n/a	41.00%	n/a
KLA Corp	KLAC	389.27	151	58,669	0.19%	1.08%	0.00%	19.50%	0.04%
Marriott International Inc/MD	MAR	161.12	326	52,474	0.17%	n/a	n/a	17.50%	0.03%
McCormick & Co Inc/MD	MKC	100.31	250	25,052	0.08%	1.48%	0.00%	6.00%	0.00%
PACCAR Inc	PCAR	92.99	347	32,295	0.11%	1.46%	0.00%	5.00%	0.01%
Costco Wholesale Corp	COST	505.13	443	223,991	0.74%	0.63%	0.00%	10.50%	0.08%
First Republic Bank/CA	FRC	173.59	179	31,083	0.10%	0.51%	0.00%	13.50%	0.01%
Stryker Corp	SYK	248.05	377	93,574	0.31%	1.12%	0.00%	11.00%	0.03%
Tyson Foods Inc	TSN	90.89	293	26,637	0.09%	2.02%	0.00%	6.00%	0.01%
Lamb Weston Holdings Inc	LW	64.21	145	9,324	0.03%	1.53%	0.00%	6.00%	0.00%
Applied Materials Inc	AMAT	138.18	888	122,703	0.40%	0.69%	0.00%	16.50%	0.07%
American Airlines Group Inc	AAL	16.47	648	Excl.	Excl.	n/a	n/a	n/a	n/a
Cardinal Health Inc	CAH	51.57	282	14,532	0.05%	3.81%	0.00%	12.00%	0.01%
Cerner Corp	CERN	91.20	292	26,650	0.09%	1.18%	0.00%	11.00%	0.01%
Cincinnati Financial Corp	CINF	117.83	161	18,987	0.06%	2.34%	0.00%	17.50%	0.01%
ViacomCBS Inc	VIAC	33.45	607	20,294	0.07%	2.87%	0.00%	7.00%	0.00%
DR Horton Inc	DHI	89.22	356	31,778	0.10%	1.01%	0.00%	11.00%	0.01%
Electronic Arts Inc	EA	132.66	283	37,517	0.12%	0.51%	0.00%	10.50%	0.01%
Expeditors International of Washington Inc	EXPD	114.48	169	19,393	0.06%	1.01%	0.00%	10.00%	0.01%
Fastenal Co	FAST	56.68	575	32,617	0.11%	2.19%	0.00%	9.00%	0.01%
M&T Bank Corp	MTB	169.38	129	21,797	0.07%	2.83%	0.00%	8.00%	0.01%
Xcel Energy Inc	XEL	69.66	539	37,524	0.12%	2.63%	0.00%	6.00%	0.01%
Fiserv Inc	FISV	105.70	660	69,787	0.23%	n/a	n/a	13.00%	0.03%
Fifth Third Bancorp	FITB	44.63	683	30,472	0.10%	2.69%	0.00%	9.50%	0.01%
Gilead Sciences Inc	GILD	68.68	1,254	86,151	0.28%	4.14%	0.01%	3.50%	0.01%
Hasbro Inc	HAS	92.48	138	12,757	0.04%	2.94%	0.00%	11.50%	0.00%
Huntington Bancshares Inc/OH	HBAN	15.06	1,446	21,784	0.07%	4.12%	0.00%	9.00%	0.01%
Welltower Inc	WELL	86.63	435	Excl.	Excl.	2.82%	n/a	-1.50%	n/a
Biogen Inc	BIIB	226.00	147	33,198	0.11%	n/a	n/a	7.00%	0.01%
Northern Trust Corp	NTRS	116.64	208	24,222	0.08%	2.40%	0.00%	7.00%	0.01%
Packaging Corp of America	PKG	150.63	95	14,308	0.05%	2.66%	0.00%	9.00%	0.00%
Paychex Inc	PAYX	117.76	361	42,483	0.14%	2.24%	0.00%	9.00%	0.01%
People's United Financial Inc	PBCT	19.38	428	8,293	0.03%	3.77%	0.00%	2.50%	0.00%
QUALCOMM Inc	QCOM	175.76	1,125	197,744	0.65%	1.55%	0.01%	18.50%	0.12%
Roper Technologies Inc	ROP	437.16	105	46,114	0.15%	0.57%	0.00%	8.50%	0.01%
Ross Stores Inc	ROST	97.75	353	34,538	0.11%	1.17%	0.00%	14.00%	0.02%
IDEXX Laboratories Inc	IDXX	507.30	85	43,016	0.14%	n/a	n/a	14.50%	0.02%
Starbucks Corp	SBUX	98.32	1,155	113,512	0.37%	1.99%	0.01%	16.00%	0.06%
KeyCorp	KEY	25.06	929	23,277	0.08%	3.11%	0.00%	9.50%	0.01%
Fox Corp	FOXA	40.61	320	13,009	0.04%	1.18%	0.00%	10.50%	0.00%
Fox Corp	FOX	37.18	249	Excl.	Excl.	1.29%	n/a	n/a	n/a
State Street Corp	STT	94.50	366	34,552	0.11%	2.41%	0.00%	8.00%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	20.83	417	Excl.	Excl.	n/a	n/a	n/a	n/a
US Bancorp	USB	58.19	1,484	86,354	0.28%	3.16%	0.01%	6.50%	0.02%
A O Smith Corp	AOS	76.42	133	10,178	0.03%	1.47%	0.00%	10.00%	0.00%
NortonLifeLock Inc	NLOK	26.01	582	15,134	0.05%	1.92%	0.00%	11.00%	0.01%
T Rowe Price Group Inc	TROW	154.43	229	35,395	0.12%	2.80%	0.00%	12.00%	0.01%
Waste Management Inc	WM	150.44	418	62,931	0.21%	1.53%	0.00%	7.50%	0.02%
Constellation Brands Inc	STZ	237.75	164	39,072	0.13%	1.28%	0.00%	5.50%	0.01%
Xilinx Inc	XLNX	193.55	248	48,074	0.16%	0.76%	0.00%	8.50%	0.01%
DENTSPLY SIRONA Inc	XRAY	53.42	219	11,678	0.04%	0.82%	0.00%	5.50%	0.00%
Zions Bancorp NA	ZION	67.82	152	10,283	0.03%	2.24%	0.00%	7.50%	0.00%
Alaska Air Group Inc	ALK	54.74	125	Excl.	Excl.	n/a	n/a	n/a	n/a
Invesco Ltd	IVZ	22.66	461	10,451	0.03%	3.00%	0.00%	15.50%	0.01%
Linde PLC	LIN	318.68	509	Excl.	Excl.	1.33%	n/a	n/a	n/a
Intuit Inc	INTU	555.23	283	157,223	0.52%	0.49%	0.00%	18.50%	0.10%
Morgan Stanley	MS	102.54	1,772	181,701	0.60%	2.73%	0.02%	10.50%	0.06%
Microchip Technology Inc	MCHP	77.48	555	42,991	0.14%	1.20%	0.00%	10.50%	0.01%
Chubb Ltd	CB	197.28	431	84,977	0.28%	1.62%	0.00%	12.50%	0.04%
Hologic Inc	HOLX	70.24	251	Excl.	Excl.	n/a	n/a	25.00%	n/a

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Citizens Financial Group Inc	CFG	51.47	426	21,937	0.07%	3.03%	0.00%	8.50%	0.01%
O'Reilly Automotive Inc	ORLY	651.75	67	43,914	0.14%	n/a	n/a	13.00%	0.02%
Allstate Corp/The	ALL	120.67	287	34,593	0.11%	2.69%	0.00%	5.00%	0.01%
Equity Residential	EQR	88.73	375	33,275	0.11%	2.72%	0.00%	2.00%	0.00%
BorgWarner Inc	BWA	43.85	240	10,514	0.03%	1.55%	0.00%	8.00%	0.00%
Organon & Co	OGN	31.91	254	Excl.	Excl.	3.51%	n/a	n/a	n/a
Host Hotels & Resorts Inc	HST	17.34	714	12,381	0.04%	n/a	n/a	10.00%	0.00%
Incyte Corp	INCY	74.33	221	Excl.	Excl.	n/a	n/a	n/a	n/a
Simon Property Group Inc	SPG	147.20	329	48,372	0.16%	4.48%	0.01%	1.50%	0.00%
Eastman Chemical Co	EMN	118.93	134	15,989	0.05%	2.56%	0.00%	8.00%	0.00%
Twitter Inc	TWTR	37.51	800	Excl.	Excl.	n/a	n/a	39.00%	n/a
AvalonBay Communities Inc	AVB	244.23	140	34,129	0.11%	2.60%	0.00%	1.50%	0.00%
Prudential Financial Inc	PRU	111.57	378	42,173	0.14%	4.12%	0.01%	4.50%	0.01%
United Parcel Service Inc	UPS	202.21	729	147,443	0.49%	2.02%	0.01%	11.50%	0.06%
Walgreens Boots Alliance Inc	WBA	49.76	863	42,956	0.14%	3.84%	0.01%	7.50%	0.01%
STERIS PLC	STE	224.40	100	22,445	0.07%	0.77%	0.00%	12.00%	0.01%
McKesson Corp	MCK	256.72	153	39,197	0.13%	0.73%	0.00%	9.50%	0.01%
Lockheed Martin Corp	LMT	389.13	272	105,971	0.35%	2.88%	0.01%	7.50%	0.03%
AmerisourceBergen Corp	ABC	136.20	209	28,476	0.09%	1.35%	0.00%	6.50%	0.01%
Capital One Financial Corp	COF	146.73	414	Excl.	Excl.	1.64%	n/a	n/a	n/a
Waters Corp	WAT	320.12	61	19,539	0.06%	n/a	n/a	6.00%	0.00%
Dollar Tree Inc	DLTR	131.22	225	29,519	0.10%	n/a	n/a	10.00%	0.01%
Darden Restaurants Inc	DRI	139.87	128	17,865	0.06%	3.15%	0.00%	19.50%	0.01%
Match Group Inc	MTCH	112.70	283	31,904	0.11%	n/a	n/a	18.50%	0.02%
Domino's Pizza Inc	DPZ	454.65	36	16,543	0.05%	0.83%	0.00%	15.00%	0.01%
NVR Inc	NVR	5,327.22	3	18,555	0.06%	n/a	n/a	9.00%	0.01%
NetApp Inc	NTAP	86.51	222	19,229	0.06%	2.31%	0.00%	8.00%	0.01%
Citrix Systems Inc	CTXS	101.94	125	12,734	0.04%	1.45%	0.00%	8.00%	0.00%
DXC Technology Co	DXC	30.08	252	7,587	0.03%	n/a	n/a	6.00%	0.00%
Old Dominion Freight Line Inc	ODFL	301.93	115	34,725	0.11%	0.26%	0.00%	11.50%	0.01%
DaVita Inc	DVA	108.37	102	11,043	0.04%	n/a	n/a	16.00%	0.01%
Hartford Financial Services Group Inc/The	HIG	71.87	340	24,461	0.08%	2.14%	0.00%	6.50%	0.01%
Iron Mountain Inc	IRM	45.92	290	13,296	0.04%	5.39%	0.00%	8.50%	0.00%
Estee Lauder Cos Inc/The	EL	311.79	232	72,243	0.24%	0.77%	0.00%	11.50%	0.03%
Cadence Design Systems Inc	CDNS	152.14	277	42,164	0.14%	n/a	n/a	12.00%	0.02%
Tyler Technologies Inc	TYL	473.80	41	19,414	0.06%	n/a	n/a	14.00%	0.01%
Universal Health Services Inc	UHS	130.06	73	9,510	0.03%	0.62%	0.00%	11.00%	0.00%
Skyworks Solutions Inc	SWKS	146.52	165	24,233	0.08%	1.53%	0.00%	16.00%	0.01%
Quest Diagnostics Inc	DGX	135.02	123	16,564	0.05%	1.84%	0.00%	7.50%	0.00%
Activision Blizzard Inc	ATVI	79.01	779	61,553	0.20%	0.59%	0.00%	15.00%	0.03%
Rockwell Automation Inc	ROK	289.22	116	33,606	0.11%	1.55%	0.00%	10.00%	0.01%
Kraft Heinz Co/The	KHC	35.80	1,224	43,821	0.14%	4.47%	0.01%	4.00%	0.01%
American Tower Corp	AMT	251.50	455	114,537	0.38%	2.21%	0.01%	9.50%	0.04%
Regeneron Pharmaceuticals Inc	REGN	608.59	106	64,340	0.21%	n/a	n/a	12.50%	0.03%
Amazon.com Inc	AMZN	2,991.47	507	Excl.	Excl.	n/a	n/a	26.50%	n/a
Jack Henry & Associates Inc	JKHY	167.81	74	12,425	0.04%	1.10%	0.00%	10.50%	0.00%
Ralph Lauren Corp	RL	110.84	49	5,402	0.02%	2.48%	0.00%	12.50%	0.00%
Boston Properties Inc	BXP	112.08	157	Excl.	Excl.	3.50%	n/a	-2.00%	n/a
Amphenol Corp	APH	79.59	598	47,597	0.16%	1.01%	0.00%	12.00%	0.02%
Howmet Aerospace Inc	HWM	31.09	427	13,282	0.04%	0.26%	0.00%	12.00%	0.01%
Pioneer Natural Resources Co	PXD	218.89	244	Excl.	Excl.	1.13%	n/a	23.00%	n/a
Valero Energy Corp	VLO	82.97	409	33,921	0.11%	4.72%	0.01%	13.00%	0.01%
Synopsys Inc	SNPS	310.50	153	47,642	0.16%	n/a	n/a	14.00%	0.02%
Etsy Inc	ETSY	157.08	127	Excl.	Excl.	n/a	n/a	29.00%	n/a
CH Robinson Worldwide Inc	CHRW	104.65	130	13,603	0.04%	2.10%	0.00%	9.00%	0.00%
Accenture PLC	ACN	353.58	658	232,773	0.77%	1.10%	0.01%	12.00%	0.09%
TransDigm Group Inc	TDG	616.19	55	34,044	0.11%	n/a	n/a	16.50%	0.02%
Yum! Brands Inc	YUM	125.17	293	36,691	0.12%	1.60%	0.00%	11.00%	0.01%
Prologis Inc	PLD	156.82	740	116,007	0.38%	1.61%	0.01%	8.50%	0.03%
FirstEnergy Corp	FE	41.96	544	22,844	0.08%	3.72%	0.00%	11.50%	0.01%
VeriSign Inc	VRSN	217.18	111	24,124	0.08%	n/a	n/a	8.50%	0.01%
Quanta Services Inc	PWR	102.72	142	14,637	0.05%	0.27%	0.00%	12.50%	0.01%
Henry Schein Inc	HSIC	75.30	139	10,442	0.03%	n/a	n/a	6.50%	0.00%
Ameren Corp	AEE	88.74	255	22,665	0.07%	2.48%	0.00%	6.50%	0.00%
ANSYS Inc	ANSS	340.01	87	29,667	0.10%	n/a	n/a	8.50%	0.01%
FactSet Research Systems Inc	FDS	421.89	38	15,946	0.05%	0.78%	0.00%	9.50%	0.00%
NVIDIA Corp	NVDA	244.86	2,500	612,150	2.02%	0.07%	0.00%	20.00%	0.40%
Sealed Air Corp	SEE	67.92	148	10,063	0.03%	1.18%	0.00%	13.50%	0.00%
Cognizant Technology Solutions Corp	CTSH	85.42	525	44,867	0.15%	1.12%	0.00%	7.00%	0.01%
SVB Financial Group	SIVB	583.90	59	34,303	0.11%	n/a	n/a	5.00%	0.01%
Intuitive Surgical Inc	ISRG	284.18	357	101,520	0.34%	n/a	n/a	16.00%	0.05%
Take-Two Interactive Software Inc	TTWO	163.34	115	18,833	0.06%	n/a	n/a	15.00%	0.01%
Republic Services Inc	RSG	127.66	317	40,480	0.13%	1.44%	0.00%	11.00%	0.01%
eBay Inc	EBAY	60.07	626	37,604	0.12%	1.20%	0.00%	16.50%	0.02%
Goldman Sachs Group Inc/The	GS	354.68	335	118,744	0.39%	2.26%	0.01%	8.50%	0.03%
SBA Communications Corp	SBAC	325.44	109	Excl.	Excl.	0.71%	n/a	45.00%	n/a
Sempra Energy	SRE	138.16	315	43,530	0.14%	3.18%	0.00%	10.00%	0.01%
Moody's Corp	MCO	343.00	186	63,764	0.21%	0.72%	0.00%	10.00%	0.02%
Booking Holdings Inc	BKNG	2,456.13	41	100,856	0.33%	n/a	n/a	14.00%	0.05%

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Name	Ticker	Price	Shares Outstanding	Market Capitalization	[4]	[5]	[6]	[7]	[8]
					Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
F5 Inc	FFIV	207.62	61	12,609	0.04%	n/a	n/a	7.00%	0.00%
Akamai Technologies Inc	AKAM	114.55	162	18,612	0.06%	n/a	n/a	9.50%	0.01%
Charles River Laboratories International Inc	CRL	329.76	50	16,641	0.05%	n/a	n/a	7.00%	0.00%
MarketAxess Holdings Inc	MKTX	344.48	38	13,099	0.04%	0.81%	0.00%	14.00%	0.01%
Devon Energy Corp	DVN	50.57	677	Excl.	Excl.	6.64%	n/a	n/a	n/a
Alphabet Inc	GOOGL	2,706.07	301	Excl.	Excl.	n/a	n/a	n/a	n/a
Bio-Techne Corp	TECH	376.41	39	14,791	0.05%	0.34%	0.00%	13.00%	0.01%
Teleflex Inc	TFX	310.19	47	14,531	0.05%	0.44%	0.00%	15.00%	0.01%
Netflix Inc	NFLX	427.14	444	Excl.	Excl.	n/a	n/a	23.50%	n/a
Allegion plc	ALLE	122.73	90	11,008	0.04%	1.17%	0.00%	9.50%	0.00%
Agilent Technologies Inc	A	139.32	302	42,075	0.14%	0.60%	0.00%	12.50%	0.02%
Anthem Inc	ANTM	440.99	243	107,035	0.35%	1.16%	0.00%	13.00%	0.05%
Trimble Inc	TRMB	72.16	251	18,113	0.06%	n/a	n/a	14.50%	0.01%
CME Group Inc	CME	229.50	359	82,481	0.27%	1.57%	0.00%	8.50%	0.02%
Juniper Networks Inc	JNPR	34.82	325	11,323	0.04%	2.41%	0.00%	7.00%	0.00%
BlackRock Inc	BLK	822.94	152	125,019	0.41%	2.37%	0.01%	11.00%	0.05%
DTE Energy Co	DTE	120.43	194	23,334	0.08%	2.94%	0.00%	1.00%	0.00%
Nasdaq Inc	NDAQ	179.21	167	29,968	0.10%	1.21%	0.00%	6.50%	0.01%
Celanese Corp	CE	155.71	109	16,952	0.06%	1.75%	0.00%	6.50%	0.00%
Philip Morris International Inc	PM	102.85	1,557	160,120	0.53%	4.86%	0.03%	7.00%	0.04%
salesforce.com Inc	CRM	232.63	985	229,141	0.76%	n/a	n/a	20.00%	0.15%
Ingersoll Rand Inc	IR	56.21	408	Excl.	Excl.	0.14%	n/a	n/a	n/a
Huntington Ingalls Industries Inc	HII	187.20	40	7,499	0.02%	2.52%	0.00%	7.00%	0.00%
MetLife Inc	MET	67.06	841	56,408	0.19%	2.86%	0.01%	6.50%	0.01%
Under Armour Inc	UA	15.99	253	Excl.	Excl.	n/a	n/a	n/a	n/a
Tapestry Inc	TPR	37.95	275	10,442	0.03%	2.64%	0.00%	10.00%	0.00%
CSX Corp	CSX	34.22	2,218	75,899	0.25%	1.09%	0.00%	11.50%	0.03%
Edwards Lifesciences Corp	EW	109.20	624	68,177	0.22%	n/a	n/a	13.00%	0.03%
Ameriprise Financial Inc	AMP	304.31	112	34,049	0.11%	1.49%	0.00%	13.50%	0.02%
Zebra Technologies Corp	ZBRA	509.12	53	27,208	0.09%	n/a	n/a	13.00%	0.01%
Zimmer Biomet Holdings Inc	ZBH	123.02	209	25,700	0.08%	0.78%	0.00%	8.50%	0.01%
CBRE Group Inc	CBRE	101.34	335	33,915	0.11%	n/a	n/a	10.50%	0.01%
Mastercard Inc	MA	386.38	972	375,561	1.24%	0.51%	0.01%	13.00%	0.16%
CarMax Inc	KMX	111.17	162	17,974	0.06%	n/a	n/a	13.50%	0.01%
Intercontinental Exchange Inc	ICE	126.66	563	71,361	0.24%	1.04%	0.00%	8.00%	0.02%
Fidelity National Information Services Inc	FIS	119.92	609	Excl.	Excl.	1.57%	n/a	28.00%	n/a
Chipotle Mexican Grill Inc	CMG	1,485.58	28	Excl.	Excl.	n/a	n/a	22.00%	n/a
Wynn Resorts Ltd	WYNN	85.45	116	Excl.	Excl.	n/a	n/a	27.00%	n/a
Live Nation Entertainment Inc	LYV	109.51	225	Excl.	Excl.	n/a	n/a	n/a	n/a
Assurant Inc	AIZ	152.51	57	8,690	0.03%	1.78%	0.00%	15.50%	0.00%
NRG Energy Inc	NRG	39.93	245	Excl.	Excl.	3.51%	n/a	-1.50%	n/a
Regions Financial Corp	RF	22.94	953	21,868	0.07%	2.96%	0.00%	10.50%	0.01%
Monster Beverage Corp	MNST	86.72	529	45,887	0.15%	n/a	n/a	13.00%	0.02%
Mosaic Co/The	MOS	39.95	370	Excl.	Excl.	1.13%	n/a	56.50%	n/a
Baker Hughes Co	BKR	27.44	871	Excl.	Excl.	2.62%	n/a	n/a	n/a
Expedia Group Inc	EXPE	183.29	146	Excl.	Excl.	n/a	n/a	n/a	n/a
Everygy Inc	EVRG	64.96	227	14,745	0.05%	3.53%	0.00%	8.00%	0.00%
Discovery Inc	DISCA	27.91	169	4,723	0.02%	n/a	n/a	13.50%	0.00%
CF Industries Holdings Inc	CF	68.87	214	14,771	0.05%	1.74%	0.00%	19.50%	0.01%
Leidos Holdings Inc	LDOS	89.45	140	12,553	0.04%	1.61%	0.00%	9.00%	0.00%
APA Corp	APA	33.21	363	Excl.	Excl.	1.51%	n/a	n/a	n/a
Alphabet Inc	GOOG	2,713.97	318	Excl.	Excl.	n/a	n/a	23.50%	n/a
TE Connectivity Ltd	TEL	143.01	326	46,560	0.15%	1.57%	0.00%	10.00%	0.02%
Cooper Cos Inc/The	COO	398.30	49	19,635	0.06%	0.02%	0.00%	19.00%	0.01%
Discover Financial Services	DFS	115.75	288	33,336	0.11%	1.73%	0.00%	16.00%	0.02%
Visa Inc	V	226.17	1,658	375,086	1.24%	0.66%	0.01%	12.00%	0.15%
Mid-America Apartment Communities Inc	MAA	206.68	115	23,797	0.08%	2.10%	0.00%	9.00%	0.01%
Xylem Inc/NY	XYL	105.02	180	18,938	0.06%	1.07%	0.00%	6.50%	0.00%
Marathon Petroleum Corp	MPC	71.75	616	Excl.	Excl.	3.23%	n/a	n/a	n/a
Tractor Supply Co	TSCO	218.31	114	24,847	0.08%	1.69%	0.00%	11.00%	0.01%
Advanced Micro Devices Inc	AMD	114.25	1,208	Excl.	Excl.	n/a	n/a	30.00%	n/a
ResMed Inc	RMD	228.60	146	33,429	0.11%	0.73%	0.00%	8.50%	0.01%
Mettler-Toledo International Inc	MTD	1,472.68	23	33,851	0.11%	n/a	n/a	12.50%	0.01%
Copart Inc	CPRT	129.25	237	30,657	0.10%	n/a	n/a	12.00%	0.01%
Albemarle Corp	ALB	220.74	117	25,821	0.09%	0.71%	0.00%	6.50%	0.01%
Fortinet Inc	FTNT	297.24	164	Excl.	Excl.	n/a	n/a	24.00%	n/a
Moderna Inc	MRNA	169.33	405	Excl.	Excl.	n/a	n/a	n/a	n/a
Essex Property Trust Inc	ESS	332.50	65	Excl.	Excl.	2.51%	n/a	-0.50%	n/a
Realty Income Corp	O	69.41	566	39,273	0.13%	4.26%	0.01%	3.50%	0.00%
Westrock Co	WRK	46.16	263	12,144	0.04%	2.17%	0.00%	18.50%	0.01%
IHS Markit Ltd	INFO	116.79	399	46,609	0.15%	0.68%	0.00%	10.50%	0.02%
Westinghouse Air Brake Technologies Corp	WAB	88.90	187	16,608	0.05%	0.54%	0.00%	9.50%	0.01%
Pool Corp	POOL	476.25	40	19,092	0.06%	0.67%	0.00%	17.00%	0.01%
Western Digital Corp	WDC	51.74	312	16,123	0.05%	n/a	n/a	9.00%	0.00%
PepsiCo Inc	PEP	173.52	1,383	239,918	0.79%	2.48%	0.02%	6.50%	0.05%
Diamondback Energy Inc	FANG	126.16	181	Excl.	Excl.	1.59%	n/a	n/a	n/a
ServiceNow Inc	NOW	585.78	199	Excl.	Excl.	n/a	n/a	44.50%	n/a
Church & Dwight Co Inc	CHD	102.65	244	25,062	0.08%	1.02%	0.00%	8.00%	0.01%
Duke Realty Corp	DRE	57.78	381	Excl.	Excl.	1.94%	n/a	-2.00%	n/a

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Federal Realty Investment Trust	FRT	127.49	78	9,917	0.03%	3.36%	0.00%	2.00%	0.00%
MGM Resorts International	MGM	42.72	469	Excl.	Excl.	0.02%	n/a	25.00%	n/a
American Electric Power Co Inc	AEP	90.40	504	45,530	0.15%	3.45%	0.01%	6.50%	0.01%
SolarEdge Technologies Inc	SEDG	238.22	53	12,511	0.04%	n/a	n/a	19.50%	0.01%
PTC Inc	PTC	116.26	118	Excl.	Excl.	n/a	n/a	n/a	n/a
JB Hunt Transport Services Inc	JBHT	192.54	105	20,219	0.07%	0.83%	0.00%	10.00%	0.01%
Lam Research Corp	LRCX	589.92	140	82,751	0.27%	1.02%	0.00%	17.50%	0.05%
Mohawk Industries Inc	MHK	157.87	68	10,693	0.04%	n/a	n/a	10.50%	0.00%
Pentair PLC	PNR	63.70	165	10,541	0.03%	1.32%	0.00%	14.00%	0.00%
Vertex Pharmaceuticals Inc	VRTX	243.05	255	61,856	0.20%	n/a	n/a	18.50%	0.04%
Amcor PLC	AMCR	12.01	1,533	18,413	0.06%	4.00%	0.00%	15.00%	0.01%
Meta Platforms Inc	FB	313.26	2,366	Excl.	Excl.	n/a	n/a	21.50%	n/a
T-Mobile US Inc	TMUS	108.17	1,249	135,110	0.45%	n/a	n/a	8.50%	0.04%
United Rentals Inc	URI	320.12	72	23,184	0.08%	n/a	n/a	12.50%	0.01%
ABIOMED Inc	ABMD	295.87	45	13,461	0.04%	n/a	n/a	9.50%	0.00%
Honeywell International Inc	HON	204.48	688	140,769	0.46%	1.92%	0.01%	11.00%	0.05%
Alexandria Real Estate Equities Inc	ARE	194.84	160	31,163	0.10%	2.36%	0.00%	12.00%	0.01%
Delta Air Lines Inc	DAL	39.69	640	Excl.	Excl.	n/a	n/a	49.00%	n/a
Seagate Technology Holdings PLC	STX	107.15	219	23,455	0.08%	2.61%	0.00%	15.00%	0.01%
United Airlines Holdings Inc	UAL	42.88	324	Excl.	Excl.	n/a	n/a	n/a	n/a
News Corp	NWS	22.24	200	Excl.	Excl.	0.90%	n/a	n/a	n/a
Centene Corp	CNC	77.76	584	45,373	0.15%	n/a	n/a	9.50%	0.01%
Martin Marietta Materials Inc	MLM	389.12	62	24,274	0.08%	0.63%	0.00%	10.50%	0.01%
Teradyne Inc	TER	117.43	163	19,142	0.06%	0.37%	0.00%	13.50%	0.01%
PayPal Holdings Inc	PYPL	171.94	1,175	202,017	0.67%	n/a	n/a	16.00%	0.11%
Tesla Inc	TSLA	936.72	1,004	Excl.	Excl.	n/a	n/a	n/a	n/a
DISH Network Corp	DISH	31.40	290	9,117	0.03%	n/a	n/a	4.00%	0.00%
Dow Inc	DOW	59.73	740	Excl.	Excl.	4.69%	n/a	n/a	n/a
Penn National Gaming Inc	PENN	45.61	170	Excl.	Excl.	n/a	n/a	28.00%	n/a
Everest Re Group Ltd	RE	283.40	39	11,157	0.04%	2.19%	0.00%	11.00%	0.00%
Teledyne Technologies Inc	TDY	421.43	47	19,662	0.06%	n/a	n/a	15.00%	0.01%
News Corp	NWSA	22.24	393	Excl.	Excl.	0.90%	n/a	n/a	n/a
Exelon Corp	EXC	57.95	978	56,694	0.19%	2.64%	0.00%	5.50%	0.01%
Global Payments Inc	GPX	149.88	290	43,488	0.14%	0.67%	0.00%	16.50%	0.02%
Crown Castle International Corp	CCI	182.51	432	78,844	0.26%	3.22%	0.01%	8.50%	0.02%
Aptiv PLC	APTIV	136.58	271	Excl.	Excl.	n/a	n/a	21.50%	n/a
Advance Auto Parts Inc	AAP	231.51	62	14,436	0.05%	1.73%	0.00%	11.00%	0.01%
Align Technology Inc	ALGN	494.96	79	39,029	0.13%	n/a	n/a	17.00%	0.02%
Illumina Inc	ILMN	348.82	156	54,521	0.18%	n/a	n/a	10.00%	0.02%
LKQ Corp	LKQ	54.89	291	16,000	0.05%	1.82%	0.00%	14.00%	0.01%
Nielsen Holdings PLC	NLSN	18.86	359	Excl.	Excl.	1.27%	n/a	n/a	n/a
Zoetis Inc	ZTS	199.79	473	94,526	0.31%	0.65%	0.00%	12.00%	0.04%
Equinix Inc	EQIX	724.90	90	65,271	0.22%	1.58%	0.00%	17.00%	0.04%
Digital Realty Trust Inc	DLR	149.23	284	42,350	0.14%	3.11%	0.00%	8.50%	0.01%
Las Vegas Sands Corp	LVS	43.80	764	33,463	0.11%	n/a	n/a	17.00%	0.02%
Discovery Inc	DISCK	27.35	330	Excl.	Excl.	n/a	n/a	n/a	n/a

Notes:

- [4] Source: Bloomberg Professional
- [5] Source: Bloomberg Professional
- [6] Equals [4] x [5]
- [7] Source: Value Line, as of January 31, 2022
- [8] Equals [4] x [7]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VL BETA
CONSTANT GROWTH DCF APPLIED TO S&P 500
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
ALLETE, Inc.	ALE	2.03%	0.90	15.16%	13.13%	13.85%
Alliant Energy Corporation	LNT	2.03%	0.85	15.16%	13.13%	13.19%
Ameren Corporation	AEE	2.03%	0.80	15.16%	13.13%	12.54%
American Electric Power Company, Inc.	AEP	2.03%	0.75	15.16%	13.13%	11.88%
Duke Energy Corporation	DUK	2.03%	0.85	15.16%	13.13%	13.19%
Edison International	EIX	2.03%	0.95	15.16%	13.13%	14.51%
Exelon Corporation	EXC	2.03%	0.95	15.16%	13.13%	14.51%
Evergy, Inc.	EVRG	2.03%	0.95	15.16%	13.13%	14.51%
Hawaiian Electric Industries, Inc.	HE	2.03%	0.85	15.16%	13.13%	13.19%
IDACORP, Inc.	IDA	2.03%	0.80	15.16%	13.13%	12.54%
NextEra Energy, Inc.	NEE	2.03%	0.90	15.16%	13.13%	13.85%
NorthWestern Corporation	NWE	2.03%	0.95	15.16%	13.13%	14.51%
Otter Tail Corporation	OTTR	2.03%	0.90	15.16%	13.13%	13.85%
Pinnacle West Capital Corporation	PNW	2.03%	0.90	15.16%	13.13%	13.85%
Portland General Electric Company	POR	2.03%	0.90	15.16%	13.13%	13.85%
Southern Company	SO	2.03%	0.95	15.16%	13.13%	14.51%
Xcel Energy Inc.	XEL	2.03%	0.80	15.16%	13.13%	12.54%
Mean						13.58%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Value Line

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & VL BETA
 CONSTANT GROWTH DCF APPLIED TO S&P 500
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		Near-term projected 30-year U.S. Treasury bond yield (Q2 2022 - Q2 2023)		Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)
Company	Ticker					ROE (K)
ALLETE, Inc.	ALE	2.58%	0.90	15.16%	12.58%	13.91%
Alliant Energy Corporation	LNT	2.58%	0.85	15.16%	12.58%	13.28%
Ameren Corporation	AEE	2.58%	0.80	15.16%	12.58%	12.65%
American Electric Power Company, Inc.	AEP	2.58%	0.75	15.16%	12.58%	12.02%
Duke Energy Corporation	DUK	2.58%	0.85	15.16%	12.58%	13.28%
Edison International	EIX	2.58%	0.95	15.16%	12.58%	14.53%
Exelon Corporation	EXC	2.58%	0.95	15.16%	12.58%	14.53%
Eversource Energy, Inc.	EVRG	2.58%	0.95	15.16%	12.58%	14.53%
Hawaiian Electric Industries, Inc.	HE	2.58%	0.85	15.16%	12.58%	13.28%
IDACORP, Inc.	IDA	2.58%	0.80	15.16%	12.58%	12.65%
NextEra Energy, Inc.	NEE	2.58%	0.90	15.16%	12.58%	13.91%
NorthWestern Corporation	NWE	2.58%	0.95	15.16%	12.58%	14.53%
Otter Tail Corporation	OTTR	2.58%	0.90	15.16%	12.58%	13.91%
Pinnacle West Capital Corporation	PNW	2.58%	0.90	15.16%	12.58%	13.91%
Portland General Electric Company	POR	2.58%	0.90	15.16%	12.58%	13.91%
Southern Company	SO	2.58%	0.95	15.16%	12.58%	14.53%
Xcel Energy Inc.	XEL	2.58%	0.80	15.16%	12.58%	12.65%
Mean						13.65%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 2, February, 2022 at 2

[2] Source: Value Line

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & VL BETA
CONSTANT GROWTH DCF APPLIED TO S&P 500
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
ALLETE, Inc.	ALE	3.40%	0.90	15.16%	11.76%	13.99%
Alliant Energy Corporation	LNT	3.40%	0.85	15.16%	11.76%	13.40%
Ameren Corporation	AEE	3.40%	0.80	15.16%	11.76%	12.81%
American Electric Power Company, Inc.	AEP	3.40%	0.75	15.16%	11.76%	12.22%
Duke Energy Corporation	DUK	3.40%	0.85	15.16%	11.76%	13.40%
Edison International	EIX	3.40%	0.95	15.16%	11.76%	14.58%
Exelon Corporation	EXC	3.40%	0.95	15.16%	11.76%	14.58%
Evergy, Inc.	EVRG	3.40%	0.95	15.16%	11.76%	14.58%
Hawaiian Electric Industries, Inc.	HE	3.40%	0.85	15.16%	11.76%	13.40%
IDACORP, Inc.	IDA	3.40%	0.80	15.16%	11.76%	12.81%
NextEra Energy, Inc.	NEE	3.40%	0.90	15.16%	11.76%	13.99%
NorthWestern Corporation	NWE	3.40%	0.95	15.16%	11.76%	14.58%
Otter Tail Corporation	OTTR	3.40%	0.90	15.16%	11.76%	13.99%
Pinnacle West Capital Corporation	PNW	3.40%	0.90	15.16%	11.76%	13.99%
Portland General Electric Company	POR	3.40%	0.90	15.16%	11.76%	13.99%
Southern Company	SO	3.40%	0.95	15.16%	11.76%	14.58%
Xcel Energy Inc.	XEL	3.40%	0.80	15.16%	11.76%	12.81%
Mean						13.75%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14
[2] Source: Value Line
[3] Source: Value Line
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG BETA
CONSTANT GROWTH DCF APPLIED TO S&P 500
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
ALLETE, Inc.	ALE	2.03%	0.85	15.16%	13.13%	13.17%
Alliant Energy Corporation	LNT	2.03%	0.80	15.16%	13.13%	12.56%
Ameren Corporation	AEE	2.03%	0.76	15.16%	13.13%	11.99%
American Electric Power Company, Inc.	AEP	2.03%	0.78	15.16%	13.13%	12.25%
Duke Energy Corporation	DUK	2.03%	0.72	15.16%	13.13%	11.54%
Edison International	EIX	2.03%	0.83	15.16%	13.13%	12.99%
Exelon Corporation	EXC	2.03%	0.86	15.16%	13.13%	13.32%
Eergy, Inc.	EVRG	2.03%	0.80	15.16%	13.13%	12.60%
Hawaiian Electric Industries, Inc.	HE	2.03%	0.70	15.16%	13.13%	11.17%
IDACORP, Inc.	IDA	2.03%	0.83	15.16%	13.13%	12.93%
NextEra Energy, Inc.	NEE	2.03%	0.78	15.16%	13.13%	12.32%
NorthWestern Corporation	NWE	2.03%	0.91	15.16%	13.13%	14.01%
Otter Tail Corporation	OTTR	2.03%	0.89	15.16%	13.13%	13.72%
Pinnacle West Capital Corporation	PNW	2.03%	0.85	15.16%	13.13%	13.13%
Portland General Electric Company	POR	2.03%	0.81	15.16%	13.13%	12.73%
Southern Company	SO	2.03%	0.79	15.16%	13.13%	12.40%
Xcel Energy Inc.	XEL	2.03%	0.75	15.16%	13.13%	11.85%
Mean						12.63%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
CONSTANT GROWTH DCF APPLIED TO S&P 500

$$K = R_f + \beta (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]
		Near-term projected 30-year U.S. Treasury bond yield (Q2 2022 - Q2 2023)		Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)
Company	Ticker					ROE (K)
ALLETE, Inc.	ALE	2.58%	0.85	15.16%	12.58%	13.26%
Alliant Energy Corporation	LNT	2.58%	0.80	15.16%	12.58%	12.67%
Ameren Corporation	AEE	2.58%	0.76	15.16%	12.58%	12.12%
American Electric Power Company, Inc.	AEP	2.58%	0.78	15.16%	12.58%	12.37%
Duke Energy Corporation	DUK	2.58%	0.72	15.16%	12.58%	11.69%
Edison International	EIX	2.58%	0.83	15.16%	12.58%	13.08%
Exelon Corporation	EXC	2.58%	0.86	15.16%	12.58%	13.39%
Eergy, Inc.	EVRG	2.58%	0.80	15.16%	12.58%	12.71%
Hawaiian Electric Industries, Inc.	HE	2.58%	0.70	15.16%	12.58%	11.34%
IDACORP, Inc.	IDA	2.58%	0.83	15.16%	12.58%	13.02%
NextEra Energy, Inc.	NEE	2.58%	0.78	15.16%	12.58%	12.44%
NorthWestern Corporation	NWE	2.58%	0.91	15.16%	12.58%	14.06%
Otter Tail Corporation	OTTR	2.58%	0.89	15.16%	12.58%	13.78%
Pinnacle West Capital Corporation	PNW	2.58%	0.85	15.16%	12.58%	13.22%
Portland General Electric Company	POR	2.58%	0.81	15.16%	12.58%	12.83%
Southern Company	SO	2.58%	0.79	15.16%	12.58%	12.52%
Xcel Energy Inc.	XEL	2.58%	0.75	15.16%	12.58%	11.99%
Mean						12.74%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 2, February, 2022 at 2

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
CONSTANT GROWTH DCF APPLIED TO S&P 500
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
ALLETE, Inc.	ALE	3.40%	0.85	15.16%	11.76%	13.38%
Alliant Energy Corporation	LNT	3.40%	0.80	15.16%	11.76%	12.83%
Ameren Corporation	AEE	3.40%	0.76	15.16%	11.76%	12.32%
American Electric Power Company, Inc.	AEP	3.40%	0.78	15.16%	11.76%	12.56%
Duke Energy Corporation	DUK	3.40%	0.72	15.16%	11.76%	11.92%
Edison International	EIX	3.40%	0.83	15.16%	11.76%	13.21%
Exelon Corporation	EXC	3.40%	0.86	15.16%	11.76%	13.51%
Evergy, Inc.	EVRG	3.40%	0.80	15.16%	11.76%	12.87%
Hawaiian Electric Industries, Inc.	HE	3.40%	0.70	15.16%	11.76%	11.59%
IDACORP, Inc.	IDA	3.40%	0.83	15.16%	11.76%	13.16%
NextEra Energy, Inc.	NEE	3.40%	0.78	15.16%	11.76%	12.62%
NorthWestern Corporation	NWE	3.40%	0.91	15.16%	11.76%	14.13%
Otter Tail Corporation	OTTR	3.40%	0.89	15.16%	11.76%	13.87%
Pinnacle West Capital Corporation	PNW	3.40%	0.85	15.16%	11.76%	13.35%
Portland General Electric Company	POR	3.40%	0.81	15.16%	11.76%	12.99%
Southern Company	SO	3.40%	0.79	15.16%	11.76%	12.69%
Xcel Energy Inc.	XEL	3.40%	0.75	15.16%	11.76%	12.19%
Mean						12.89%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14
[2] Source: Bloomberg Professional
[3] Source: Value Line
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VL BETA
CONSTANT GROWTH DCF APPLIED TO SUBSET OF S&P 500 COMPANIES
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
ALLETE, Inc.	ALE	2.03%	0.90	12.87%	10.84%	11.79%
Alliant Energy Corporation	LNT	2.03%	0.85	12.87%	10.84%	11.25%
Ameren Corporation	AEE	2.03%	0.80	12.87%	10.84%	10.70%
American Electric Power Company, Inc.	AEP	2.03%	0.75	12.87%	10.84%	10.16%
Duke Energy Corporation	DUK	2.03%	0.85	12.87%	10.84%	11.25%
Edison International	EIX	2.03%	0.95	12.87%	10.84%	12.33%
Entergy Corporation	ETR	2.03%	0.95	12.87%	10.84%	12.33%
Evergy, Inc.	EVRG	2.03%	0.95	12.87%	10.84%	12.33%
Hawaiian Electric Industries, Inc.	HE	2.03%	0.85	12.87%	10.84%	11.25%
IDACORP, Inc.	IDA	2.03%	0.80	12.87%	10.84%	10.70%
NextEra Energy, Inc.	NEE	2.03%	0.90	12.87%	10.84%	11.79%
NorthWestern Corporation	NWE	2.03%	0.95	12.87%	10.84%	12.33%
Otter Tail Corporation	OTTR	2.03%	0.90	12.87%	10.84%	11.79%
Pinnacle West Capital Corporation	PNW	2.03%	0.90	12.87%	10.84%	11.79%
Portland General Electric Company	POR	2.03%	0.90	12.87%	10.84%	11.79%
Southern Company	SO	2.03%	0.95	12.87%	10.84%	12.33%
Xcel Energy Inc.	XEL	2.03%	0.80	12.87%	10.84%	10.70%
Mean						11.57%

Notes:

[1] Source: Bloomberg Professional as of January 31, 2022

[2] Source: Value Line

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & VL BETA
CONSTANT GROWTH DCF APPLIED TO SUBSET OF S&P 500 COMPANIES
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		Near-term projected 30-year U.S. Treasury bond yield (Q2 2022 - Q2 2023)		Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)
Company	Ticker					ROE (K)
ALLETE, Inc.	ALE	2.58%	0.90	12.87%	10.29%	11.84%
Alliant Energy Corporation	LNT	2.58%	0.85	12.87%	10.29%	11.33%
Ameren Corporation	AEE	2.58%	0.80	12.87%	10.29%	10.81%
American Electric Power Company, Inc.	AEP	2.58%	0.75	12.87%	10.29%	10.30%
Duke Energy Corporation	DUK	2.58%	0.85	12.87%	10.29%	11.33%
Edison International	EIX	2.58%	0.95	12.87%	10.29%	12.36%
Entergy Corporation	ETR	2.58%	0.95	12.87%	10.29%	12.36%
Evergy, Inc.	EVRG	2.58%	0.95	12.87%	10.29%	12.36%
Hawaiian Electric Industries, Inc.	HE	2.58%	0.85	12.87%	10.29%	11.33%
IDACORP, Inc.	IDA	2.58%	0.80	12.87%	10.29%	10.81%
NextEra Energy, Inc.	NEE	2.58%	0.90	12.87%	10.29%	11.84%
NorthWestern Corporation	NWE	2.58%	0.95	12.87%	10.29%	12.36%
Otter Tail Corporation	OTTR	2.58%	0.90	12.87%	10.29%	11.84%
Pinnacle West Capital Corporation	PNW	2.58%	0.90	12.87%	10.29%	11.84%
Portland General Electric Company	POR	2.58%	0.90	12.87%	10.29%	11.84%
Southern Company	SO	2.58%	0.95	12.87%	10.29%	12.36%
Xcel Energy Inc.	XEL	2.58%	0.80	12.87%	10.29%	10.81%
Mean						11.63%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 2, February, 2022 at 2
[2] Source: Value Line
[3] Source: Value Line
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & VL BETA
CONSTANT GROWTH DCF APPLIED TO SUBSET OF S&P 500 COMPANIES
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)
ALLETE, Inc.	ALE	3.40%	0.90	12.87%	9.47%	11.93%
Alliant Energy Corporation	LNT	3.40%	0.85	12.87%	9.47%	11.45%
Ameren Corporation	AEE	3.40%	0.80	12.87%	9.47%	10.98%
American Electric Power Company, Inc.	AEP	3.40%	0.75	12.87%	9.47%	10.50%
Duke Energy Corporation	DUK	3.40%	0.85	12.87%	9.47%	11.45%
Edison International	EIX	3.40%	0.95	12.87%	9.47%	12.40%
Entergy Corporation	ETR	3.40%	0.95	12.87%	9.47%	12.40%
Evergy, Inc.	EVRG	3.40%	0.95	12.87%	9.47%	12.40%
Hawaiian Electric Industries, Inc.	HE	3.40%	0.85	12.87%	9.47%	11.45%
IDACORP, Inc.	IDA	3.40%	0.80	12.87%	9.47%	10.98%
NextEra Energy, Inc.	NEE	3.40%	0.90	12.87%	9.47%	11.93%
NorthWestern Corporation	NWE	3.40%	0.95	12.87%	9.47%	12.40%
Otter Tail Corporation	OTTR	3.40%	0.90	12.87%	9.47%	11.93%
Pinnacle West Capital Corporation	PNW	3.40%	0.90	12.87%	9.47%	11.93%
Portland General Electric Company	POR	3.40%	0.90	12.87%	9.47%	11.93%
Southern Company	SO	3.40%	0.95	12.87%	9.47%	12.40%
Xcel Energy Inc.	XEL	3.40%	0.80	12.87%	9.47%	10.98%
Mean						11.73%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14
[2] Source: Value Line
[3] Source: Value Line
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG BETA
CONSTANT GROWTH DCF APPLIED TO SUBSET OF S&P 500 COMPANIES
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
ALLETE, Inc.	ALE	2.03%	0.85	12.87%	10.84%	11.23%
Alliant Energy Corporation	LNT	2.03%	0.80	12.87%	10.84%	10.73%
Ameren Corporation	AEE	2.03%	0.76	12.87%	10.84%	10.25%
American Electric Power Company, Inc.	AEP	2.03%	0.78	12.87%	10.84%	10.47%
Duke Energy Corporation	DUK	2.03%	0.72	12.87%	10.84%	9.88%
Edison International	EIX	2.03%	0.83	12.87%	10.84%	11.08%
Entergy Corporation	ETR	2.03%	0.87	12.87%	10.84%	11.45%
Evergy, Inc.	EVRG	2.03%	0.80	12.87%	10.84%	10.76%
Hawaiian Electric Industries, Inc.	HE	2.03%	0.70	12.87%	10.84%	9.58%
IDACORP, Inc.	IDA	2.03%	0.83	12.87%	10.84%	11.03%
NextEra Energy, Inc.	NEE	2.03%	0.78	12.87%	10.84%	10.53%
NorthWestern Corporation	NWE	2.03%	0.91	12.87%	10.84%	11.92%
Otter Tail Corporation	OTTR	2.03%	0.89	12.87%	10.84%	11.68%
Pinnacle West Capital Corporation	PNW	2.03%	0.85	12.87%	10.84%	11.20%
Portland General Electric Company	POR	2.03%	0.81	12.87%	10.84%	10.86%
Southern Company	SO	2.03%	0.79	12.87%	10.84%	10.59%
Xcel Energy Inc.	XEL	2.03%	0.75	12.87%	10.84%	10.14%
Mean						10.79%

Notes:

- [1] Source: Bloomberg Professional as of January 31, 2022
[2] Source: Bloomberg Professional
[3] Source: Value Line
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
CONSTANT GROWTH DCF APPLIED TO SUBSET OF S&P 500 COMPANIES

$$K = R_f + \beta (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]
		Near-term projected 30-year U.S. Treasury bond yield (Q2 2022 - Q2 2023)		Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)
Company	Ticker		Beta (β)			
ALLETE, Inc.	ALE	2.58%	0.85	12.87%	10.29%	11.31%
Alliant Energy Corporation	LNT	2.58%	0.80	12.87%	10.29%	10.83%
Ameren Corporation	AEE	2.58%	0.76	12.87%	10.29%	10.38%
American Electric Power Company, Inc.	AEP	2.58%	0.78	12.87%	10.29%	10.59%
Duke Energy Corporation	DUK	2.58%	0.72	12.87%	10.29%	10.04%
Edison International	EIX	2.58%	0.83	12.87%	10.29%	11.17%
Entergy Corporation	ETR	2.58%	0.87	12.87%	10.29%	11.52%
Evergy, Inc.	EVRG	2.58%	0.80	12.87%	10.29%	10.86%
Hawaiian Electric Industries, Inc.	HE	2.58%	0.70	12.87%	10.29%	9.75%
IDACORP, Inc.	IDA	2.58%	0.83	12.87%	10.29%	11.12%
NextEra Energy, Inc.	NEE	2.58%	0.78	12.87%	10.29%	10.65%
NorthWestern Corporation	NWE	2.58%	0.91	12.87%	10.29%	11.97%
Otter Tail Corporation	OTTR	2.58%	0.89	12.87%	10.29%	11.74%
Pinnacle West Capital Corporation	PNW	2.58%	0.85	12.87%	10.29%	11.28%
Portland General Electric Company	POR	2.58%	0.81	12.87%	10.29%	10.97%
Southern Company	SO	2.58%	0.79	12.87%	10.29%	10.71%
Xcel Energy Inc.	XEL	2.58%	0.75	12.87%	10.29%	10.27%
Mean						10.89%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 2, February, 2022 at 2

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
CONSTANT GROWTH DCF APPLIED TO SUBSET OF S&P 500 COMPANIES

$$K = R_f + \beta (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]
		Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)
Company	Ticker					
ALLETE, Inc.	ALE	3.40%	0.85	12.87%	9.47%	11.44%
Alliant Energy Corporation	LNT	3.40%	0.80	12.87%	9.47%	11.00%
Ameren Corporation	AEE	3.40%	0.76	12.87%	9.47%	10.58%
American Electric Power Company, Inc.	AEP	3.40%	0.78	12.87%	9.47%	10.77%
Duke Energy Corporation	DUK	3.40%	0.72	12.87%	9.47%	10.26%
Edison International	EIX	3.40%	0.83	12.87%	9.47%	11.30%
Entergy Corporation	ETR	3.40%	0.87	12.87%	9.47%	11.63%
Evergy, Inc.	EVRG	3.40%	0.80	12.87%	9.47%	11.02%
Hawaiian Electric Industries, Inc.	HE	3.40%	0.70	12.87%	9.47%	10.00%
IDACORP, Inc.	IDA	3.40%	0.83	12.87%	9.47%	11.26%
NextEra Energy, Inc.	NEE	3.40%	0.78	12.87%	9.47%	10.82%
NorthWestern Corporation	NWE	3.40%	0.91	12.87%	9.47%	12.04%
Otter Tail Corporation	OTTR	3.40%	0.89	12.87%	9.47%	11.83%
Pinnacle West Capital Corporation	PNW	3.40%	0.85	12.87%	9.47%	11.41%
Portland General Electric Company	POR	3.40%	0.81	12.87%	9.47%	11.12%
Southern Company	SO	3.40%	0.79	12.87%	9.47%	10.88%
Xcel Energy Inc.	XEL	3.40%	0.75	12.87%	9.47%	10.48%
Mean						11.05%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VL BETA
LONG-TERM HISTORICAL MARKET RETURN
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Historical Market Risk Premium	ROE (K)
ALLETE, Inc.	ALE	2.03%	0.90	10.13%	11.15%
Alliant Energy Corporation	LNT	2.03%	0.85	10.13%	10.64%
Ameren Corporation	AEE	2.03%	0.80	10.13%	10.13%
American Electric Power Company, Inc.	AEP	2.03%	0.75	10.13%	9.63%
Duke Energy Corporation	DUK	2.03%	0.85	10.13%	10.64%
Edison International	EIX	2.03%	0.95	10.13%	11.65%
Entergy Corporation	ETR	2.03%	0.95	10.13%	11.65%
Evergy, Inc.	EVRG	2.03%	0.95	10.13%	11.65%
Hawaiian Electric Industries, Inc.	HE	2.03%	0.85	10.13%	10.64%
IDACORP, Inc.	IDA	2.03%	0.80	10.13%	10.13%
NextEra Energy, Inc.	NEE	2.03%	0.90	10.13%	11.15%
NorthWestern Corporation	NWE	2.03%	0.95	10.13%	11.65%
Otter Tail Corporation	OTTR	2.03%	0.90	10.13%	11.15%
Pinnacle West Capital Corporation	PNW	2.03%	0.90	10.13%	11.15%
Portland General Electric Company	POR	2.03%	0.90	10.13%	11.15%
Southern Company	SO	2.03%	0.95	10.13%	11.65%
Xcel Energy Inc.	XEL	2.03%	0.80	10.13%	10.13%
Mean					10.94%

Notes:

[1] Source: Bloomberg Professional as of January 31, 2022

[2] Source: Value Line

[3] Source: Duff & Phelps Average Large Co Stocks Historical Return less Income Only Returns LT Gov't (1926-2020)

[4] Equals [1] + [2] x [3]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & VL BETA
LONG-TERM HISTORICAL MARKET RETURN
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]
		Near-term projected 30-year U.S. Treasury bond yield (Q2 2022 - Q2 2023)	Beta (β)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Company	Ticker				
ALLETE, Inc.	ALE	2.58%	0.90	9.58%	11.20%
Alliant Energy Corporation	LNT	2.58%	0.85	9.58%	10.72%
Ameren Corporation	AEE	2.58%	0.80	9.58%	10.24%
American Electric Power Company, Inc.	AEP	2.58%	0.75	9.58%	9.77%
Duke Energy Corporation	DUK	2.58%	0.85	9.58%	10.72%
Edison International	EIX	2.58%	0.95	9.58%	11.68%
Entergy Corporation	ETR	2.58%	0.95	9.58%	11.68%
Evergy, Inc.	EVRG	2.58%	0.95	9.58%	11.68%
Hawaiian Electric Industries, Inc.	HE	2.58%	0.85	9.58%	10.72%
IDACORP, Inc.	IDA	2.58%	0.80	9.58%	10.24%
NextEra Energy, Inc.	NEE	2.58%	0.90	9.58%	11.20%
NorthWestern Corporation	NWE	2.58%	0.95	9.58%	11.68%
Otter Tail Corporation	OTTR	2.58%	0.90	9.58%	11.20%
Pinnacle West Capital Corporation	PNW	2.58%	0.90	9.58%	11.20%
Portland General Electric Company	POR	2.58%	0.90	9.58%	11.20%
Southern Company	SO	2.58%	0.95	9.58%	11.68%
Xcel Energy Inc.	XEL	2.58%	0.80	9.58%	10.24%
Mean					11.00%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 2, February, 2022 at 2

[2] Source: Value Line

[3] Source: Duff & Phelps Average Large Co Stocks Historical Return less Income Only Returns LT Gov't (1926-2020)

[4] Equals [1] + [2] x [3]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & VL BETA
LONG-TERM HISTORICAL MARKET RETURN
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Risk Premium ($R_m - R_f$)	ROE (K)
ALLETE, Inc.	ALE	3.40%	0.90	8.76%	11.28%
Alliant Energy Corporation	LNT	3.40%	0.85	8.76%	10.85%
Ameren Corporation	AEE	3.40%	0.80	8.76%	10.41%
American Electric Power Company, Inc.	AEP	3.40%	0.75	8.76%	9.97%
Duke Energy Corporation	DUK	3.40%	0.85	8.76%	10.85%
Edison International	EIX	3.40%	0.95	8.76%	11.72%
Entergy Corporation	ETR	3.40%	0.95	8.76%	11.72%
Evergy, Inc.	EVRG	3.40%	0.95	8.76%	11.72%
Hawaiian Electric Industries, Inc.	HE	3.40%	0.85	8.76%	10.85%
IDACORP, Inc.	IDA	3.40%	0.80	8.76%	10.41%
NextEra Energy, Inc.	NEE	3.40%	0.90	8.76%	11.28%
NorthWestern Corporation	NWE	3.40%	0.95	8.76%	11.72%
Otter Tail Corporation	OTTR	3.40%	0.90	8.76%	11.28%
Pinnacle West Capital Corporation	PNW	3.40%	0.90	8.76%	11.28%
Portland General Electric Company	POR	3.40%	0.90	8.76%	11.28%
Southern Company	SO	3.40%	0.95	8.76%	11.72%
Xcel Energy Inc.	XEL	3.40%	0.80	8.76%	10.41%
Mean					11.10%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14

[2] Source: Value Line

[3] Source: Duff & Phelps Average Large Co Stocks Historical Return less Income Only Returns LT Gov't (1926-2020)

[4] Equals [1] + [2] x [3]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG BETA
LONG-TERM HISTORICAL MARKET RETURN
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Risk Premium ($R_m - R_f$)	ROE (K)
ALLETE, Inc.	ALE	2.03%	0.85	10.13%	10.62%
Alliant Energy Corporation	LNT	2.03%	0.80	10.13%	10.15%
Ameren Corporation	AEE	2.03%	0.76	10.13%	9.71%
American Electric Power Company, Inc.	AEP	2.03%	0.78	10.13%	9.91%
Duke Energy Corporation	DUK	2.03%	0.72	10.13%	9.37%
Edison International	EIX	2.03%	0.83	10.13%	10.48%
Entergy Corporation	ETR	2.03%	0.87	10.13%	10.83%
Evergy, Inc.	EVRG	2.03%	0.80	10.13%	10.18%
Hawaiian Electric Industries, Inc.	HE	2.03%	0.70	10.13%	9.08%
IDACORP, Inc.	IDA	2.03%	0.83	10.13%	10.44%
NextEra Energy, Inc.	NEE	2.03%	0.78	10.13%	9.97%
NorthWestern Corporation	NWE	2.03%	0.91	10.13%	11.27%
Otter Tail Corporation	OTTR	2.03%	0.89	10.13%	11.04%
Pinnacle West Capital Corporation	PNW	2.03%	0.85	10.13%	10.59%
Portland General Electric Company	POR	2.03%	0.81	10.13%	10.28%
Southern Company	SO	2.03%	0.79	10.13%	10.03%
Xcel Energy Inc.	XEL	2.03%	0.75	10.13%	9.60%
Mean					10.21%

Notes:

[1] Source: Bloomberg Professional as of January 31, 2022

[2] Source: Bloomberg Professional

[3] Source: Duff & Phelps Average Large Co Stocks Historical Return less Income Only Returns LT Gov't (1926-2020)

[4] Equals [1] + [2] x [3]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
LONG-TERM HISTORICAL MARKET RETURN
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]
		Near-term projected 30-year U.S. Treasury bond yield (Q2 2022 - Q2 2023)	Beta (β)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Company	Ticker				
ALLETE, Inc.	ALE	2.58%	0.85	9.58%	10.71%
Alliant Energy Corporation	LNT	2.58%	0.80	9.58%	10.26%
Ameren Corporation	AEE	2.58%	0.76	9.58%	9.84%
American Electric Power Company, Inc.	AEP	2.58%	0.78	9.58%	10.04%
Duke Energy Corporation	DUK	2.58%	0.72	9.58%	9.52%
Edison International	EIX	2.58%	0.83	9.58%	10.57%
Entergy Corporation	ETR	2.58%	0.87	9.58%	10.90%
Evergy, Inc.	EVRG	2.58%	0.80	9.58%	10.29%
Hawaiian Electric Industries, Inc.	HE	2.58%	0.70	9.58%	9.25%
IDACORP, Inc.	IDA	2.58%	0.83	9.58%	10.53%
NextEra Energy, Inc.	NEE	2.58%	0.78	9.58%	10.09%
NorthWestern Corporation	NWE	2.58%	0.91	9.58%	11.32%
Otter Tail Corporation	OTTR	2.58%	0.89	9.58%	11.10%
Pinnacle West Capital Corporation	PNW	2.58%	0.85	9.58%	10.68%
Portland General Electric Company	POR	2.58%	0.81	9.58%	10.39%
Southern Company	SO	2.58%	0.79	9.58%	10.14%
Xcel Energy Inc.	XEL	2.58%	0.75	9.58%	9.74%
Mean					10.32%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 2, February, 2022 at 2

[2] Source: Bloomberg Professional

[3] Source: Duff & Phelps Average Large Co Stocks Historical Return less Income Only Returns LT Gov't (1926-2020)

[4] Equals [1] + [2] x [3]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
LONG-TERM HISTORICAL MARKET RETURN
 $K = R_f + \beta (R_m - R_f)$

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2023 - 2027)	[2] Beta (β)	[3] Market Risk Premium ($R_m - R_f$)	[4] ROE (K)
ALLETE, Inc.	ALE	3.40%	0.85	8.76%	10.83%
Alliant Energy Corporation	LNT	3.40%	0.80	8.76%	10.43%
Ameren Corporation	AEE	3.40%	0.76	8.76%	10.04%
American Electric Power Company, Inc.	AEP	3.40%	0.78	8.76%	10.22%
Duke Energy Corporation	DUK	3.40%	0.72	8.76%	9.74%
Edison International	EIX	3.40%	0.83	8.76%	10.71%
Entergy Corporation	ETR	3.40%	0.87	8.76%	11.01%
Evergy, Inc.	EVRG	3.40%	0.80	8.76%	10.45%
Hawaiian Electric Industries, Inc.	HE	3.40%	0.70	8.76%	9.50%
IDACORP, Inc.	IDA	3.40%	0.83	8.76%	10.67%
NextEra Energy, Inc.	NEE	3.40%	0.78	8.76%	10.26%
NorthWestern Corporation	NWE	3.40%	0.91	8.76%	11.39%
Otter Tail Corporation	OTTR	3.40%	0.89	8.76%	11.19%
Pinnacle West Capital Corporation	PNW	3.40%	0.85	8.76%	10.81%
Portland General Electric Company	POR	3.40%	0.81	8.76%	10.54%
Southern Company	SO	3.40%	0.79	8.76%	10.32%
Xcel Energy Inc.	XEL	3.40%	0.75	8.76%	9.95%
Mean					10.47%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14

[2] Source: Bloomberg Professional

[3] Source: Duff & Phelps Average Large Co Stocks Historical Return less Income Only Returns LT Gov't (1926-2020)

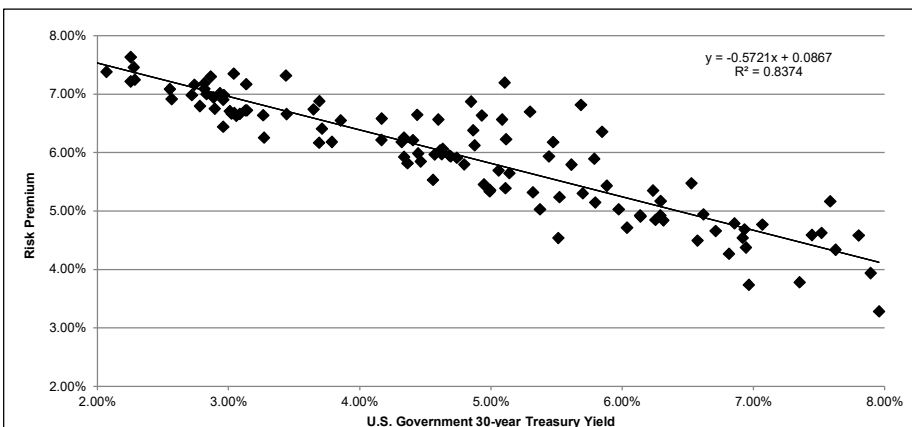
[4] Equals [1] + [2] x [3]

Risk Premium -- Vertically Integrated Electric Utilities (US)

	[1]	[2]	[3]
	Average		
	Averaged VI	U.S. Govt. 30-year	
	Electric ROE	Treasury	Risk Premium
1992.1	12.38%	7.80%	4.58%
1992.2	11.83%	7.89%	3.93%
1992.3	12.03%	7.45%	4.59%
1992.4	12.14%	7.52%	4.62%
1993.1	11.84%	7.07%	4.77%
1993.2	11.64%	6.86%	4.79%
1993.3	11.15%	6.31%	4.84%
1993.4	11.04%	6.14%	4.90%
1994.1	11.07%	6.57%	4.49%
1994.2	11.13%	7.35%	3.78%
1994.3	12.75%	7.58%	5.17%
1994.4	11.24%	7.96%	3.28%
1995.1	11.96%	7.63%	4.34%
1995.2	11.32%	6.94%	4.37%
1995.3	11.37%	6.71%	4.66%
1995.4	11.58%	6.23%	5.35%
1996.1	11.46%	6.29%	5.17%
1996.2	11.46%	6.92%	4.54%
1996.3	10.70%	6.96%	3.74%
1996.4	11.56%	6.62%	4.94%
1997.1	11.08%	6.81%	4.27%
1997.2	11.62%	6.93%	4.68%
1997.3	12.00%	6.53%	5.47%
1997.4	11.06%	6.14%	4.92%
1998.1	11.31%	5.88%	5.43%
1998.2	12.20%	5.85%	6.35%
1998.3	11.65%	5.47%	6.18%
1998.4	12.30%	5.10%	7.20%
1999.1	10.40%	5.37%	5.03%
1999.2	10.94%	5.79%	5.15%
1999.3	10.75%	6.04%	4.71%
1999.4	11.10%	6.25%	4.85%
2000.1	11.21%	6.29%	4.92%
2000.2	11.00%	5.97%	5.03%
2000.3	11.68%	5.79%	5.89%
2000.4	12.50%	5.69%	6.81%
2001.1	11.38%	5.44%	5.93%
2001.2	11.00%	5.70%	5.30%
2001.3	10.76%	5.52%	5.23%
2001.4	11.99%	5.30%	6.70%
2002.1	10.05%	5.51%	4.54%
2002.2	11.41%	5.61%	5.79%
2002.3	11.65%	5.08%	6.57%
2002.4	11.57%	4.93%	6.64%
2003.1	11.72%	4.85%	6.87%
2003.2	11.16%	4.60%	6.56%
2003.3	10.50%	5.11%	5.39%
2003.4	11.34%	5.11%	6.23%
2004.1	11.00%	4.88%	6.12%
2004.2	10.64%	5.32%	5.32%
2004.3	10.75%	5.06%	5.69%
2004.4	11.24%	4.86%	6.38%
2005.1	10.63%	4.69%	5.93%
2005.2	10.31%	4.47%	5.85%
2005.3	11.08%	4.44%	6.65%
2005.4	10.63%	4.68%	5.95%
2006.1	10.70%	4.63%	6.06%
2006.2	10.79%	5.14%	5.65%
2006.3	10.35%	4.99%	5.35%
2006.4	10.65%	4.74%	5.91%
2007.1	10.59%	4.80%	5.80%
2007.2	10.33%	4.99%	5.34%
2007.3	10.40%	4.95%	5.45%
2007.4	10.65%	4.61%	6.04%
2008.1	10.62%	4.41%	6.21%
2008.2	10.54%	4.57%	5.97%
2008.3	10.43%	4.44%	5.98%
2008.4	10.39%	3.65%	6.74%
2009.1	10.75%	3.44%	7.31%
2009.2	10.75%	4.17%	6.58%
2009.3	10.50%	4.32%	6.18%
2009.4	10.59%	4.34%	6.26%
2010.1	10.59%	4.62%	5.97%
2010.2	10.18%	4.36%	5.82%
2010.3	10.40%	3.86%	6.55%
2010.4	10.38%	4.17%	6.21%
2011.1	10.09%	4.56%	5.53%
2011.2	10.26%	4.34%	5.92%
2011.3	10.57%	3.69%	6.88%
2011.4	10.39%	3.04%	7.35%
2012.1	10.30%	3.14%	7.17%
2012.2	9.95%	2.93%	7.02%
2012.3	9.90%	2.74%	7.16%

Risk Premium -- Vertically Integrated Electric Utilities (US)

	[1]	[2]	[3]
	Average Authorized VI Electric ROE	U.S. Govt. 30-year Treasury	Risk Premium
2012.4	10.16%	2.86%	7.30%
2013.1	9.85%	3.13%	6.72%
2013.2	9.86%	3.14%	6.72%
2013.3	10.12%	3.71%	6.41%
2013.4	9.97%	3.79%	6.18%
2014.1	9.86%	3.69%	6.17%
2014.2	10.10%	3.44%	6.66%
2014.3	9.90%	3.26%	6.64%
2014.4	9.94%	2.96%	6.98%
2015.1	9.64%	2.55%	7.08%
2015.2	9.83%	2.88%	6.94%
2015.3	9.40%	2.96%	6.44%
2015.4	9.86%	2.96%	6.90%
2016.1	9.70%	2.72%	6.98%
2016.2	9.48%	2.57%	6.91%
2016.3	9.74%	2.28%	7.46%
2016.4	9.83%	2.83%	7.00%
2017.1	9.72%	3.04%	6.67%
2017.2	9.64%	2.90%	6.75%
2017.3	10.00%	2.82%	7.18%
2017.4	9.91%	2.82%	7.09%
2018.1	9.69%	3.02%	6.66%
2018.2	9.75%	3.09%	6.66%
2018.3	9.69%	3.06%	6.63%
2018.4	9.52%	3.27%	6.25%
2019.1	9.72%	3.01%	6.71%
2019.2	9.58%	2.78%	6.79%
2019.3	9.53%	2.29%	7.24%
2019.4	9.89%	2.25%	7.63%
2020.1	9.72%	1.89%	7.83%
2020.2	9.58%	1.38%	8.20%
2020.3	9.30%	1.37%	7.93%
2020.4	9.56%	1.62%	7.94%
2021.1	9.45%	2.07%	7.38%
2021.2	9.47%	2.25%	7.21%
2021.3	9.27%	1.93%	7.34%
2021.4	9.67%	1.94%	7.73%
AVERAGE	10.64%	4.60%	6.04%
MEDIAN	10.59%	4.63%	6.18%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.915112777
R Square	0.837431395
Adjusted R Square	0.836053695
Standard Error	0.004201674
Observations	120

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.010730978	0.010730978	607.8474029	2.25979E-48
Residual	118	0.00208318	1.76541E-05		
Total	119	0.012814158			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.086744767	0.001134377	76.46909619	2.2239E-102	0.084498392	0.08899114	0.084498392	0.088991142
U.S. Govt. 30-year Treasury	-0.572119787	0.023205434	-24.6545615	2.25979E-48	-0.618072863	-0.5261667	-0.618072863	-0.526166711

	[7]	[8]	[9]
	U.S. Govt. 30-year Treasury	Risk Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	2.03%	7.51%	9.54%
Blue Chip Near-Term Projected Forecast (Q2 2022 - Q2 2023)	2.58%	7.20%	9.78%
Blue Chip Long-Term Projected Forecast (2023-2027) [6]	3.40%	6.73%	10.13%
AVERAGE			9.82%

Notes:

- [1] Source: Regulatory Research Associates, rate cases through January 31, 2022
- [2] Source: Bloomberg Professional, quarterly bond yields are the average of each trading day in the quarter
- [3] Equals Column [1] - Column [2]
- [4] Source: Bloomberg Professional, 30-day average as of January 31, 2022
- [5] Source: Blue Chip Financial Forecasts, Vol. 41, No. 2, February 2, 2022 at 2
- [6] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14
- [7] See notes [4], [5] & [6]
- [8] Equals $0.086745 + (-0.572120 \times \text{Column [7]})$
- [9] Equals Column [7] + Column [8]

EXPECTED EARNINGS ANALYSIS

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	
Company	Ticker	Value Line ROE 2024-2026	Value Line Total Capital 2020	Value Line Common Equity Ratio 2020	Total Equity 2020	Value Line Total Capital 2024-2026	Value Line Common Equity Ratio 2024-2026	Total Equity 2024-2026	Compound Annual Growth Rate	Adjustment Factor	Adjusted Return on Common Equity
ALLETE, Inc.	ALE	9.00%	3,888	59.00%	2,294	4,825	57.50%	2,774	3.88%	1.019	9.17%
Alliant Energy Corporation	LNT	11.50%	12,657	44.90%	5,683	16,100	45.50%	7,326	5.21%	1.025	11.79%
Ameren Corporation	AEE	10.50%	20,158	44.30%	8,930	28,100	48.00%	13,488	8.60%	1.041	10.93%
Duke Energy Corporation	DUK	9.50%	103,589	44.00%	45,579	121,100	43.50%	52,679	2.94%	1.014	9.64%
Edison International	EIX	12.00%	35,581	39.50%	14,054	50,000	34.00%	17,000	3.88%	1.019	12.23%
Energy Corporation	ETR	11.00%	32,386	33.70%	10,914	43,400	32.00%	13,888	4.94%	1.024	11.27%
Evergy, Inc.	EVRG	9.50%	17,924	48.70%	8,729	22,900	46.00%	10,534	3.83%	1.019	9.68%
Hawaiian Electric Industries, Inc.	HE	9.00%	4,436	52.70%	2,338	5,550	51.50%	2,858	4.10%	1.020	9.18%
IDACORP, Inc.	IDA	9.50%	4,560	56.10%	2,558	6,025	51.00%	3,073	3.73%	1.018	9.67%
NextEra Energy, Inc.	NEE	12.50%	78,457	46.50%	36,483	112,100	45.50%	51,006	6.93%	1.033	12.92%
NorthWestern Corporation	NWE	7.50%	4,409	47.20%	2,081	5,652	53.00%	2,996	7.56%	1.036	7.77%
OGE Energy Corp.	OGE	12.50%	7,126	51.00%	3,634	8,375	53.00%	4,439	4.08%	1.020	12.75%
Otter Tail Corporation	OTTR	12.00%	1,495	58.20%	870	1,975	62.00%	1,225	7.07%	1.034	12.41%
Pinnacle West Capital Corporation	PNW	8.50%	11,948	47.20%	5,639	15,675	40.50%	6,348	2.40%	1.012	8.60%
Portland General Electric Company	POR	9.50%	5,628	46.40%	2,611	6,850	45.50%	3,117	3.60%	1.018	9.67%
Southern Company	SO	14.00%	73,336	38.10%	27,941	93,300	38.50%	35,921	5.15%	1.025	14.35%
Xcel Energy Inc.	XEL	11.00%	34,220	42.60%	14,578	45,100	42.00%	18,942	5.38%	1.026	11.29%
Mean											10.78%
Median											10.93%

Notes:

- [1] Source: Value Line
- [2] Source: Value Line
- [3] Source: Value Line
- [4] Equals [2] x [3]
- [5] Source: Value Line
- [6] Source: Value Line
- [7] Equals [5] x [6]
- [8] Equals $([7] / [4])^{(1/5)} - 1$
- [9] Equals $2 \times (1 + [8]) / (2 + [8])$
- [10] Equals [1] x [9]

SIZE PREMIUM CALCULATION

Proxy Group Market Capitalization and Market-to-Book Ratio

Company	Ticker	[1] Market Capitalization (\$ billions)	[2] Market-to- Book Ratio
ALLETE, Inc.	ALE	3.42	1.46
Alliant Energy Corporation	LNT	15.03	2.51
Ameren Corporation	AEE	22.40	2.31
American Electric Power Company, Inc.	AEP	44.92	2.01
Duke Energy Corporation	DUK	79.61	1.68
Edison International	EIX	24.71	1.82
Entergy Corporation	ETR	22.19	1.97
Eversource Energy	ES	30.37	2.11
Exelon Corporation	EXC	54.91	1.62
Evergy, Inc.	EVRG	15.02	1.61
Hawaiian Electric Industries, Inc.	HE	4.56	1.91
IDACORP, Inc.	IDA	5.58	2.09
NextEra Energy, Inc.	NEE	167.20	4.51
NorthWestern Corporation	NWE	3.08	1.37
Otter Tail Corporation	OTTR	2.74	2.88
Pinnacle West Capital Corporation	PNW	7.92	1.31
Portland General Electric Company	POR	4.69	1.75
Public Service Enterprise Group Inc.	PEG	33.16	2.36
Southern Company	SO	71.96	2.51
Xcel Energy Inc.	XEL	36.74	2.37
Average		32.51	2.11
Median		22.30	1.99

Empire Electric OK

Common Equity (\$ millions) [3] \$ 30.68

Implied Market Capitalization [4] 61.09

As a percent of Proxy Group Median Market Capitalization 0.27%

[1] Source: Bloomberg LP; equals 30-day average as of January 31, 2022

[2] Source: Bloomberg LP; equals 30-day average as of January 31, 2022

[3] Company data

[4] Equals [3] x proxy group median market-to-book ratio

2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2020 NET PLANT
(\$ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2020	2022	2023	2024-2026	2024-2026	2024-2026	2022-26 Cap. Ex. / 2020 Net Plant
ALLETE, Inc.	ALE							
Capital Spending per Share			\$3.70	\$4.10	\$4.50	\$4.50	\$4.10	
Common Shares Outstanding			52.75	53.38	54.00	54.00	53.38	
Capital Expenditures			\$195.2	\$218.8	\$243.0	\$243.0	\$218.8	23.11%
Net Plant		\$4,840.80						
Alliant Energy Corporation	LNT							
Capital Spending per Share			\$5.30	\$5.90	\$6.50	\$6.50	\$6.50	
Common Shares Outstanding			251.00	251.75	252.50	252.50	251.75	
Capital Expenditures			\$1,330.3	\$1,485.3	\$1,641.3	\$1,641.3	\$1,636.4	55.71%
Net Plant		\$13,884.0						
Ameren Corporation	AEE							
Capital Spending per Share			\$11.80	\$12.28	\$12.75	\$12.75	\$12.28	
Common Shares Outstanding			265.00	272.50	280.00	280.00	272.50	
Capital Expenditures			\$3,127.0	\$3,344.9	\$3,570.0	\$3,570.0	\$3,344.9	63.26%
Net Plant		\$26,807.00						
American Electric Power Company, Inc.	AEP							
Capital Spending per Share			\$15.15	\$14.45	\$13.75	\$13.75	\$14.45	
Common Shares Outstanding			530.00	540.00	550.00	550.00	540.00	
Capital Expenditures			\$8,029.5	\$7,803.0	\$7,562.5	\$7,562.5	\$7,803.0	60.66%
Net Plant		\$63,902.00						
Duke Energy Corporation	DUK							
Capital Spending per Share			\$16.60	\$16.05	\$15.50	\$15.50	\$16.05	
Common Shares Outstanding			777.00	773.50	770.00	770.00	773.50	
Capital Expenditures			\$12,898.2	\$12,414.7	\$11,935.0	\$11,935.0	\$12,414.7	57.69%
Net Plant		\$106,782.00						
Edison International	EIX							
Capital Spending per Share			\$15.90	\$16.70	\$17.50	\$17.50	\$16.70	
Common Shares Outstanding			390.00	390.00	390.00	390.00	390.00	
Capital Expenditures			\$6,201.0	\$6,513.0	\$6,825.0	\$6,825.0	\$6,513.0	68.72%
Net Plant		\$47,839.00						

2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2020 NET PLANT
(\$ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2020	2022	2023	2024-2026	2024-2026	2024-2026	2022-26 Cap. Ex. / 2020 Net Plant
Entergy Corporation	ETR							
Capital Spending per Share			\$18.95	\$19.10	\$19.25	\$19.25	\$19.10	
Common Shares Outstanding			205.00	206.50	208.00	208.00	206.50	
Capital Expenditures			\$3,884.8	\$3,944.2	\$4,004.0	\$4,004.0	\$3,944.2	50.91%
Net Plant		\$38,853.00						
Evergy, Inc.	EVRG							
Capital Spending per Share			\$8.75	\$9.63	\$10.50	\$10.50	\$9.63	
Common Shares Outstanding			230.00	230.00	230.00	230.00	230.00	
Capital Expenditures			\$2,012.5	\$2,213.8	\$2,415.0	\$2,415.0	\$2,213.8	56.05%
Net Plant		\$20,106.00						
Hawaiian Electric Industries, Inc.	HE							
Capital Spending per Share			\$4.10	\$4.30	\$4.50	\$4.50	\$4.30	
Common Shares Outstanding			110.00	111.50	113.00	113.00	111.50	
Capital Expenditures			\$451.0	\$479.5	\$508.5	\$508.5	\$479.5	46.09%
Net Plant		\$5,265.70						
IDACORP, Inc.	IDA							
Capital Spending per Share			\$7.70	\$8.85	\$10.00	\$10.00	\$8.85	
Common Shares Outstanding			50.45	50.45	50.45	50.45	50.45	
Capital Expenditures			\$388.5	\$446.5	\$504.5	\$504.5	\$446.5	48.63%
Net Plant		\$4,709.50						
NextEra Energy, Inc.	NEE							
Capital Spending per Share			\$7.60	\$8.30	\$9.00	\$9.00	\$8.30	
Common Shares Outstanding			1980.00	2002.50	2025.00	2025.00	2002.50	
Capital Expenditures			\$15,048.0	\$16,620.8	\$18,225.0	\$18,225.0	\$16,620.8	92.31%
Net Plant		\$91,803.00						
NorthWestern Corporation	NWE							
Capital Spending per Share			\$9.70	\$8.23	\$6.75	\$6.75	\$8.23	
Common Shares Outstanding			60.00	61.00	62.00	62.00	61.00	
Capital Expenditures			\$582.0	\$501.7	\$418.5	\$418.5	\$501.7	48.91%
Net Plant		\$4,952.90						
Otter Tail Corporation	OTTR							
Capital Spending per Share			\$4.35	\$4.55	\$4.75	\$4.75	\$4.55	
Common Shares Outstanding			41.70	41.85	42.00	42.00	41.85	
Capital Expenditures			\$181.4	\$190.4	\$199.5	\$199.5	\$190.4	46.91%
Net Plant		\$2,049.30						

2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2020 NET PLANT
(\$ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2020	2022	2023	2024-2026	2024-2026	2024-2026	2022-26 Cap. Ex. / 2020 Net Plant
Pinnacle West Capital Corporation	PNW							
Capital Spending per Share			\$13.90	\$13.20	\$12.50	\$12.50	\$13.20	
Common Shares Outstanding			113.00	116.50	120.00	120.00	116.50	
Capital Expenditures			\$1,570.7	\$1,537.8	\$1,500.0	\$1,500.0	\$1,537.8	50.44%
Net Plant		\$15,159.00						
Portland General Electric Company	POR							
Capital Spending per Share			\$7.45	\$6.85	\$6.25	\$6.25	\$6.85	
Common Shares Outstanding			89.80	89.90	90.00	90.00	89.90	
Capital Expenditures			\$669.0	\$615.8	\$562.5	\$562.5	\$615.8	40.13%
Net Plant		\$7,539.00						
Southern Company	SO							
Capital Spending per Share			\$6.35	\$6.18	\$6.00	\$6.00	\$6.18	
Common Shares Outstanding			1105.00	1105.00	1105.00	1105.00	1105.00	
Capital Expenditures			\$7,016.8	\$6,823.4	\$6,630.0	\$6,630.0	\$6,823.4	38.71%
Net Plant		\$87,634.00						
Xcel Energy Inc.	XEL							
Capital Spending per Share			\$9.70	\$9.85	\$10.00	\$10.00	\$9.85	
Common Shares Outstanding			544.00	548.50	553.00	553.00	548.50	
Capital Expenditures			\$5,276.8	\$5,402.7	\$5,530.0	\$5,530.0	\$5,402.7	63.19%
Net Plant		\$42,950.00						
Empire Electric OK	EDE OK							
Capital Expenditures [8]			\$247.7	\$341.5	\$233.8	\$122.0	\$343.1	58.46%
Net Plant [9]		\$2,203.49						

Notes:

[1] - [6] Source: Value Line, dated November 12, 2021, December 10, 2021, and January 21, 2022.

[7] Equals (Column [2] + [3] + [4] + [5] + [6]) / Column [1]

[8] Company-provided data

[9] Company-provided data

COMPARISON OF EMPIRE DISTRICT ELECTRIC (OKLAHOMA) AND PROXY GROUP COMPANIES
RISK ASSESSMENT

Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	[1]	[2]	[3]	[4]	[5]
				Test Year	Rate Base	Revenue Decoupling	Capital Cost Recovery	CWIP in Rate Base
ALLETE, Inc.	ALLETE (Minnesota Power)	Minnesota	Electric	Fully Forecast	Average	No	Yes	Partial
Alliant Energy Corporation	Interstate Power & Light Co.	Iowa	Electric	Historical	Average	No	No	Known & Measurable
	Interstate Power & Light Co.	Iowa	Gas	Historical	Average	No	No	Known & Measurable
	Wisconsin Power & Light Co.	Wisconsin	Electric	Fully Forecast	Average	No	No	No
	Wisconsin Power & Light Co.	Wisconsin	Gas	Fully Forecast	Average	No	No	No
Ameren Corporation	Ameren Illinois Co.	Illinois	Electric	Historical	Year End	No	No	Partial
	Ameren Illinois Co.	Illinois	Gas	Fully Forecast	Average	Partial	Yes	Partial
	Union Electric Co.	Missouri	Electric	Historical	Year End	Partial	Yes	No
	Union Electric Co.	Missouri	Gas	Historical	Year End	Partial	Yes	No
American Electric Power Company, Inc	Southwestern Electric Power Co.	Arkansas	Electric	Historical	Year End	Partial	Yes	No
	Indiana Michigan Power Co.	Indiana	Electric	Fully Forecast	Year End	Partial	Yes	Rider
	Kentucky Power Co.	Kentucky	Electric	Fully Forecast	Year End	Partial	No	Yes
	Southwestern Electric Power Co.	Louisiana	Electric	Historical	Year End	Partial	No	Large projects only
	Indiana Michigan Power Co.	Michigan	Electric	Fully Forecast	Average	No	No	Large projects only
	Ohio Power Co.	Ohio	Electric	Partially Forecast	Year End	Partial	Yes	Partial
	Public Service Co. of Oklahoma	Oklahoma	Electric	Historical	Year End	Partial	Yes	Yes
	Kingsport Power Co.	Tennessee	Electric	Fully Forecast	Average	No	No	Yes
	AEP Texas	Texas	Electric	Historical	Year End	No	Yes	Surcharge
	Southwestern Electric Power Co.	Texas	Electric	Historical	Year End	No	Yes	Surcharge
	Appalachian Power Co.	Virginia	Electric	Historical	Year End	No	Yes	Rider
Duke Energy Corporation	Appalachian Power Co./Wheeling Power Co.	West Virginia	Electric	Historical	Average	No	No	Large projects only
	Duke Energy Florida LLC	Florida	Electric	Fully Forecast	Year End	No	Yes	Yes
	Duke Energy Indiana LLC	Indiana	Electric	Historical	Year End	Partial	Yes	Yes
	Duke Energy Kentucky Inc.	Kentucky	Electric	Fully Forecast	Average	Partial	No	Yes
	Duke Energy Kentucky Inc.	Kentucky	Gas	Fully Forecast	Average	Partial	No	Yes
	Duke Energy Carolinas LLC/Duke Energy Progress LL	North Carolina	Electric	Historical	Year End	No	No	Large projects only
	Piedmont Natural Gas Co. Inc.	North Carolina	Gas	Historical	Year End	Full	Yes	Large projects only
	Duke Energy Ohio Inc.	Ohio	Electric	Partially Forecast	Year End	Partial	Yes	Partial
	Duke Energy Ohio Inc.	Ohio	Gas	Partially Forecast	Year End	No	Yes	Partial
	Duke Energy Carolinas LLC/Duke Energy Progress LL	South Carolina	Electric	Historical	Year End	No	No	Yes
	Piedmont Natural Gas Co. Inc.	South Carolina	Gas	Historical	Year End	Partial	No	Yes
	Piedmont Natural Gas Co. Inc.	Tennessee	Gas	Fully Forecast	Average	Partial	Yes	Yes
Edison International	Southern California Edison Company	California	Electric	Fully Forecast	Average	Full	No	No
Entergy Corporation	Entergy Arkansas LLC	Arkansas	Electric	Fully Forecast	Average	Partial	Yes	Known & measurable
	Entergy New Orleans LLC	Louisiana-NOCC	Electric	Partially Forecast	Year End	Partial	Yes	Partial
	Entergy New Orleans LLC	Louisiana-NOCC	Gas	Partially Forecast	Year End	No	No	Partial
	Entergy Louisiana LLC	Louisiana	Electric	Historical	Average	Partial	Yes	Partial
	Entergy Louisiana LLC	Louisiana	Gas	Historical	Average	Partial	Yes	Partial
	Entergy Mississippi LLC	Mississippi	Electric	Fully Forecast	Average	Partial	No	Partial
	Entergy Texas Inc.	Texas	Electric	Historical	Year End	No	Yes	No
Evergy, Inc.	Evergy Kansas Central Inc	Kansas	Electric	Historical	Year End	Partial	No	Yes
	Evergy Metro Inc.	Kansas	Electric	Historical	Year End	No	Yes	Yes
	Evergy Metro Inc	Missouri	Electric	Historical	Year End	Partial	Yes	No
	Evergy Missouri West Inc.	Missouri	Electric	Historical	Year End	Partial	Yes	No
Hawaiian Electric Industries, Inc.	Hawaii Electric Company, Inc.	Hawaii	Electric	Partially Forecast	Average	Full	Yes	No
IDACORP, Inc.	Idaho Power Co.	Idaho	Electric	Partially Forecast	Year End	Full	No	Known & measurable
	Idaho Power Co.	Oregon	Electric	Partially Forecast	Average	No	No	No
NextEra Energy, Inc.	Florida Power & Light Co.	Florida	Electric	Fully Forecast	Average	No	Yes	Yes
	Gulf Power Co.	Florida	Electric	Fully Forecast	Average	No	Yes	Yes
	Pivotal Utility Holdings Inc.	Florida	Gas	Fully Forecast	Average	No	Yes	Yes
	Lone Star Transmission LLC	Texas	Electric	Historical	Year End	No	Yes	Surcharge
NorthWestern Corporation	NorthWestern Corporation	Montana	Electric	Historical	Average	Partial	No	No
	NorthWestern Corporation	Montana	Gas	Historical	Average	No	No	No
	NorthWestern Corporation	Nebraska	Gas	Historical	Year End	No	No	Yes
	NorthWestern Corporation	South Dakota	Electric	Historical	Average	No	No	No
	NorthWestern Corporation	South Dakota	Gas	Historical	Average	No	No	No
Otter Tail Corporation	Otter Tail Power Co.	Minnesota	Electric	Fully Forecast	Average	No	No	Partial
	Otter Tail Power Co.	North Dakota	Electric	Fully Forecast	Average	No	Yes	Rider
	Otter Tail Power Co.	South Dakota	Electric	Historical	Average	No	Yes	No
Pinnacle West Capital Corporation	Arizona Public Service Company	Arizona	Electric	Historical	Year End	Partial	No	Yes

COMPARISON OF EMPIRE DISTRICT ELECTRIC (OKLAHOMA) AND PROXY GROUP COMPANIES
RISK ASSESSMENT

Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	[1]	[2]	[3]	[4]	[5]
				Test Year	Rate Base	Revenue Decoupling	Capital Cost Recovery	CWIP in Rate Base
Portland General Electric Company Southern Company	Portland General Electric Co.	Oregon	Electric	Fully Forecast	Year End	Partial	Yes	No
	Alabama Power Co.	Alabama	Electric	Fully Forecast	Average	No	Yes	Yes
Xcel Energy Inc.	Georgia Power Co.	Georgia	Electric	Fully Forecast	Average	No	Yes	Large projects only
	Atlanta Gas & Light Co.	Georgia	Gas	Fully Forecast	Average	No	Yes	No
	Northern Illinois Gas Co.	Illinois	Gas	Fully Forecast	Average	Partial	Yes	Partial
	Mississippi Power Co.	Mississippi	Electric	Fully Forecast	Year End	Partial	No	Partial
	Chattanooga Gas Co.	Tennessee	Gas	Fully Forecast	Average	Partial	No	Yes
	Virginia Natural Gas Inc.	Virginia	Gas	Historical	Average	Partial	Yes	Rider
	Public Service Co. of Colorado	Colorado	Electric	Historical	Average	Partial	Yes	Partial
	Public Service Co. of Colorado	Colorado	Gas	Historical	Year End	Partial	Yes	Partial
	Northern States Power Co.-Minnesota	Minnesota	Electric	Fully Forecast	Average	Partial	No	Partial
	Northern States Power Co.-Minnesota	Minnesota	Gas	Fully Forecast	Average	No	Yes	Partial
	Southwestern Public Service Co.	New Mexico	Electric	Historical	Year End	No	No	Yes
	Northern States Power Co.-Minnesota	North Dakota	Electric	Fully Forecast	Average	No	Yes	Rider
	Northern States Power Co.-Minnesota	North Dakota	Gas	Fully Forecast	Average	No	No	No
	Northern States Power Co.-Minnesota	South Dakota	Electric	Historical	Average	Partial	Yes	No
	Southwestern Public Service Co.	Texas	Electric	Historical	Year End	No	Yes	Surcharge
	Northern States Power Co.-Wisconsin	Wisconsin	Electric	Fully Forecast	Average	No	No	Rider
Northern States Power Co.-Wisconsin	Wisconsin	Gas	Fully Forecast	Average	No	No	Rider	
Proxy Group Average			Fully Forecast	33	Year End: 36	Full: 4	Yes: 44	Yes: 20
			Partially Forecast	8	Average: 43	Partial: 34	No: 35	Partial: 18
			Historical	38		No: 41		
			Forecast	51.90%	Year End: 45.57%	Full/Partial: 48.10%	Yes: 55.70%	Yes/Partial: 48.10%
ED Oklahoma	Empire District Oklahoma	Oklahoma	Electric	Historical	Year End	Year End	No	No

Notes:

[1] Sources: Regulatory Research Associates, effective as of January 31, 2022

[2] Sources: Regulatory Research Associates, effective as of January 31, 2022

[3] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated November 12, 2019. Operating subsidiaries not covered in this report were excluded from this exhibit.

[4] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated November 12, 2019. Operating subsidiaries not covered in this report were excluded from this exhibit.

FLOTATION COST ADJUSTMENT

Company	Date	Shares Issued	Offering Price	Underwriting Discount	Offering Expense	Net Proceeds	Total Flotation Costs	Gross Equity Issue before Costs	Net Proceeds	Flotation Cost Percentage
Algonquin Power & Utilities Corp.	6/17/2021	23,000,000	\$50.000	\$1.200	\$0.078	\$48.722	\$29,400,000	\$1,150,000,000	\$1,120,600,000	2.557%
Algonquin Power & Utilities Corp.	10/10/2019	16,252,542	\$13.500	\$0.530	\$0.000	\$12.970	\$8,613,847	\$219,409,317	\$210,795,470	3.926%
ALLETE, Inc.	2/27/2014	3,220,000	\$49.750	\$1.741	\$0.140	\$47.869	\$6,056,986	\$160,195,000	\$154,138,014	3.781%
ALLETE, Inc.	5/25/2001	7,475,000	\$23.680	\$0.947	\$0.047	\$22.686	\$7,430,320	\$177,008,000	\$169,577,680	4.198%
Alliant Energy Corporation	11/14/2019	4,275,127	\$52.630	\$0.400	\$0.117	\$52.113	\$2,210,051	\$224,999,934	\$222,789,883	0.982%
Alliant Energy Corporation	12/13/2018	8,358,973	\$44.850	\$0.520	\$0.120	\$44.210	\$5,346,666	\$374,899,939	\$369,553,273	1.426%
Ameren Corporation	8/5/2019	7,549,205	\$74.300	\$0.120	\$0.099	\$74.081	\$1,655,905	\$560,905,932	\$559,250,027	0.295%
Ameren Corporation	9/9/2009	21,850,000	\$25.250	\$0.758	\$0.021	\$24.472	\$17,001,375	\$551,712,500	\$534,711,125	3.082%
American Electric Power Company, Inc.	4/1/2009	69,000,000	\$24.500	\$0.735	\$0.006	\$23.759	\$51,115,000	\$1,690,500,000	\$1,639,385,000	3.024%
American Electric Power Company, Inc.	2/27/2003	57,500,000	\$20.950	\$0.629	\$0.010	\$20.312	\$36,688,750	\$1,204,625,000	\$1,167,936,250	3.046%
Duke Energy Corporation	11/18/2019	28,750,000	\$86.450	\$0.460	\$0.021	\$85.969	\$13,817,000	\$2,485,437,500	\$2,471,620,500	0.556%
Duke Energy Corporation	3/8/2018	21,275,000	\$74.070	\$0.000	\$0.021	\$74.049	\$450,000	\$1,575,839,250	\$1,575,389,250	0.029%
Edison International	7/30/2019	32,200,000	\$68.500	\$1.630	\$0.023	\$66.847	\$53,211,000	\$2,205,700,000	\$2,152,489,000	2.412%
Entergy Corporation	6/6/2018	15,282,392	\$75.250	\$0.800	\$0.043	\$74.407	\$12,875,914	\$1,149,999,998	\$1,137,124,084	1.120%
Evergy, Inc.	9/27/2016	60,490,000	\$26.460	\$0.794	\$0.008	\$25.658	\$48,498,815	\$1,600,565,400	\$1,552,066,585	3.030%
Evergy, Inc.	9/23/2013	8,916,000	\$31.150	\$1.090	\$0.028	\$30.032	\$9,968,440	\$277,733,400	\$267,764,960	3.589%
Hawaiian Electric Industries, Inc.	3/18/2013	7,000,000	\$26.750	\$1.003	\$0.064	\$25.683	\$7,471,700	\$187,250,000	\$179,778,300	3.990%
Hawaiian Electric Industries, Inc.	12/2/2008	5,750,000	\$23.000	\$0.863	\$0.052	\$22.085	\$5,259,375	\$132,250,000	\$126,990,625	3.977%
IDACORP, Inc.	12/9/2004	4,025,000	\$30.000	\$1.200	\$0.075	\$28.725	\$5,130,000	\$120,750,000	\$115,620,000	4.248%
NextEra Energy, Inc.	11/1/2016	13,800,000	\$124.000	\$0.000	\$0.054	\$123.946	\$750,000	\$1,711,200,000	\$1,710,450,000	0.044%
NextEra Energy, Inc.	11/18/2013	11,100,000	\$88.030	\$0.000	\$0.068	\$87.962	\$750,000	\$977,133,000	\$976,383,000	0.077%
NorthWestern Corporation	9/29/2015	6,985,982	\$53.500	\$1.610	\$0.129	\$51.761	\$12,147,431	\$373,750,037	\$361,602,606	3.250%
NorthWestern Corporation	9/29/2015	1,100,000	\$51.810	\$1.330	\$0.909	\$49.571	\$2,463,000	\$56,991,000	\$54,528,000	4.322%
Otter Tail Corporation	9/18/2008	5,175,000	\$30.000	\$1.088	\$0.077	\$28.835	\$6,027,813	\$155,250,000	\$149,222,188	3.883%
Otter Tail Corporation	12/7/2004	3,335,000	\$25.450	\$0.950	\$0.090	\$24.410	\$3,468,250	\$84,875,750	\$81,407,500	4.086%
Pinnacle West Capital Corporation	4/8/2010	6,900,000	\$38.000	\$1.330	\$0.028	\$36.642	\$9,367,000	\$262,200,000	\$252,833,000	3.572%
Pinnacle West Capital Corporation	4/27/2005	6,095,000	\$42.000	\$1.365	\$0.041	\$40.594	\$8,569,675	\$255,990,000	\$247,420,325	3.348%
Portland General Electric Company	6/11/2013	12,765,000	\$29.500	\$0.959	\$0.047	\$28.494	\$12,839,082	\$376,567,500	\$363,728,418	3.410%
Portland General Electric Company	3/5/2009	12,477,500	\$14.100	\$0.494	\$0.030	\$13.576	\$6,532,646	\$175,932,750	\$169,400,104	3.713%
Southern Company	8/16/2016	32,500,000	\$49.300	\$1.660	\$0.017	\$47.623	\$54,507,000	\$1,602,250,000	\$1,547,743,000	3.402%
Southern Company	5/5/2016	18,300,000	\$48.600	\$2.020	\$0.022	\$46.558	\$37,361,000	\$889,380,000	\$852,019,000	4.201%
Xcel Energy Inc.	10/30/2019	11,845,000	\$63.320	\$0.630	\$0.055	\$62.635	\$8,112,350	\$750,025,400	\$741,913,050	1.082%
Xcel Energy Inc.	11/7/2018	9,359,103	\$49.150	\$0.150	\$0.069	\$48.931	\$2,053,865	\$459,999,912	\$457,946,047	0.446%
<i>Weighted Average Flotation Costs</i>							\$487,150,255	\$24,181,326,519	\$23,694,176,264	2.015%

The flotation adjustment is derived by dividing the dividend yield by 1-F (where F = flotation costs expressed in percentage terms), or by 0.9799, and adding that result to the constant growth rate to determine the cost of equity. Using the formulas shown previously in my testimony, the Constant Growth DCF calculation is modified as follows to accommodate an adjustment for flotation costs:

$$k = \frac{D \times (1 + .5g)}{P \times (1 - F)} + g$$

Source: S&P Capital IQ Pro

FLOTATION COST ADJUSTMENT

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	
	Stock Price	Annualized Dividend	Dividend Yield	Expected Dividend Yield	Expected Dividend Yield Adjusted for Flotation Costs	Proj EPS Growth (Zacks)	Proj EPS Growth (Value Line)	Proj EPS Growth (First Call)	Average Growth Estimate	DCF k(e)	Flotation Adjusted DCF k(e)	
ALLETE, Inc.	ALE	\$65.05	\$2.52	3.87%	3.98%	4.06%	6.00%	5.00%	5.67%	5.56%	9.54%	9.62%
Alliant Energy Corporation	LNT	\$60.03	\$1.71	2.85%	2.93%	2.99%	6.10%	5.50%	6.10%	5.90%	8.83%	8.89%
Ameren Corporation	AEE	\$87.63	\$2.20	2.51%	2.60%	2.66%	7.50%	6.50%	7.90%	7.30%	9.90%	9.96%
American Electric Power Company, Inc.	AEP	\$89.06	\$3.12	3.50%	3.61%	3.68%	5.60%	6.50%	5.70%	5.93%	9.54%	9.61%
Duke Energy Corporation	DUK	\$103.52	\$3.94	3.81%	3.91%	3.99%	5.30%	7.00%	3.70%	5.33%	9.24%	9.32%
Edison International	EIX	\$65.13	\$2.80	4.30%	4.40%	4.49%	3.70%	NMF	5.80%	4.75%	9.15%	9.24%
Entergy Corporation	ETR	\$110.35	\$4.04	3.66%	3.72%	3.80%	1.00%	3.00%	6.00%	3.33%	7.06%	7.13%
Evergy, Inc.	EVRG	\$66.20	\$2.29	3.46%	3.57%	3.64%	6.10%	8.00%	5.12%	6.41%	9.98%	10.05%
Hawaiian Electric Industries, Inc.	HE	\$41.64	\$1.36	3.27%	3.33%	3.40%	7.30%	3.00%	1.30%	3.87%	7.20%	7.26%
IDACORP, Inc.	IDA	\$110.42	\$3.00	2.72%	2.77%	2.83%	4.40%	4.00%	4.40%	4.27%	7.04%	7.10%
NextEra Energy, Inc.	NEE	\$85.45	\$1.54	1.80%	1.89%	1.93%	8.80%	10.50%	9.17%	9.49%	11.38%	11.42%
NorthWestern Corporation	NWE	\$56.95	\$2.48	4.36%	4.43%	4.52%	4.10%	2.00%	4.50%	3.53%	7.97%	8.06%
Otter Tail Corporation	OTTR	\$66.07	\$1.56	2.36%	2.45%	2.50%	4.70%	8.00%	9.00%	7.23%	9.68%	9.73%
Pinnacle West Capital Corporation	PNW	\$69.98	\$3.40	4.86%	4.92%	5.02%	5.00%	Nil	0.10%	2.55%	7.47%	7.57%
Portland General Electric Company	POR	\$52.42	\$1.72	3.28%	3.41%	3.48%	8.60%	7.00%	7.15%	7.58%	10.99%	11.06%
Southern Company	SO	\$67.86	\$2.64	3.89%	4.00%	4.08%	4.90%	6.00%	6.20%	5.70%	9.70%	9.78%
Xcel Energy Inc.	XEL	\$68.15	\$1.83	2.69%	2.77%	2.83%	6.40%	6.00%	6.90%	6.43%	9.21%	9.26%
PROXY GROUP MEDIAN										9.24%	9.32%	

MEDIAN											9.32%
UNADJUSTED CONSTANT GROWTH DCF MEDIAN											9.24%
DIFFERENCE (FLOTATION COST ADJUSTMENT)										[12]	0.08%

[1] Source: Bloomberg, 30-day average price

[2] Bloomberg

[3] = Col. [1] / Col. [2] or [Annualized Dividend] / [Price]

[4] = Col. [3] x [1 + (.5 x Col. [9])] or [Dividend Yield] x [1 + (.5 x average growth rate)]

[5] = [Expected Dividend Yield] / [1 - Flotation Cost Percentage]

[6] Source: Zacks

[7] Source: Value Line

[8] Source: First Call

[9] Average of columns [6], [7], [8]

[10] = Column [4] + Column [9]

[11] = Column [5] + Column [9]

[12] = Col. [11] - Col. [10] or [Median Adjusted DCF] - [Median Unadjusted DCF]

CAPITAL STRUCTURE ANALYSIS

COMMON EQUITY RATIO [1]

Proxy Group Company	Ticker	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	Average
ALLETE, Inc.	ALE	56.02%	55.80%	56.77%	58.15%	54.41%	55.87%	58.34%	59.55%	56.86%
Alliant Energy Corporation	LNT	53.49%	54.25%	53.80%	53.29%	53.16%	52.01%	53.46%	52.54%	53.25%
Ameren Corporation	AEE	53.53%	52.34%	54.24%	53.44%	54.59%	53.59%	52.24%	52.85%	53.35%
American Electric Power Company, Inc.	AEP	50.57%	47.46%	47.66%	48.15%	47.85%	48.01%	48.13%	48.37%	48.28%
Duke Energy Corporation	DUK	53.27%	53.36%	53.36%	52.95%	52.70%	52.31%	52.02%	52.56%	52.81%
Edison International	EIX	48.23%	49.89%	52.40%	51.85%	51.72%	52.12%	51.47%	53.79%	51.43%
Entergy Corporation	ETR	46.90%	46.28%	45.23%	46.33%	47.69%	47.50%	47.19%	48.12%	46.90%
Evergy, Inc.	EVRG	60.28%	59.59%	59.56%	59.08%	59.12%	58.01%	59.76%	59.81%	59.40%
Hawaiian Electric Industries, Inc.	HE	56.69%	56.44%	56.28%	57.84%	57.28%	56.89%	57.74%	59.36%	57.31%
IDACORP, Inc.	IDA	55.06%	54.41%	54.06%	53.96%	54.04%	51.25%	55.18%	55.14%	54.14%
NextEra Energy, Inc.	NEE	63.53%	60.64%	61.76%	60.45%	60.35%	63.00%	59.77%	59.37%	61.11%
NorthWestern Corporation	NWE	47.58%	46.39%	46.04%	47.17%	48.26%	48.61%	47.78%	47.59%	47.43%
Otter Tail Corporation	OTTR	54.67%	54.39%	54.31%	54.17%	52.72%	52.84%	50.85%	51.12%	53.13%
Pinnacle West Capital Corporation	PNW	51.13%	51.63%	51.50%	51.35%	51.58%	51.89%	53.66%	52.80%	51.94%
Portland General Electric Company	POR	44.79%	47.69%	47.82%	46.07%	47.85%	48.33%	50.09%	49.85%	47.81%
Southern Company	SO	55.45%	54.09%	55.41%	54.89%	55.70%	54.28%	54.92%	54.17%	54.86%
Xcel Energy Inc.	XEL	54.21%	53.90%	53.47%	54.82%	54.32%	52.78%	54.56%	54.29%	54.04%
MEAN		53.26%	52.86%	53.16%	53.17%	53.14%	52.90%	53.36%	53.60%	53.18%
LOW		44.79%	46.28%	45.23%	46.07%	47.69%	47.50%	47.19%	47.59%	46.90%
HIGH		63.53%	60.64%	61.76%	60.45%	60.35%	63.00%	59.77%	59.81%	61.11%

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES [2]

Company Name	Ticker	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	Average
ALLETE (Minnesota Power)	ALE	55.99%	55.76%	56.68%	58.12%	54.30%	55.80%	58.32%	59.59%	56.82%
Superior Water, Light and Power Company	ALE	57.51%	57.58%	60.29%	59.27%	58.94%	58.68%	59.14%	58.08%	58.69%
Interstate Power and Light Company	LNT	54.02%	53.67%	53.43%	53.62%	53.40%	51.70%	52.68%	51.72%	53.03%
Wisconsin Power and Light Company	LNT	52.76%	55.10%	54.34%	52.78%	52.78%	52.47%	54.64%	53.78%	53.58%
Ameren Illinois Company	AEE	54.98%	54.27%	56.35%	55.49%	56.88%	56.48%	54.66%	53.37%	55.31%
Union Electric Company	AEE	52.28%	50.65%	52.37%	51.61%	52.48%	50.88%	50.02%	52.36%	51.58%
AEP Texas, Inc.	AEP	41.68%	40.97%	42.77%	42.41%	42.06%	45.04%	44.16%	43.77%	42.86%
Appalachian Power Company	AEP	100.00%	47.55%	47.17%	47.19%	47.10%	46.65%	49.16%	48.74%	54.20%
Indiana Michigan Power Company	AEP	47.48%	47.22%	49.09%	48.67%	48.35%	47.83%	47.42%	46.74%	47.85%
Kentucky Power Company	AEP	44.00%	43.40%	45.69%	45.28%	44.88%	44.57%	44.60%	47.34%	44.97%
Kingsport Power Company	AEP	53.66%	53.51%	53.68%	53.42%	55.42%	54.98%	55.04%	54.62%	54.29%
Ohio Power Company	AEP	44.68%	49.10%	48.63%	52.42%	52.10%	51.75%	51.18%	54.50%	50.54%
Public Service Company of Oklahoma	AEP	54.31%	57.53%	54.73%	52.88%	51.95%	50.57%	49.51%	49.69%	52.64%
Southwestern Electric Power Company	AEP	50.55%	48.78%	47.60%	50.78%	50.57%	49.71%	48.97%	48.80%	49.49%
Wheeling Power Company	AEP	54.00%	53.71%	53.94%	54.10%	53.86%	53.55%	53.89%	53.51%	53.82%
Duke Energy Carolinas, LLC	DUK	51.64%	51.40%	52.69%	52.33%	51.93%	51.56%	50.26%	52.11%	51.74%
Duke Energy Florida, LLC	DUK	55.67%	53.66%	52.98%	52.59%	52.10%	51.12%	51.30%	49.91%	52.42%
Duke Energy Indiana, LLC	DUK	55.08%	54.84%	54.32%	53.74%	53.08%	50.12%	50.22%	52.84%	53.03%
Duke Energy Kentucky, Inc.	DUK	52.62%	52.21%	50.30%	49.54%	49.28%	51.35%	50.07%	49.37%	50.59%
Duke Energy Ohio, Inc.	DUK	63.53%	63.20%	62.99%	62.46%	62.16%	61.73%	65.61%	65.22%	63.36%
Duke Energy Progress, LLC	DUK	49.33%	51.81%	51.03%	50.69%	51.10%	52.23%	51.82%	51.29%	51.16%
Southern California Edison Company	EIX	48.23%	49.89%	52.40%	51.85%	51.72%	52.12%	51.47%	53.79%	51.43%
Entergy Arkansas, Inc.	ETR	47.97%	47.04%	46.62%	45.94%	44.42%	47.93%	47.46%	47.90%	46.91%
Entergy Louisiana, LLC	ETR	45.02%	44.51%	43.54%	45.62%	48.23%	46.62%	46.00%	47.47%	45.87%
Entergy Mississippi, Inc.	ETR	47.53%	46.65%	45.91%	48.19%	47.91%	47.09%	48.92%	48.60%	47.60%
Entergy New Orleans, LLC	ETR	48.73%	49.06%	48.65%	48.59%	44.14%	43.23%	42.79%	47.01%	46.52%
Entergy Texas, Inc.	ETR	51.18%	50.79%	48.02%	47.45%	52.68%	51.59%	50.97%	50.92%	50.45%
Atlantic City Electric Company	EXC	50.94%	50.29%	49.88%	49.90%	49.71%	49.70%	49.19%	49.29%	49.86%
Baltimore Gas and Electric Company	EXC	53.15%	50.10%	54.02%	53.22%	52.37%	50.78%	53.59%	52.80%	52.51%
Commonwealth Edison Company	EXC	54.71%	54.36%	53.81%	55.03%	54.52%	52.50%	52.64%	54.94%	54.06%
Delmarva Power & Light Company	EXC	50.37%	50.28%	50.18%	50.05%	50.17%	50.17%	50.10%	50.12%	50.18%
PECO Energy Company	EXC	53.48%	53.69%	51.54%	53.35%	53.10%	52.71%	55.26%	53.62%	53.34%
Potomac Electric Power Company	EXC	50.20%	50.11%	50.26%	50.12%	50.26%	50.11%	50.24%	50.16%	50.18%
Kansas City Power & Light Company	EVRG	51.20%	49.86%	49.05%	48.69%	48.77%	47.12%	49.97%	50.31%	49.37%
Kansas Gas and Electric Company	EVRG	83.27%	82.90%	82.73%	82.66%	82.55%	82.18%	82.03%	81.96%	82.53%
KCP&L Greater Missouri Operations Company	EVRG	50.37%	49.01%	51.85%	51.97%	52.91%	51.74%	50.52%	50.34%	51.09%
Westar Energy (KPL)	EVRG	58.65%	58.47%	58.00%	57.03%	56.97%	55.81%	57.92%	57.97%	57.60%
Hawaiian Electric Company, Inc.	HE	56.69%	56.44%	56.28%	57.84%	57.28%	56.89%	57.74%	59.36%	57.31%
Idaho Power Co.	IDA	55.06%	54.41%	54.06%	53.96%	54.04%	51.25%	55.18%	55.14%	54.14%
Florida Power & Light Company	NEE	63.35%	60.23%	61.44%	60.04%	59.99%	63.16%	60.14%	60.24%	61.07%
Gulf Power Company	NEE	65.27%	64.56%	64.81%	64.07%	63.66%	61.51%	55.97%	50.30%	61.27%
NorthWestern Corporation	NWE	47.58%	46.39%	46.04%	47.17%	48.26%	48.61%	47.78%	47.59%	47.43%
Oklahoma Gas and Electric Company	OGE	53.16%	53.14%	56.20%	53.04%	52.78%	53.09%	55.28%	55.15%	53.98%
Otter Tail Power Company	OTTR	54.67%	54.39%	54.31%	54.17%	52.72%	52.84%	50.85%	51.12%	53.13%
Arizona Public Service Company	PNW	51.13%	51.63%	51.50%	51.35%	51.58%	51.89%	53.66%	52.80%	51.94%
Portland General Electric Company	POR	44.79%	47.69%	47.82%	46.07%	47.85%	48.33%	50.09%	49.85%	47.81%
Southern Company	SO	55.45%	54.09%	55.41%	54.89%	55.70%	54.28%	54.92%	54.17%	54.86%
Northern States Power Company - MN	XEL	52.62%	52.07%	51.37%	53.19%	52.20%	50.13%	52.55%	52.20%	52.04%
Northern States Power Company - WI	XEL	52.07%	54.87%	54.83%	53.85%	53.13%	52.61%	54.90%	54.23%	53.81%
Public Service Company of Colorado	XEL	56.05%	55.42%	54.94%	56.82%	56.56%	54.60%	56.58%	56.32%	55.91%
Southwestern Public Service Company	XEL	54.25%	54.19%	54.27%	54.17%	54.15%	54.22%	54.13%	54.14%	54.19%

Notes:

[1] Ratios are weighted by actual common capital, preferred capital, and long-term debt of Operating Subsidiaries.

[2] Natural Gas and Electric Operating Subsidiaries with data listed as N/A from SNL Financial have been excluded from the analysis.

CAPITAL STRUCTURE ANALYSIS

LONG-TERM DEBT RATIO [1]

Proxy Group Company	Ticker	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	Average
ALLETE, Inc.	ALE	43.98%	44.20%	43.23%	41.85%	45.59%	44.13%	41.66%	40.45%	43.14%
Alliant Energy Corporation	LNT	46.51%	45.75%	46.20%	46.71%	46.84%	47.99%	46.54%	47.46%	46.75%
Ameren Corporation	AEE	46.47%	47.66%	45.76%	46.56%	45.41%	46.41%	47.76%	47.15%	46.65%
American Electric Power Company, Inc.	AEP	49.43%	52.54%	52.34%	51.85%	52.15%	51.99%	51.87%	51.63%	51.72%
Duke Energy Corporation	DUK	46.73%	46.64%	46.64%	47.05%	47.30%	47.69%	47.98%	47.44%	47.19%
Edison International	EIX	51.77%	50.11%	47.60%	48.15%	48.28%	47.88%	48.53%	46.21%	48.57%
Entergy Corporation	ETR	53.10%	53.72%	54.77%	53.67%	52.31%	52.50%	52.81%	51.88%	53.10%
Evergy, Inc.	EVRG	39.72%	40.41%	40.44%	40.92%	40.88%	41.99%	40.24%	40.19%	40.60%
Hawaiian Electric Industries, Inc.	HE	43.31%	43.56%	43.72%	42.16%	42.72%	43.11%	42.26%	40.64%	42.69%
IDACORP, Inc.	IDA	44.94%	45.59%	45.94%	46.04%	45.96%	48.75%	44.82%	44.86%	45.86%
NextEra Energy, Inc.	NEE	36.47%	39.36%	38.24%	39.55%	39.65%	37.00%	40.23%	40.63%	38.89%
NorthWestern Corporation	NWE	52.42%	53.61%	53.96%	52.83%	51.74%	51.39%	52.22%	52.41%	52.57%
Otter Tail Corporation	OTTR	45.33%	45.61%	45.69%	45.83%	47.28%	47.16%	49.15%	48.88%	46.87%
Pinnacle West Capital Corporation	PNW	48.87%	48.37%	48.50%	48.65%	48.42%	48.11%	46.34%	47.20%	48.06%
Portland General Electric Company	POR	55.21%	52.31%	52.18%	53.93%	52.15%	51.67%	49.91%	50.15%	52.19%
Southern Company	SO	44.55%	45.91%	44.59%	45.11%	44.30%	45.72%	45.08%	45.83%	45.14%
Xcel Energy Inc.	XEL	45.79%	46.10%	46.53%	45.18%	45.68%	47.22%	45.44%	45.71%	45.96%
MEAN		46.74%	47.14%	46.84%	46.83%	46.86%	47.10%	46.64%	46.40%	46.82%
LOW		36.47%	39.36%	38.24%	39.55%	39.65%	37.00%	40.23%	40.19%	38.89%
HIGH		55.21%	53.72%	54.77%	53.93%	52.31%	52.50%	52.81%	52.41%	53.10%

LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES [2]

Company Name	Ticker	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	Average
ALLETE (Minnesota Power)	ALE	44.01%	44.24%	43.32%	41.88%	45.70%	44.20%	41.68%	40.41%	43.18%
Superior Water, Light and Power Company	ALE	42.49%	42.42%	39.71%	40.73%	41.06%	41.32%	40.86%	41.92%	41.31%
Interstate Power and Light Company	LNT	45.98%	46.33%	46.57%	46.38%	46.60%	48.30%	47.32%	48.28%	46.97%
Wisconsin Power and Light Company	LNT	47.24%	44.90%	45.66%	47.22%	47.22%	47.53%	45.36%	46.22%	46.42%
Ameren Illinois Company	AEE	45.02%	45.73%	43.65%	44.51%	43.12%	43.52%	45.34%	46.63%	44.69%
Union Electric Company	AEE	47.72%	49.35%	47.63%	48.39%	47.52%	49.12%	49.98%	47.64%	48.42%
AEP Texas, Inc.	AEP	58.32%	59.03%	57.23%	57.59%	57.94%	54.96%	55.84%	56.23%	57.14%
Appalachian Power Company	AEP	0.00%	52.45%	52.83%	52.81%	52.90%	53.35%	50.84%	51.26%	45.80%
Indiana Michigan Power Company	AEP	52.52%	52.78%	50.91%	51.33%	51.65%	52.17%	52.58%	53.26%	52.15%
Kentucky Power Company	AEP	56.00%	56.60%	54.31%	54.72%	55.12%	55.43%	55.40%	52.66%	55.03%
Kingsport Power Company	AEP	46.34%	46.49%	46.32%	46.58%	44.58%	45.02%	44.96%	45.38%	45.71%
Ohio Power Company	AEP	55.32%	50.90%	51.37%	47.58%	47.90%	48.25%	48.82%	45.50%	49.46%
Public Service Company of Oklahoma	AEP	45.69%	42.47%	45.27%	47.12%	48.05%	49.43%	50.49%	50.31%	47.36%
Southwestern Electric Power Company	AEP	49.45%	51.22%	52.20%	49.22%	49.43%	50.29%	51.03%	51.20%	50.51%
Wheeling Power Company	AEP	46.00%	46.29%	46.06%	45.90%	46.14%	46.45%	46.11%	46.49%	46.18%
Duke Energy Carolinas, LLC	DUK	48.36%	48.60%	47.31%	47.67%	48.07%	48.44%	49.74%	47.89%	48.26%
Duke Energy Florida, LLC	DUK	44.33%	46.34%	47.02%	47.41%	47.90%	48.88%	48.70%	50.09%	47.58%
Duke Energy Indiana, LLC	DUK	44.92%	45.16%	45.68%	46.26%	46.92%	49.88%	49.78%	47.16%	46.97%
Duke Energy Kentucky, Inc.	DUK	47.38%	47.79%	49.70%	50.46%	50.72%	48.65%	49.93%	50.63%	49.41%
Duke Energy Ohio, Inc.	DUK	36.47%	36.80%	37.01%	37.54%	37.84%	38.27%	34.39%	34.78%	36.64%
Duke Energy Progress, LLC	DUK	50.67%	48.19%	48.97%	49.31%	48.90%	47.77%	48.18%	48.71%	48.84%
Southern California Edison Company	EIX	51.77%	50.11%	47.60%	48.15%	48.28%	47.88%	48.53%	46.21%	48.57%
Entergy Arkansas, Inc.	ETR	52.03%	52.96%	53.38%	54.06%	55.58%	52.07%	52.54%	52.10%	53.09%
Entergy Louisiana, LLC	ETR	54.98%	55.49%	56.46%	54.38%	51.77%	53.38%	54.00%	52.53%	54.13%
Entergy Mississippi, Inc.	ETR	52.47%	53.35%	54.09%	51.81%	52.09%	52.91%	51.08%	51.40%	52.40%
Entergy New Orleans, LLC	ETR	51.27%	50.94%	51.35%	51.41%	55.86%	56.77%	57.21%	52.99%	53.48%
Entergy Texas, Inc.	ETR	48.82%	49.21%	51.98%	52.55%	47.32%	48.41%	49.03%	49.08%	49.55%
Atlantic City Electric Company	EXC	49.06%	49.71%	50.12%	50.10%	50.29%	50.30%	50.81%	50.71%	50.14%
Baltimore Gas and Electric Company	EXC	46.85%	49.90%	45.98%	46.78%	47.63%	49.22%	46.41%	47.20%	47.49%
Commonwealth Edison Company	EXC	45.29%	45.64%	46.19%	44.97%	45.48%	47.50%	47.36%	45.06%	45.94%
Delmarva Power & Light Company	EXC	49.63%	49.72%	49.82%	49.95%	49.83%	49.83%	49.90%	49.88%	49.82%
PECO Energy Company	EXC	46.52%	46.31%	48.46%	46.65%	46.90%	47.29%	44.74%	46.38%	46.66%
Potomac Electric Power Company	EXC	49.80%	49.89%	49.74%	49.88%	49.74%	49.89%	49.76%	49.84%	49.82%
Kansas City Power & Light Company	EVRG	48.80%	50.14%	50.95%	51.31%	51.23%	52.88%	50.03%	49.69%	50.63%
Kansas Gas and Electric Company	EVRG	16.73%	17.10%	17.27%	17.34%	17.45%	17.82%	17.97%	18.04%	17.47%
KCP&L Greater Missouri Operations Company	EVRG	49.63%	50.99%	48.15%	48.03%	47.09%	48.26%	49.48%	49.66%	48.91%
Westar Energy (KPL)	EVRG	41.35%	41.53%	42.00%	42.97%	43.03%	44.19%	42.08%	42.03%	42.40%
Hawaiian Electric Company, Inc.	HE	43.31%	43.56%	43.72%	42.16%	42.72%	43.11%	42.26%	40.64%	42.69%
Idaho Power Co.	IDA	44.94%	45.59%	45.94%	46.04%	45.96%	48.75%	44.82%	44.86%	45.86%
Florida Power & Light Company	NEE	36.65%	39.77%	38.56%	39.96%	40.01%	36.84%	39.86%	39.76%	38.93%
Gulf Power Company	NEE	34.73%	35.44%	35.19%	35.93%	36.34%	38.49%	44.03%	49.70%	38.73%
NorthWestern Corporation	NWE	52.42%	53.61%	53.96%	52.83%	51.74%	51.39%	52.22%	52.41%	52.57%
Oklahoma Gas and Electric Company	OGE	46.84%	46.86%	43.80%	46.96%	47.22%	46.91%	44.72%	44.85%	46.02%
Otter Tail Power Company	OTTR	45.33%	45.61%	45.69%	45.83%	47.28%	47.16%	49.15%	48.88%	46.87%
Arizona Public Service Company	PNW	48.87%	48.37%	48.50%	48.65%	48.42%	48.11%	46.34%	47.20%	48.06%
Portland General Electric Company	POR	55.21%	52.31%	52.18%	53.93%	52.15%	51.67%	49.91%	50.15%	52.19%
Southern Company	SO	44.55%	45.91%	44.59%	45.11%	44.30%	45.72%	45.08%	45.83%	45.14%
Northern States Power Company - MN	XEL	47.38%	47.93%	48.63%	46.81%	47.80%	49.87%	47.45%	47.80%	47.96%
Northern States Power Company - WI	XEL	47.93%	45.13%	45.17%	46.15%	46.87%	47.39%	45.10%	45.77%	46.19%
Public Service Company of Colorado	XEL	43.95%	44.58%	45.06%	43.18%	43.44%	45.40%	43.42%	43.68%	44.09%
Southwestern Public Service Company	XEL	45.75%	45.81%	45.73%	45.83%	45.85%	45.78%	45.87%	45.86%	45.81%

Notes:

[1] Ratios are weighted by actual common capital, preferred capital, and long-term debt of Operating Subsidiaries.

[2] Natural Gas and Electric Operating Subsidiaries with data listed as N/A from SNL Financial have been excluded from the analysis.

CERTIFICATION

The undersigned, Daniel Dane, deposes and states that he is a Senior Vice President at Concentric Energy Advisors, that he has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and accurate to the best of his information, knowledge and belief after reasonable inquiry.

/s/ Daniel S. Dane _____

Daniel S. Dane