

1 the required return for the two small water utilities calculated using the DCF model
2 was on average 99 basis points higher than the two larger water utilities.⁴⁵

3 Additionally, Chrétien and Coggins (2011) studied the CAPM and its ability
4 to estimate the risk premium for the utility industry, and in particular subgroups
5 of utilities.⁴⁶ The article considered the CAPM, the Fama-French three-factor
6 model, and a model similar to the ECAPM, which as previously discussed, I have
7 also considered in estimating the cost of equity for the Company. In the study, the
8 Fama-French three-factor model explicitly included an adjustment to the CAPM
9 for risk associated with size. As Chrétien and Coggins (2011) show, the beta
10 coefficient on the size variable for the U.S. natural gas utility group was positive
11 and statistically significant indicating that small size risk was relevant for regulated
12 natural gas utilities.⁴⁷

13 Q. HAVE REGULATORS IN OTHER JURISDICTIONS MADE A SPECIFIC RISK
14 ADJUSTMENT TO THE COST OF EQUITY RESULTS BASED ON A
15 COMPANY'S SMALL SIZE?

16 A. Yes. In Order No. 15, the Regulatory Commission of Alaska (RCA) concluded that
17 Alaska Electric Light and Power Company (AEL&P) was riskier than the proxy
18 group companies due to small size as well as other business risks. The RCA did
19 "not believe that adopting the upper end of the range of ROE analyses in this case,
20 without an explicit adjustment, would adequately compensate AEL&P for its
21 greater risk."⁴⁸ Thus, the RCA awarded AEL&P an ROE of 12.875 percent, which
22 was 108 basis points above the highest cost of equity estimate from any model

45 *Id.*

46 Chrétien, Stéphanie, and Frank Coggins. "Cost Of Equity For Energy Utilities: Beyond The CAPM." *Energy Studies Review*, Vol. 18, No. 2, 2011.

47 *Id.*

48 Regulatory Commission of Alaska, Docket No. U-10-29, Order No. 15, September 2, 2011, at 37.

1 presented in the case.⁴⁹ Similarly, the RCA has also noted that small size, as well
2 as other business risks such as structural regulatory lag, weather risk, alternative
3 rate mechanisms, gas supply risk, geographic isolation and economic conditions,
4 increased the risk of ENSTAR Natural Gas Company.⁵⁰ Ultimately, the RCA
5 concluded that:

6 Although we agree that the risk factors identified by ENSTAR
7 increase its risk, we do not attempt to quantify the amount of that
8 increase. Rather, we take the factors into consideration when
9 evaluating the remainder of the record and the recommendations
10 presented by the parties. After applying our reasoned judgment to
11 the record, we find that 11.875% represents a fair ROE for
12 ENSTAR.⁵¹

13 Additionally, the Minnesota Public Utilities Commission (Minnesota PUC)
14 authorized an ROE for OTP above the mean DCF results as a result of multiple
15 factors, including OTP's small size. The Minnesota PUC stated:

16 The record in this case establishes a compelling basis for selecting an
17 ROE above the mean average within the DCF range, given Otter Tail's
18 unique characteristics and circumstances relative to other utilities in
19 the proxy group. These factors include the company's relatively
20 smaller size, geographically diffuse customer base, and the scope of
21 the Company's planned infrastructure investments.⁵²

22 Finally, in Opinion Nos. 569 and 569-A, the Federal Energy Regulatory
23 Commission (FERC) adopted a size premium adjustment in its CAPM estimates
24 for electric utilities. In those decisions, the FERC noted that "the size adjustment

49 *Id.*, at 32 and 37.

50 Regulatory Commission of Alaska, Docket No. U-16-066, Order No. 19, September 22, 2017, at 50-52.

51 *Id.*

52 Minnesota Public Utilities Commission, Docket No. E017/GR-15-1033, Order, August 16, 2016, at 55.

1 was necessary to correct for the CAPM's inability to fully account for the impact of
2 firm size when determining the cost of equity."⁵³

3 Q. HOW HAVE YOU CONSIDERED THE SMALLER SIZE OF OTP IN YOUR
4 RECOMMENDATION OF THE COMPANY'S ROE IN THIS PROCEEDING?

5 A. While I have estimated the effect of the Company's small size on the cost of equity,
6 I am not proposing a specific adjustment for this risk factor. Rather, I believe it is
7 important to consider the small size of the Company's electric operations in North
8 Dakota in the determination of where, within the range of analytical results, the
9 Company's required cost of equity falls. All else equal, the additional risk
10 associated with the Company's small size supports an ROE toward the upper end
11 of the range of results from the cost of equity estimation models.

12 **B. Trading Volumes**

13 Q. WHAT IS TRADING VOLUME AND WHAT EFFECT DOES A COMPANY'S
14 TRADING VOLUME HAVE ON A LARGE INVESTOR'S ABILITY TO SELL A
15 STAKE IN THE COMPANY?

16 A. Trading volume in this case refers to the number of publicly traded shares of a
17 company. Institutional investors⁵⁴ often hold a large volume of shares in each
18 investment. A smaller company (such as OTTR) often has a lower number of shares
19 outstanding and fewer shares traded than larger firms. Institutional ownership of
20 stock in a smaller company may limit the investor's ability to sell its shares without
21 affecting the market price of the company, which presents a liquidity risk. Thus,

⁵³ *Ass'n. of Businesses Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 171 FERC ¶ 61,154 (2020), at ¶ 75. The U.S. Court of Appeals recently vacated FERC Order No. 569 decisions that related to its risk premium model and remanded the case to FERC to reopen the proceedings. However, in its decision, the Court did not reject FERC's inclusion of the size premium to estimate the CAPM. (*See*, United States Court of Appeals Case No. 16-1325, Decision No. 16-1325, August 9, 2022, at 20).

⁵⁴ Institutional ownership refers to the degree to which a company's common stock is held by large financial institutions, endowments, insurance companies, and mutual funds.

1 investors in companies with lower trading volume typically require a higher
2 expected return as compensation for the liquidity risk.⁵⁵

3 Q. HOW DO OTTER TAIL CORPORATION'S DAILY TRADING VOLUMES
4 COMPARE TO OTHER UTILITIES IN THE PROXY GROUP?

5 A. The daily trading volumes of OTTR are far below those of the proxy group, as
6 shown below in Figure 13. OTTR ranges between 7-10 percent that of total share
7 volumes traded for the proxy group, or between 53-78 percent by volume as a
8 proportion of outstanding shares, over a number of periods. Further, while OTTR
9 was added to the S&P SmallCap 600 Index on February 23, 2023 (announced on
10 February 16, 2023)⁵⁶, for the 30-day and 90-day averages (i.e., representative of
11 the time period after OTTR was added to the S&P SmallCap 600 Index), OTTR is
12 approximately 9 percent that of total share volumes traded for the proxy group, or
13 between 66-74 percent by volume as a proportion of outstanding shares. As a
14 result, despite the addition to the S&P SmallCap 600, OTTR's daily trading
15 volumes are still far below those of the proxy group.

⁵⁵ Liquidity risk is defined as a financial risk associated with the inability to trade a financial asset quickly enough in the market without adversely impacting the asset's market price. An illiquid asset is one held long term, such as a home, while a liquid asset is one that can be quickly traded without a significant value loss, such as marketable securities.

⁵⁶ S&P Global, "UFP Industries Set to Join S&P MidCap 400; Otter Tail to Join S&P SmallCap 600," February 16, 2023.

Figure 13: Trading Volume Analysis⁵⁷

Average Since	OTTR/Proxy Group	
	By Volume	By Volume As % of Shares Outs.
30-Day Avg.	9%	66%
90-day Avg.	9%	74%
180-day Avg.	9%	74%
2023 YTD	10%	78%
Jan 2022 - Present	9%	70%
Jan 2021 - Present	8%	62%
Jan 2020 - Present	7%	58%
Jan 2019 - Present	7%	53%

Q. WHAT IS YOUR CONCLUSION REGARDING THE TRADING VOLUME ANALYSIS?

A. OTTR has very low trading volume relative to the proxy group. As a result, the trading volume disparity between OTTR and the proxy group indicate illiquidity with regard to OTTR shares, underscoring a higher cost of equity for OTTR and its subsidiary OTP.

C. Institutional Ownership

Q. WHAT IS “INSTITUTIONAL OWNERSHIP” AND HOW DOES IT RELATE TO COMMON EQUITY?

A. Institutional ownership refers to the degree to which a company’s common stock is held by large financial institutions, endowments, insurance companies, and mutual funds. This differs from “retail ownership,” which refers to common stock ownership by individual investors. Institutional investors typically have more resources and access to in-depth research than do retail owners, and thus, often take larger positions in a company’s stock. Companies benefit from institutional

⁵⁷ Source: S&P Capital IQ Pro. See also Exhibit ____ (AEB-1), Schedule 10. Daily Average Volumes for OTTR excludes 2/17/2023 through 2/23/2023. The addition of OTTR to the S&P SmallCap 600 caused a brief significant increase trading volumes for OTTR between 2/17/2023 and 2/23/2023 that is not representative of the normal trading volume for OTTR.

investors as an important source of additional demand for a company's equity and as an efficient source of equity capital. Companies with lower levels of institutional ownership are at a disadvantage, lacking access to efficient capital.

Q. HOW DOES OTTR COMPARE TO THE PROXY GROUP IN TERMS OF INSTITUTIONAL OWNERSHIP?

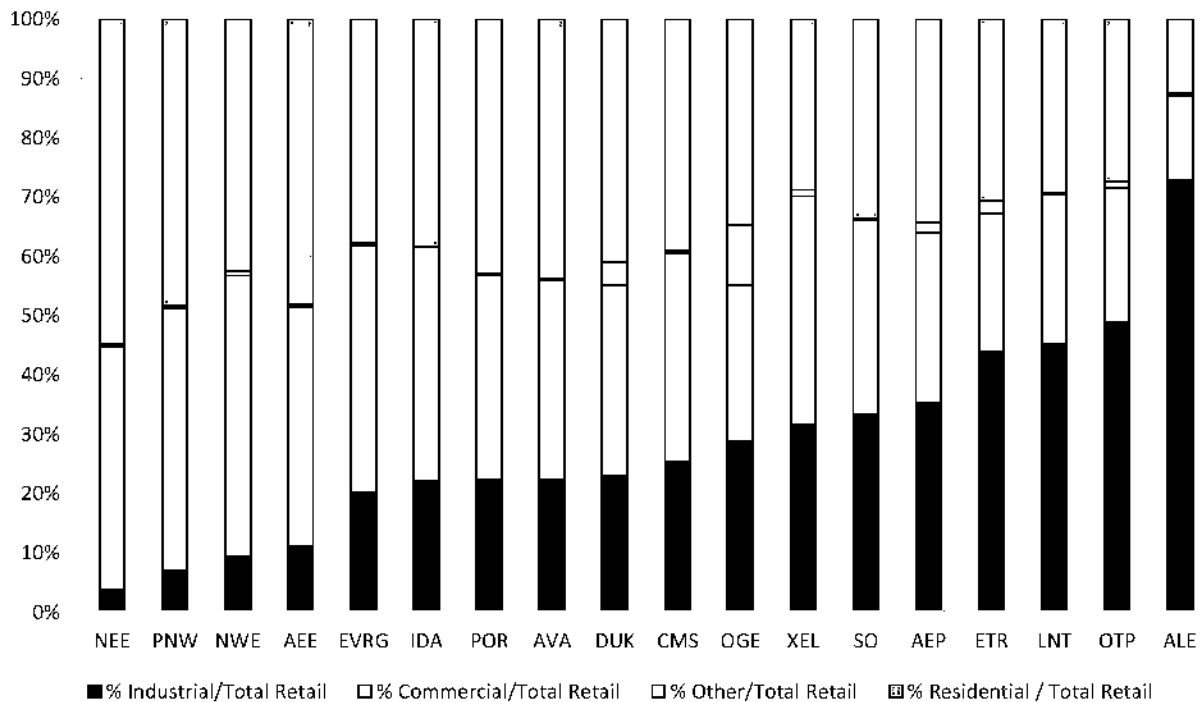
A. As shown on Exhibit____(AEB-1), Schedule 11, as of September 14, 2023, approximately 60.74 percent of OTTR's common equity stock is held by institutional investors, compared to 81.71 percent for the proxy group average. OTTR's institutional ownership is also lower than every company included in the proxy group.

D. Customer Concentration

Q. PLEASE SUMMARIZE OTP'S CUSTOMER CONCENTRATION RISK.

A. OTP serves approximately 59,000 customers in North Dakota, all in the eastern portion of the State. As shown below in Figure 14, 48.89 percent of OTP's electric sales were derived from industrial load. Based on 2022 data, OTP's combined industrial and commercial sales are the second highest of the companies in the proxy group.⁵⁸

⁵⁸ Does not include "other" commercial or residential customers.

Figure 14: Customer Concentration – 2022 Sales⁵⁹

Q. HOW DOES CUSTOMER CONCENTRATION AND THE COMPANY'S SERVICE TERRITORY AFFECT BUSINESS RISK?

A. An extremely high concentration of industrial and large commercial customers results in higher business risk. Since the customers are large, they can represent a significant portion of a company's sales, which could be lost if a customer goes out of business or otherwise stops taking service from the utility. As noted by Dhaliwal, Judd, Serfling and Shaikh in their article, *Customer Concentration Risk and the Cost of Equity Capital*, there can be significant risks related to a single customer representing a large portion of sales:

Depending on a major customer for a large portion of sales can be risky for a supplier for two primary reasons. First, a supplier faces the risk of losing substantial future sales if a major customer becomes financially distressed or declares bankruptcy, switches to a different supplier, or decides to develop products internally.

⁵⁹ Source: S&P Global Market Intelligence (FERC Form 1) and Otter Tail Power Company, 2023 Annual Report, North Dakota Public Service Commission Case No. PU-23-249, June 27, 2023 at 7. Other sales includes: Total Public Street and Highway Lighting, Other Sales to Public Authorities, Sales to Railroad and Railways, and Interdepartmental Sales.

Consistent with this notion, Hertz et al. (2008) and Kolay et al. (2015) document negative supplier abnormal stock returns to the announcement that a major customer declares bankruptcy. Further, a customer's weak financial condition or actions could signal inherent problems about the supplier's viability to its remaining customers and lead to compounding losses in sales. Second, a supplier faces the risk of losing anticipated cash flows from being unable to collect outstanding receivables if the customer goes bankrupt. This assertion is consistent with the finding that suppliers offering customers more trade credit experience larger negative abnormal stock returns around the announcement of a customer filing for Chapter 11 bankruptcy (Jorion and Zhang, 2009; Kolay et al., 2015).⁶⁰

Therefore, a company that has a high degree of customer concentration will be inherently riskier than a company that derived income from a larger customer base. Furthermore, as Dhaliwal, Judd, Serfling and Shaik detail in the article, the increased risk associated with a more concentrated customer base will have the effect of increasing a company's cost of equity.⁶¹

Q. DO YOU EXPECT OTP'S CUSTOMER CONCENTRATION TO INCREASE?

A. Yes. The portion of OTP's sales derived from industrial and large commercial customers is likely to exceed 2022 levels. As explained by Company witness Ms. Amber M. Stalboerger, OTP began serving a large data processing customer in 2022, with the customer only operating at full capacity starting in late August of 2022. In fact, OTP is projecting to derive approximately 56 percent of total sales from industrial and large commercial customers for the 2024 Test Year, with the data processing customer accounting for approximately **[PROTECTED DATA BEGINS... ... PROTECTED DATA ENDS]** percent of total 2024 Test Year sales.

⁶⁰ Dhaliwal, Dan S., J. Scott Judd, Matthew A. Serfling, and Sarah Shaikh. "Customer Concentration Risk and the Cost of Equity Capital." SSRN Electronic Journal (2016): 1-2. Web.

⁶¹ *Id.*, at 4.

1 Q. WHAT ASPECTS OF CUSTOMER CONCENTRATION SHOULD BE
2 CONSIDERED IN THE ASSESSMENT OF OTP'S BUSINESS RISK RELATIVE
3 TO THE COMPANIES IN THE PROXY GROUP?

4 A. There are two: (1) a disproportionately large, single customer; and (2) industry
5 concentration.

6 Q. DOES OTP RELY ON A SINGLE LARGE CUSTOMER FOR A SIGNIFICANT
7 PORTION OF SALES IN NORTH DAKOTA?

8 Yes. OTP is unique in that unlike most electric and natural gas utilities, the
9 Company is dependent on a single customer for a large portion of its electric sales
10 in North Dakota. And that customer has some unique attributes. For example, its
11 operations are highly energy intensive - electricity comprises approximately 5
12 percent of a typical large customer's variable costs; for the data processing
13 customer electricity comprises more than 15 times that proportion of variable
14 costs.⁶² The customer therefore is very sensitive to changes in power costs. Given
15 the relatively low capital investment associated with its business the customer
16 could move to another location where power costs are lower or could install onsite
17 generation. In fact, in its 2022 Form 10-K, the customer noted vertically integrated
18 power assets were a part of its growth strategy.⁶³

19 The customer also provides services to customers in the cryptomining
20 business,⁶⁴ a relatively new and extremely volatile industry.⁶⁵ The customer has
21 identified its significant concentration of cryptomining customers as a risk factor
22 to its business.⁶⁶ These two factors ((1) the customer's extremely high energy

⁶² NDPSC Case No. 21-366, Application of Otter Tail Power Company for Confirmation of Compliance with and Approval of Electric Service Request under Otter Tail Power Company Rate Schedule 10.06 at 1 (Aug. 9, 2021).

⁶³ Applied Digital Corporation, 2022 Form 10-K, at 7.

⁶⁴ Applied Digital Corporation, 2022 Form 10-K, at 5.

⁶⁵ Powell, Tyler. "Utility Companies Face Credit Risk from Bankruptcies of Crypto Miners", February 24, 2023.

⁶⁶ Applied Digital Corporation, 2022 Form 10-K, at 13.

dependence and sensitivity to energy prices; and (2) underlying volatility to the economic prospects of its customers) increase the risk OTP could see a sudden and significant decrease in load.

Q. ARE OTP'S REMAINING COMMERCIAL AND INDUSTRIAL CUSTOMERS CONCENTRATED IN CERTAIN INDUSTRIES?

A. Yes. A large portion of OTP's electric sales were to industrial customers that operate in the agricultural industry. Moreover, since the economy within and around OTP's service territories are reliant on the agricultural industry, OTP's commercial and residential customers also rely on the industry for sales and employment. For example, agricultural production in North Dakota accounts for 24.2 percent of the state GDP and 20.6 percent of state labor income, a majority of which is concentrated in crop production, processing, and handling.⁶⁷ Therefore, fluctuations in the business cycle, commodity prices, and ongoing trade disputes between the U.S. and China could adversely impact economic conditions in OTP's service territory. This could result in a reduction in sales to industrial customers. Further, if agricultural customers reduce output due to weak economic conditions, the effect would be compounded by a decline in local employment, which would also reduce electric sales to OTP's residential and commercial customers.

Q. HOW WOULD OTP'S PROPOSED SALES RIDER AFFECT THE COMPANY'S CUSTOMER CONCENTRATION RISK?

A. As explained by Company witness Ms. Amber M. Stalboerger, OTP's proposed sales rider would mitigate the risk associated with volatility in industrial and large commercial customer sales by either recovering or crediting the difference between the revenue requirement approved in this proceeding for the 2024 test year (i.e.,

⁶⁷ North Dakota Agriculture Industry, Economic Contribution Analysis, *NDSU Agribusiness and Applied Economics Report No. 816-S*, December 2022.

2024 Sales Rider Baseline Jurisdictional Cost of Service Study (JCOSS))⁶⁸ and the actual revenue requirement for each subsequent year (*i.e.*, Comparison JCOSS). The Comparison JCOSS would be developed by adjusting the 2024 Sales Rider Baseline JCOSS to reflect changes in actual sales, jurisdictional allocation factors, and base revenue from the calendar year. Variances would then be either credited or collected from customers in the subsequent year. In essence, the sales rider would allow the Company to account for the level of base revenues approved by the Commission in this proceeding by recovering(crediting) all variances under(over) that level from(to) customers.

Q. HOW WOULD THE PROPOSED SALES RIDER ADDRESS THE COMPANY'S CUSTOMER CONCENTRATION RISK AS COMPARED TO THE PROXY GROUP?

A. OTP's proposed sales rider would reduce the impact of customer concentration risk of the Company by recovering(crediting) variances between 2024 test year revenue and actual revenue from(to) customers. As shown in Exhibit____(AEB-1), Schedule 13 and discussed in more detail below, approximately 60 percent of the operating companies held by the proxy group have some form of non-volumetric rate design through either revenue decoupling, formula rates or straight fixed-variable rate design which mitigate the customer concentration and electric sales variability risk. Since the proxy group companies have already implemented similar risk mitigation measures for loads that are typically less concentrated than OTP's, OTP would not have less risk than the benchmark group if the Company's proposed sales rider was approved. Conversely, to the extent that OTP is not granted its proposed sales rider in this rate case, the Company's risk would be substantially elevated, relative to the proxy group.

⁶⁸ The 2024 Sales Rider Baseline JCOSS excludes 2024 tear year riders costs and revenues.

1 Q. WHAT IS YOUR CONCLUSION REGARDING OTP'S CUSTOMER
2 CONCENTRATION RISK AND ITS EFFECT ON THE COST OF EQUITY?

3 A. OTP is heavily reliant on sales to industrial and large commercial customers. As
4 noted above, in 2022, 48.89 percent of OTP's electric sales by volume were to
5 industrial customers. This concentration is higher than all of the proxy group
6 companies, except one, and expected to increase in 2024. In addition, a large share
7 of OTP's electric retail sales are to one customer. A high degree of customer
8 concentration increases OTP's risk related to competition from alternative energy
9 sources and economic conditions. Increased customer diversity decreases the
10 effect that any one customer can have on a company's sales. Therefore, the risk of
11 eroding revenue resulting from customer concentration is higher for OTP than the
12 proxy group companies on average.

13 OTP has proposed a sales rider to mitigate the risk posed by customer
14 concentration. When considering the relative risk of the Company and the proxy
15 group, it is important to recognize that most of the companies in the proxy group
16 have some form of a mechanism to mitigate electric sales risk. Therefore, adopting
17 a sales rider will result in volumetric risk for the Company that is similar to the
18 volumetric risk faced by the proxy group companies.

19 Absent the implementation of the sales rider, OTP has significant risk
20 related to its high concentration of sales in a small number of customers, which is
21 greater than the risk faced by the proxy group companies on average, the majority
22 of which have some form of non-volumetric rate design. If the Company's
23 proposed sales rider were not approved, then the Company is at much higher
24 overall risk than the proxy group companies, and I would recommend that the
25 authorized ROE for OTP be placed at the very high-end of my recommended ROE
26 range.

E. Capital Expenditures

Q. PLEASE SUMMARIZE THE COMPANY'S CAPITAL EXPENDITURE REQUIREMENTS.

A. As of December 31, 2022, OTP had net utility plant in Minnesota, North Dakota and South Dakota of approximately \$2.098 billion, and the Company currently projects capital expenditures for 2024 through 2027 of approximately \$888 million.⁶⁹ Therefore, the Company's projected capital expenditures represent approximately 42.33 percent of its net utility plant as of December 31, 2022.

Q. HOW IS THE COMPANY'S RISK PROFILE AFFECTED BY ITS SUBSTANTIAL CAPITAL EXPENDITURE REQUIREMENTS?

A. As with any utility faced with substantial capital expenditure requirements, the Company's risk profile may be adversely affected in two significant and related ways: (1) the heightened level of investment increases the risk of under-recovery or delayed recovery of the invested capital; and (2) an inadequate return would put downward pressure on key credit metrics.

Q. DO CREDIT RATING AGENCIES RECOGNIZE THE RISKS ASSOCIATED WITH ELEVATED LEVELS OF CAPITAL EXPENDITURES?

A. Yes, they do. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and, therefore, credit ratings. To that point, S&P explains the importance of regulatory support for large capital projects:

When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were

⁶⁹ Otter Tail Corporation Second Quarter Earnings Conference Call Presentation at 36 (Aug. 1, 2023).

1 extraordinary measures for use in unusual circumstances, but when
2 construction costs are rising, cash flow support could be crucial to
3 maintain credit quality through the spending program. Even more
4 favorable are those jurisdictions that present an opportunity for a
5 higher return on capital projects as an incentive to investors.⁷⁰

6 Therefore, to the extent that OTP's rates do not permit the opportunity to recover
7 its full cost of doing business, OTP will face increased recovery risk and thus
8 increased pressure on its credit metrics.

9 Q. HOW DO OTP'S CAPITAL EXPENDITURE REQUIREMENTS COMPARE TO
10 THOSE OF THE PROXY GROUP COMPANIES?

11 A. As shown in Exhibit___(AEB-1), Schedule 12, I calculated the ratio of expected
12 capital expenditures to net utility plant for OTP and each of the companies in the
13 proxy group by dividing each company's projected capital expenditures for the
14 period from 2024-2027 by its total net utility plant as of December 31, 2022. As
15 shown therein OTP's ratio of capital expenditures as a percentage of net utility
16 plant is in line with the median for the proxy group.

17 Q. DOES OTP HAVE THE ABILITY TO RECOVER CERTAIN CAPITAL
18 EXPENDITURES BETWEEN RATE CASES?

19 A. Yes. OTP has an opportunity to recover certain capital expenditures through its
20 Generation Cost Recovery Rider (GCR), Transmission Cost Recovery Rider (TCR),
21 Advanced Meter Distribution Technology Cost Recovery Rider (AMDT),
22 Renewable Resource Rider (RRR), and Environmental Cost Recovery Rider (ECR).
23 These tracking mechanisms allow for recovery of certain costs in between rate
24 cases for costs related to new generation facilities, new transmission facilities,
25 advanced metering and outage management infrastructure, investment in new
26 renewable energy projects, and investment in environmental improvement
27 projects.

⁷⁰ S&P Global Ratings, "Assessing U.S. Investor-Owned Utility Regulatory Environments," August 10, 2016, at 7.

1 Q. DOES THE AVAILABILITY OF THESE RIDERS JUSTIFY ADJUSTING THE
2 ROE AUTHORIZED IN THIS CASE?

3 A. No. The cost of equity analysis is conducted using market data for a proxy group of
4 comparable companies and necessarily considers the relative risk of the subject
5 company and the proxy group in the final determination of the ROE. Accordingly,
6 although OTP's use of the capital tracking mechanisms may reduce its own risk,
7 the appropriate point of comparison is whether those tracking mechanisms are
8 reducing risk relative to the proxy group, which I discuss below.

9 Q. HOW DOES THE EXISTENCE OF THESE TRACKERS COMPARE WITH THE
10 CAPITAL INVESTMENT AND OTHER TRACKERS THAT HAVE BEEN
11 IMPLEMENTED BY THE PROXY COMPANIES?

12 A. As shown in Exhibit____(AEB-1), Schedule 13, 56 out of 83 (or approximately 67
13 percent) of the operating companies held by the proxy group recover costs through
14 capital tracking mechanisms. So, while OTP's capital tracking mechanisms are a
15 positive aspect of North Dakota regulation, as shown in Exhibit____(AEB-1),
16 Schedule 13, such clauses have become commonplace in utility regulation. As a
17 result, OTP's capital tracking mechanisms do not reduce the Company's risk vis-à-
18 vis that of the proxy group.

19 Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECT OF OTP'S
20 CAPITAL SPENDING REQUIREMENTS ON ITS RISK PROFILE AND COST OF
21 CAPITAL?

22 A. The Company's capital expenditure requirements as a percentage of net utility
23 plant are significant and will continue over the next few years. Additionally,
24 similar to a number of the operating subsidiaries of the proxy group, OTP can
25 recover some portion of the Company's projected capital expenditures through
26 capital tracking mechanisms. Therefore, I conclude that, the Company's risk
27 profile regarding capital expenditures is consistent with that of the proxy group.

F. Regulatory Risk

Q. PLEASE EXPLAIN HOW THE REGULATORY ENVIRONMENT AFFECTS INVESTORS' RISK ASSESSMENTS.

A. The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have a reasonable opportunity to recover the return of, and the market-required return on, invested capital. Regulatory authorities recognize that because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms, and doing so balances the long-term interests of investors and customers. To achieve this balance, the Company must be able to finance its operations assuming a reasonable opportunity to earn an appropriate return on invested capital to maintain an acceptable financial profile. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' risk assessments.

From the perspective of debt investors, the authorized return should enable the utility to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its systems, and maintain the necessary levels of liquidity to fund unexpected events. This financial liquidity must be derived not only from internally-generated funds, but also by efficient access to capital markets. Moreover, because fixed income investors have many investment alternatives, even within a given market sector, the utility's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

In addition, equity investors require that the authorized return be adequate to provide a risk-comparable return on the equity portion of the utility's capital

1 investments. Because equity investors are the residual claimants on the utility's
2 cash flows (which is to say that the equity return is subordinate to interest
3 payments), they are particularly concerned with the strength of regulatory support
4 and its effect on future cash flows.

5 Q. HOW DO CREDIT RATING AGENCIES CONSIDER REGULATORY RISK IN
6 ESTABLISHING A COMPANY'S CREDIT RATING?

7 A. Both S&P and Moody's consider the overall regulatory framework in establishing
8 credit ratings. Moody's establishes credit ratings based on four key factors: (1)
9 regulatory framework; (2) the ability to recover costs and earn returns; (3)
10 diversification; and (4) financial strength, liquidity, and key financial metrics. Of
11 these criteria, regulatory framework and the ability to recover costs and earn
12 returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's
13 assigns regulatory risk a 50.00 percent weighting in the overall assessment of
14 business and financial risk for regulated utilities.⁷¹

15 S&P also identifies the regulatory framework as an important factor in
16 credit ratings for regulated utilities, stating: "One significant aspect of regulatory
17 risk that influences credit quality is the regulatory environment in the jurisdictions
18 in which a utility operates."⁷² S&P identifies four specific factors that it uses to
19 assess the credit implications of the regulatory jurisdictions of investor-owned
20 regulated utilities: (1) regulatory stability; (2) tariff-setting procedures and
21 design; (3) financial stability; and (4) regulatory independence and insulation.⁷³

⁷¹ Moody's Investors Service. Rating Methodology: Regulated Electric and Gas Utilities. June 23, 2017, at 4.

⁷² Standard & Poor's Global Ratings. Ratings Direct. "Assessing U.S. Investor-Owned Utility Regulatory Environments." August 10, 2016, at 2.

⁷³ *Id.*

1 Q. HOW DOES THE REGULATORY ENVIRONMENT IN WHICH A UTILITY
2 OPERATES AFFECT ITS ACCESS TO AND COST OF CAPITAL?

3 A. The regulatory environment can significantly affect both the access to, and cost of,
4 capital in several ways. First, the proportion and cost of debt capital available to
5 utility companies are influenced by the rating agencies' assessment of the
6 regulatory environment. As noted by Moody's, "[f]or rate regulated utilities, which
7 typically operate as a monopoly, the regulatory environment and how the utility
8 adapts to that environment are the most important credit considerations."⁷⁴
9 Moody's has further highlighted the relevance of a stable and predictable
10 regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the
11 Regulatory Framework is the foundation for how all the decisions that affect
12 utilities are made (including the setting of rates), as well as the predictability and
13 consistency of decision-making provided by that foundation."⁷⁵

14 Q. HAVE YOU CONDUCTED ANY ANALYSIS OF THE REGULATORY
15 FRAMEWORK IN NORTH DAKOTA RELATIVE TO THE JURISDICTIONS IN
16 WHICH THE COMPANIES IN YOUR PROXY GROUP OPERATE?

17 A. Yes. I have evaluated the regulatory framework in North Dakota on three factors
18 that are important in terms of providing a regulated utility a reasonable
19 opportunity to earn its authorized ROE. These are: (1) test year convention (*i.e.*,
20 forecast vs. historical); (2) use of revenue decoupling mechanisms or other clauses
21 that provide revenue stabilization; and (3) the prevalence of capital cost recovery
22 between rate cases. The results of this regulatory risk assessment are shown in
23 Exhibit___(AEB-1), Schedule 13 and are summarized below.

24 Test Year Convention: OTP is proposing a forecasted test year. As shown in
25 Exhibit___(AEB-1), Schedule 13, approximately 45 percent of the utility

⁷⁴ Moody's Investors Service. Rating Methodology: Regulated Electric and Gas Utilities. June 23, 2017, at 6.

⁷⁵ *Id.*

operating subsidiaries of the companies in the proxy group also have partially or fully forecast test years.

Volumetric Risk: OTP does not currently have protection against volumetric risk through a revenue decoupling mechanism, formula-based rate, or a straight fixed-variable rate design. Although the Company is requesting a sales rider in this proceeding to mitigate the effect of volumetric risk, approximately 60 percent of the utility operating subsidiaries of the proxy group companies have some form of non-volumetric rate design that allow them to break the link between customer usage and revenues.

Capital Cost Recovery: OTP does have the opportunity to recover certain capital expenditures through capital tracking mechanisms. Similarly, approximately 67 percent of the utility operating subsidiaries of the proxy group companies have some form of capital cost recovery mechanism in place.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE PERCEIVED RISKS RELATED TO THE NORTH DAKOTA REGULATORY ENVIRONMENT?

A. As discussed throughout this section of my testimony, both Moody's and S&P have identified the supportiveness of the regulatory environment as an important consideration in developing their overall credit ratings for regulated utilities. Considering the regulatory adjustment mechanisms, similar to OTP, many of the companies in the proxy group have timely cost recovery through forecasted test years, cost recovery trackers and revenue stabilization mechanisms. As a result, I conclude, that if the Company's proposed sales rider were approved, OTP's regulatory risk would be similar to that of the proxy group.

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

not approved, then the authorized ROE for OTP should be placed at the very high-end of my recommended ROE range.

G. Flotation Costs

Q. WHAT ARE FLOTATION COSTS?

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

Q. WHY IS IT IMPORTANT TO CONSIDER FLOTATION COSTS IN THE ALLOWED ROE?

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

Q. ARE FLOTATION COSTS PART OF THE UTILITY'S INVESTED COSTS OR PART OF THE UTILITY'S EXPENSES?

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

costs may deny the Company the opportunity to earn its required rate of return in the future.

Q. PLEASE PROVIDE AN EXAMPLE OF WHY A FLOTATION COST ADJUSTMENT IS NECESSARY TO COMPENSATE INVESTORS FOR THE CAPITAL THEY HAVE INVESTED.

A. Suppose OTTR, the parent company of OTP, issues stock with a value of \$100, and an equity investor invests \$100 in OTTR in exchange for that stock. Further, suppose that, after paying flotation costs associated with the equity issuance, which include fees paid to underwriters and attorneys, among others, OTTR ends up with only \$97 of net issuance proceeds rather than the \$100 the investor contributed. OTTR invests that \$97 in plant used to serve its customers, which becomes part of rate base. Absent a flotation cost adjustment, the investor will thereafter earn a return on only the \$97 invested in rate base, even though she contributed \$100. Making a small flotation cost adjustment gives the investor a reasonable opportunity to earn the authorized return, rather than the lower return that results when the authorized return is applied to an amount less than what the investor contributed.

Q. IS THE DATE OF OTTR'S LAST ISSUANCE OF COMMON EQUITY IMPORTANT IN THE DETERMINATION OF FLOTATION COSTS?

A. No. As shown in Exhibit____(AEB-1), Schedule 14, OTTR has closed on several equity issuances over the past several years, including an approximately \$36 million at-the-market (ATM) issuance in 2020.⁷⁶ However, it is important to recognize flotation costs for all equity issuances since these costs reduce the permanent capital structure of the company. Therefore, the vintage of the issuance is not particularly important because an investor should have a reasonable opportunity to earn a return on the full amount of capital that she has contributed

⁷⁶ Issuance information provided by OTP.

1 in every year of the investment. As noted in my earlier example, the investor
2 contributed \$100, but due to flotation costs, OTTR only ends up with \$97 to invest
3 in rate base. Without the recognition of flotation costs, the investor will only earn
4 a return on the \$97 invested in rate base in year 1 as well as every subsequent year
5 of the investment. Therefore, adjusting the ROE in year 1 to recognize flotation
6 costs will only award the opportunity for the investor earn a return on her full
7 investment in year 1 and then in year 2 and after the investor will still only earn a
8 return on the \$97 invested in rate base. As a result, the ROE should be adjusted
9 for flotation costs in every year regardless of the vintage of the issuance because as
10 long as the \$100 is invested, the investor should have a reasonable opportunity to
11 earn a return on the entire amount.

12 Q. IS THE NEED TO CONSIDER FLOTATION COSTS ELIMINATED BECAUSE
13 OTP IS A WHOLLY OWNED SUBSIDIARY OF OTTR?

14 A. No, it is not. Although OTP is a wholly owned subsidiary of OTTR, it is appropriate
15 to consider flotation costs. A wholly owned subsidiary receives equity capital from
16 its parent and provides returns on the capital that rolls up to the parent, which is
17 designated to attract and raise capital based upon the returns of its subsidiary, or
18 subsidiaries. To deny recovery of issuance costs associated with the capital that is
19 invested in the subsidiaries ultimately penalizes the investors that fund utility
20 operations and inhibits the utility's ability to obtain new equity capital at a
21 reasonable cost. This is particularly important for OTP because, as I previously
22 discuss, it is planning significant capital expenditures over the next several years.

23 Q. IS THE NEED TO CONSIDER FLOTATION COSTS RECOGNIZED BY THE
24 ACADEMIC AND FINANCIAL COMMUNITIES?

25 A. Yes, it is. The need to reimburse shareholders for the lost returns associated with
26 equity issuance costs is recognized by the academic and financial communities in
27 the same spirit that investors are reimbursed for the costs of issuing debt. This

1 treatment is consistent with the philosophy of a fair rate of return. According to
2 Dr. Shannon Pratt:

3 Flotation costs occur when new issues of stock or debt are sold to the
4 public. The firm usually incurs several kinds of flotation or
5 transaction costs, which reduce the actual proceeds received by the
6 firm. Some of these are direct out-of-pocket outlays, such as fees
7 paid to underwriters, legal expenses, and prospectus preparation
8 costs. Because of this reduction in proceeds, the firm's required
9 returns on these proceeds equate to a higher return to compensate
10 for the additional costs. Flotation costs can be accounted for either
11 by amortizing the cost, thus reducing the cash flow to discount, or by
12 incorporating the cost into the cost of capital. Because flotation costs
13 are not typically applied to operating cash flow, one must incorporate
14 them into the cost of capital.⁷⁷

15 Further, Dr. Myron Gordon recognized that the DCF model did not include the cost
16 of floating a new stock issue and proposed a means for regulators to recognize these
17 costs in his text on the subject.⁷⁸

18 Q. WHAT IS THE EFFECT OF FLOTATION COSTS ON OTP'S COST OF EQUITY?

19 A. My flotation cost calculation is based on the costs of issuing equity that were
20 incurred by OTTR in each of the company's common equity issuances since
21 2004. As shown in Exhibit____(AEB-1), Schedule 14, based on the flotation costs
22 of previous issuances, the impact on the proxy group's cost of equity amounts to
23 14 basis points (*i.e.*, 0.14 percent) based on the median and 14 basis points (*i.e.*,
24 0.14 percent) based on the mean.

25 Q. DO YOUR FINAL COST OF EQUITY MODEL RESULTS INCLUDE AN
26 ADJUSTMENT FOR FLOTATION COST RECOVERY?

27 A. No, I did not make an explicit adjustment for flotation costs to any of the
28 quantitative results of my cost of equity models. Rather, I considered the
29 incremental cost associated with stock issuance as part of my overall

77 Pratt, Shannon P. Cost of Capital Estimation and Applications. Second Edition, at 220-21.

78 Gordon, Myron, "The Cost of Capital to a Public Utility", 1974, pp. 164-166.

1 recommendations regarding the range of reasonable ROEs and ultimate
2 recommended ROE.

3 **IX. CAPITAL STRUCTURE**

4 Q. IS THE CAPITAL STRUCTURE OF THE COMPANY AN IMPORTANT
5 CONSIDERATION IN THE DETERMINATION OF THE APPROPRIATE ROE?

6 A. Yes. The equity ratio is the primary indicator of financial risk for a regulated utility
7 such as OTP. All else equal, a higher debt ratio increases the risk to equity
8 investors. For debt holders, higher debt ratios result in a greater portion of the
9 available cash flow being required to meet debt service, thereby increasing the risk
10 associated with the payments on debt. The result of increased risk is a higher
11 interest rate. The incremental risk of a higher debt ratio is more significant for
12 common equity shareholders, whose claim on the cash flow of the Company is
13 secondary to the claim of debt holders. Therefore, the greater the debt service
14 requirement, the less cash flow available for common equity holders. To the extent
15 the equity ratio is reduced, it is necessary to increase the authorized ROE to
16 compensate investors for the greater financial risk associated with a lower equity
17 ratio.

18 Q. WHAT IS OTP'S PROPOSED CAPITAL STRUCTURE?

19 A. The Company is proposing to establish a capital structure consisting of 53.50
20 percent common equity, 43.55 percent long-term debt, and 2.95 percent short-
21 term debt.

22 Q. DID YOU CONDUCT ANY ANALYSIS TO DETERMINE IF THIS REQUESTED
23 EQUITY RATIO WAS REASONABLE?

24 A. Yes. I compared the Company's proposed capital structure relative to the actual
25 capital structures of the utility operating subsidiaries of the companies in the proxy
26 group. Since the ROE is set based on the return that is derived from the risk-

comparable proxy group, it is reasonable to look to the average capital structure for the proxy group to benchmark the equity ratios for the Company.

Q. PLEASE DISCUSS YOUR ANALYSIS OF THE CAPITAL STRUCTURES OF THE PROXY GROUP COMPANIES.

A. I calculated the average proportion of common equity, long-term debt, preferred equity and short-term debt for the most recent eight quarters for each of the companies in the proxy group at the operating subsidiary level. As shown on Exhibit____(AEB-1), Schedule 15, the average common equity ratio for the operating subsidiaries of the proxy group companies was 52.06 percent (within a range from 45.30 percent to 60.41 percent). Given that OTP's proposed equity ratio of 53.50 percent is well within the range of equity ratios for the utility operating subsidiaries of the proxy group companies, I consider its proposed equity ratio to be reasonable.

Q. ARE THERE OTHER FACTORS TO BE CONSIDERED IN SETTING THE COMPANY'S CAPITAL STRUCTURE?

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

For example, while Moody's recently revised its outlook for the utility sector from "negative" to "stable", Moody's continues to note that high interest rates and increased capital spending will place pressure on credit metrics. Thus, Moody's highlights constructive regulatory outcomes that promote timely cost recovery as a key factor in supporting utility credit quality.⁷⁹

Fitch Ratings (Fitch) also highlights similar factors identified by Moody's as challenging utilities' outlook for 2023, stating that the sector faces mounting cost

⁷⁹ Moody's Investors Service, Outlook. "Outlook turns stable on low prices and credit-supportive regulation." September 7, 2023.

1 pressures due to “elevated commodity prices, inflationary headwinds and rising
2 interest costs,” and that some counterbalances/offsets against these headwinds
3 include “higher authorized ROEs and the use of tools such as securitization of
4 under-recovered fuel balances.”⁸⁰

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

9 Despite the improvement in economic data, we expect inflation,
10 rising interest rates, higher capital spending, and the strategic
11 decision by many companies to operate with only minimal financial
12 cushion from their downgrade thresholds to continue to pressure the
13 industry's credit quality. Throughout 2022 and so far in 2023, the
14 Federal Reserve has consistently raised interest rates to reduce the
15 pace of inflation. While these actions appear to have had a positive
16 effect on slowing inflation, there's still been a modest weakening in
17 the industry's financial measures because of inflation and rising
18 interest rates. An environment of continuously rising costs tends to
19 weaken the industry's financial measures because of the timing
20 difference between when the higher costs are incurred and when they
21 are ultimately recovered from ratepayers.⁸¹

22 The credit ratings agencies' continued concerns over the negative effects of
23 inflation, higher interest rates, and increased capital expenditures underscore the
24 importance of maintaining adequate cash flow metrics for the industry as a whole,
25 and OTP in particular in the context of this proceeding.

26 Q. WHAT IS YOUR CONCLUSION REGARDING AN APPROPRIATE EQUITY
27 RATIO FOR OTP?

28 A. Considering the actual capital structures of the utility operating subsidiaries of the
29 proxy group, I believe that the Company's proposed common equity ratio of 53.50
30 percent is reasonable. The proposed equity ratio is well within the range of equity

⁸⁰ Fitch Ratings. “North American Utilities, Power & Gas Outlook 2023.” December 7, 2022, at 1-2.

⁸¹ S&P Global Ratings. “The Outlook for North American Regulated Utilities Turns Stable,” May 18, 2023, at 8.

ratios established by the capital structures of the utility operating subsidiaries of the proxy companies.

X. CONCLUSION AND RECOMMENDATION

Q. WHAT IS YOUR CONCLUSION REGARDING A FAIR ROE FOR OTP?

A. Figure 15 summarizes the results of my cost of equity analyses. Based on the quantitative and qualitative analyses presented in my direct testimony, and the business and financial risks of the Company as compared to the proxy group, an ROE of 10.60 percent reasonable.

Figure 15: Summary of Analytical Results

Constant Growth DCF			
	Mean Low	Mean	Mean High
30-Day Average	8.75%	9.86%	10.72%
90-Day Average	8.69%	9.80%	10.66%
180-Day Average	8.69%	9.80%	10.66%
Constant Growth Average	8.71%	9.82%	10.68%
	Median Low	Median	Median High
30-Day Average	9.11%	9.76%	10.65%
90-Day Average	9.01%	9.66%	10.80%
180-Day Average	9.01%	9.71%	10.81%
Constant Growth Average	9.04%	9.71%	10.76%
CAPM			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.66%	11.65%	11.64%
Bloomberg Beta	10.90%	10.89%	10.87%
Long-term Avg. Beta	10.49%	10.49%	10.46%
ECAPM			
Value Line Beta	11.92%	11.92%	11.91%
Bloomberg Beta	11.35%	11.35%	11.33%
Long-term Avg. Beta	11.05%	11.04%	11.03%
Risk Premium			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Risk Premium Results	10.32%	10.31%	10.27%

Q. WHAT IS YOUR CONCLUSION WITH RESPECT TO OTP'S PROPOSED CAPITAL STRUCTURE?

A. My conclusion is that the Company's proposal to establish a capital structure consisting of 53.50 percent common equity, 43.55 percent long-term debt, and 2.95 percent short-term debt is reasonable when compared to actual capital structures of the proxy group companies. Further, taking into consideration the impact of current and projected market conditions on the cash flows of utilities as

1 raised by the credit rating agencies, I conclude that the Company's proposal is
2 reasonable and should be adopted for ratemaking purposes.

3 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

4 A. Yes, it does.

Ann E. Bulkley

PRINCIPAL

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With more than 25 years of experience in the energy industry, Ms. Bulkley specializes in regulatory economics for the electric and natural gas and water utility sectors, including valuation of regulated and unregulated utility assets, cost of capital, and capital structure issues.

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

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

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

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

AREAS OF EXPERTISE

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

EDUCATION

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

PROFESSIONAL EXPERIENCE

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

SELECTED CONSULTING EXPERIENCE & EXPERT TESTIMONY

REGULATORY ANALYSIS AND RATEMAKING

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

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

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

COST OF CAPITAL

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

RATEMAKING

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

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

VALUATION

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

Representative projects/clients have included:

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

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

STRATEGIC AND FINANCIAL ADVISORY SERVICES

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

Representative projects include:

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

BULKLEY TESTIMONY LISTING

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arizona Corporation Commission				
UNS Electric	11/22	UNS Electric	Docket No. E-04204A-15-0251	Return on Equity
Tucson Electric Power Company	6/22	Tucson Electric Power Company	Docket No. G-01933A-22-0107	Return on Equity
Southwest Gas Corporation	12/21	Southwest Gas Corporation	Docket No. G-01551A-21-0368	Return on Equity
Arizona Public Service Company	10/19	Arizona Public Service Company	Docket No. E-01345A-19-0236	Return on Equity
Tucson Electric Power Company	04/19	Tucson Electric Power Company	Docket No. E-01933A-19-0028	Return on Equity
Tucson Electric Power Company	11/15	Tucson Electric Power Company	Docket No. E-01933A-15-0322	Return on Equity
UNS Electric	05/15	UNS Electric	Docket No. E-04204A-15-0142	Return on Equity
UNS Electric	12/12	UNS Electric	Docket No. E-04204A-12-0504	Return on Equity
Arkansas Public Service Commission				
Oklahoma Gas and Electric Co	10/21	Oklahoma Gas and Electric Co	Docket No. D-18-046-FR	Return on Equity
Arkansas Oklahoma Gas Corporation	10/13	Arkansas Oklahoma Gas Corporation	Docket No. 13-078-U	Return on Equity
California Public Utilities Commission				
PacifiCorp, d/b/a Pacific Power	5/22	PacifiCorp, d/b/a Pacific Power	Docket No. A-22-05-006	Return on Equity
San Jose Water Company	05/21	San Jose Water Company	A2105004	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Colorado Public Utilities Commission				
Public Service Company of Colorado	11/22	Public Service Company of Colorado	Docket No. 22AL-0530E	Return on Equity
Public Service Company of Colorado	01/22	Public Service Company of Colorado	Docket No. 22AL-0046G	Return on Equity
Public Service Company of Colorado	07/21	Public Service Company of Colorado	21AL-0317E	Return on Equity
Public Service Company of Colorado	02/20	Public Service Company of Colorado	20AL-0049G	Return on Equity
Public Service Company of Colorado	05/19	Public Service Company of Colorado	19AL-0268E	Return on Equity
Public Service Company of Colorado	01/19	Public Service Company of Colorado	19AL-0063ST	Return on Equity
Atmos Energy Corporation	05/15	Atmos Energy Corporation	Docket No. 15AL-0299G	Return on Equity
Atmos Energy Corporation	04/14	Atmos Energy Corporation	Docket No. 14AL-0300G	Return on Equity
Atmos Energy Corporation	05/13	Atmos Energy Corporation	Docket No. 13AL-0496G	Return on Equity
Connecticut Public Utilities Regulatory Authority				
United Illuminating	09/22	United Illuminating	Docket No. 22-08-08	Return on Equity
United Illuminating	05/21	United Illuminating	Docket No. 17-12-03RE11	Return on Equity
Connecticut Water Company	01/21	Connecticut Water Company	Docket No. 20-12-30	Return on Equity
Connecticut Natural Gas Corporation	06/18	Connecticut Natural Gas Corporation	Docket No. 18-05-16	Return on Equity
Yankee Gas Services Co. d/b/a Eversource Energy	06/18	Yankee Gas Services Co. d/b/a Eversource Energy	Docket No. 18-05-10	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
The Southern Connecticut Gas Company	06/17	The Southern Connecticut Gas Company	Docket No. 17-05-42	Return on Equity
The United Illuminating Company	07/16	The United Illuminating Company	Docket No. 16-06-04	Return on Equity
Federal Energy Regulatory Commission				
Sea Robin Pipeline	12/22	Sea Robin Pipeline	Docket No. RP22-____	Return on Equity
Northern Natural Gas Company	07/22	Northern Natural Gas Company	Docket No. RP22-____	Return on Equity
Transwestern Pipeline Company, LLC	07/22	Transwestern Pipeline Company, LLC	Docket No. RP22-____	Return on Equity
Florida Gas Transmission	02/21	Florida Gas Transmission	Docket No. RP21-441	Return on Equity
TransCanyon	01/21	TransCanyon	Docket No. ER21-1065	Return on Equity
Duke Energy	12/20	Duke Energy	Docket No. EL21-9-000	Return on Equity
Wisconsin Electric Power Company	08/20	Wisconsin Electric Power Company	Docket No. EL20-57-000	Return on Equity
Panhandle Eastern Pipe Line Company, LP	10/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-78-000 RP19-78-001	Return on Equity
Panhandle Eastern Pipe Line Company, LP	08/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-1523	Return on Equity
Sea Robin Pipeline Company LLC	11/18	Sea Robin Pipeline Company LLC	Docket# RP19-352-000	Return on Equity
Tallgrass Interstate Gas Transmission	10/15	Tallgrass Interstate Gas Transmission	RP16-137	Return on Equity
Idaho Public Utilities Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Intermountain Gas Co	12/22	Intermountain Gas Co	C-INT-G-22-07	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	05/21	PacifiCorp d/b/a Rocky Mountain Power	Case No. PAC-E-21-07	Return on Equity
Illinois Commerce Commission				
Peoples Gas Light & Coke Company	01/23	Peoples Gas Light & Coke Company	D-23-0069	Return on Equity
North Shore Gas Company	01/23	North Shore Gas Company	D-23-0068	Return on Equity
Illinois American Water	02/22	Illinois American Water	Docket No. 22-0210	Return on Equity
North Shore Gas Company	02/21	North Shore Gas Company	No. 20-0810	Return on Equity
Indiana Utility Regulatory Commission				
Indiana American Water Company	03/23	Indiana and Michigan American Water Company	IURC Cause No. 45870	Return on Equity
Indiana Michigan Power Co.	07/21	Indiana Michigan Power Co.	IURC Cause No. 45576	Return on Equity
Indiana Gas Company Inc.	12/20	Indiana Gas Company Inc.	IURC Cause No. 45468	Return on Equity
Southern Indiana Gas and Electric Company	10/20	Southern Indiana Gas and Electric Company	IURC Cause No. 45447	Return on Equity
Indiana and Michigan American Water Company	09/18	Indiana and Michigan American Water Company	IURC Cause No. 45142	Return on Equity
Indianapolis Power and Light Company	12/17	Indianapolis Power and Light Company	Cause No. 45029	Fair Value

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Northern Indiana Public Service Company	09/17	Northern Indiana Public Service Company	Cause No. 44988	Fair Value
Indianapolis Power and Light Company	12/16	Indianapolis Power and Light Company	Cause No.44893	Fair Value
Northern Indiana Public Service Company	10/15	Northern Indiana Public Service Company	Cause No. 44688	Fair Value
Indianapolis Power and Light Company	09/15	Indianapolis Power and Light Company	Cause No. 44576 Cause No. 44602	Fair Value
Kokomo Gas and Fuel Company	09/10	Kokomo Gas and Fuel Company	Cause No. 43942	Fair Value
Northern Indiana Fuel and Light Company, Inc.	09/10	Northern Indiana Fuel and Light Company, Inc.	Cause No. 43943	Fair Value
Iowa Department of Commerce Utilities Board				
MidAmerican Energy Company	06/23	MidAmerican Energy Company	Docket No. RPU-2023-____	Return on Equity
MidAmerican Energy Company	01/22	MidAmerican Energy Company	Docket No. RPU-2022-0001	Return on Equity
Iowa-American Water Company	08/20	Iowa-American Water Company	Docket No. RPU-2020-0001	Return on Equity
Kansas Corporation Commission				
Evergy Kansas	04/23	Evergy Kansas	Docket No. 23-____ -____-RTS	Return on Equity
Atmos Energy Corporation	08/15	Atmos Energy Corporation	Docket No. 16-ATMG-079-RTS	Return on Equity
Kentucky Public Service Commission				
Kentucky American Water Company	06/23	Kentucky American Water Company	Docket No. 2023-____	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Kentucky American Water Company	11/18	Kentucky American Water Company	Docket No. 2018-00358	Return on Equity
Maine Public Utilities Commission				
Central Maine Power	08/22	Central Maine Power	Docket No. 2022-00152	Return on Equity
Central Maine Power	10/18	Central Maine Power	Docket No. 2018-194	Return on Equity
Maryland Public Service Commission				
Maryland American Water Company	06/18	Maryland American Water Company	Case No. 9487	Return on Equity
Massachusetts Appellate Tax Board				
Hopkinton LNG Corporation	03/20	Hopkinton LNG Corporation	Docket No.	Valuation of LNG Facility
FirstLight Hydro Generating Company	06/17	FirstLight Hydro Generating Company	Docket No. F-325471 Docket No. F-325472 Docket No. F-325473 Docket No. F-325474	Valuation of Electric Generation Assets
Massachusetts Department of Public Utilities				
National Grid USA	11/20	Boston Gas Company	DPU 20-120	Return on Equity
Berkshire Gas Company	05/18	Berkshire Gas Company	DPU 18-40	Return on Equity
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Michigan Public Service Commission				
Michigan Gas Utilities Corporation	03/23	Michigan Gas Utilities Corporation	Case No. U-21366	Return on Equity
Michigan Gas Utilities Corporation	03/21	Michigan Gas Utilities Corporation	Case No. U-20718	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Wisconsin Electric Power Company	12/11	Wisconsin Electric Power Company	Case No. U-16830	Return on Equity
Michigan Tax Tribunal				
New Covert Generating Co., LLC.	03/18	The Township of New Covert Michigan	MTT Docket No. 000248TT and 16-001888-TT	Valuation of Electric Generation Assets
Covert Township	07/14	New Covert Generating Co., LLC.	Docket No. 399578	Valuation of Electric Generation Assets
Minnesota Public Utilities Commission				
Minnesota Energy Resources Corporation	11/22	Minnesota Energy Resources Corporation	Docket No. G011/GR-22-504	Return on Equity
CenterPoint Energy Resources	11/21	CenterPoint Energy Resources	D-G-008/GR-21-435	Return on Equity
Allete, Inc. d/b/a Minnesota Power	11/21	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-21-630	Return on Equity
Otter Tail Power Company	11/20	Otter Tail Power Company	E017/GR-20-719	Return on Equity
Allete, Inc. d/b/a Minnesota Power	11/19	Allete, Inc. d/b/a Minnesota Power	E015/GR-19-442	Return on Equity
CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	10/19	CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	G-008/GR-19-524	Return on Equity
Great Plains Natural Gas Co.	09/19	Great Plains Natural Gas Co.	Docket No. G004/GR-19-511	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Minnesota Energy Resources Corporation	10/17	Minnesota Energy Resources Corporation	Docket No. G011/GR-17-563	Return on Equity
Missouri Public Service Commission				
Ameren Missouri	08/22	Ameren Missouri	File No. ER-2022-0337	Return on Equity
Missouri American Water Company	07/22	Missouri American Water Company	Case No. WR-2022-0303 Case No. SR-2022-0304	Return on Equity
Evergy Missouri West	1/22	Evergy Missouri West	File No. ER-2022-0130	Return on Equity
Evergy Missouri Metro	1/22	Evergy Missouri Metro	File No. ER-2022-0129	Return on Equity
Ameren Missouri	03/21	Ameren Missouri	Docket No. ER-2021-0240 Docket No. GR-2021-0241	Return on Equity
Missouri American Water Company	06/20	Missouri American Water Company	Case No. WR-2020-0344 Case No. SR-2020-0345	Return on Equity
Missouri American Water Company	06/17	Missouri American Water Company	Case No. WR-17-0285 Case No. SR-17-0286	Return on Equity
Montana Public Service Commission				
Montana-Dakota Utilities Co.	11/22	Montana-Dakota Utilities Co.	D2022.11.099	Return on Equity
Montana-Dakota Utilities Co.	06/20	Montana-Dakota Utilities Co.	D2020.06.076	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Montana-Dakota Utilities Co.	09/18	Montana-Dakota Utilities Co.	D2018.9.60	Return on Equity
New Hampshire - Board of Tax and Land Appeals				
Liberty Utilities (Granite State Electric)	05/23	Liberty Utilities (Granite State Electric)	Docket No. DE 23-039	Return on Equity
Public Service Company of New Hampshire d/b/a Eversource Energy	11/19 12/19	Public Service Company of New Hampshire d/b/a Eversource Energy	Master Docket No. 28873-14-15-16-17PT	Valuation of Utility Property and Generating Assets
New Hampshire Public Utilities Commission				
Public Service Company of New Hampshire	05/19	Public Service Company of New Hampshire	DE-19-057	Return on Equity
New Hampshire-Merrimack County Superior Court				
Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	04/18	Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	220-2012-CV-1100	Valuation of Utility Property
New Hampshire-Rockingham Superior Court				
Eversource Energy	05/18	Public Service Commission of New Hampshire	218-2016-CV-00899 218-2017-CV-00917	Valuation of Utility Property
New Jersey Board of Public Utilities				
New Jersey American Water Company, Inc.	01/22	New Jersey American Water Company, Inc.	WR22010019	Return on Equity
Public Service Electric and Gas Company	10/20	Public Service Electric and Gas Company	EO18101115	Return on Equity
New Jersey American Water Company, Inc.	12/19	New Jersey American Water Company, Inc.	WR19121516	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Public Service Electric and Gas Company	04/19	Public Service Electric and Gas Company	EO18060629 GO18060630	Return on Equity
Public Service Electric and Gas Company	02/18	Public Service Electric and Gas Company	GR17070776	Return on Equity
Public Service Electric and Gas Company	01/18	Public Service Electric and Gas Company	ER18010029 GR18010030	Return on Equity
New Mexico Public Regulation Commission				
Southwestern Public Service Company	07/19	Southwestern Public Service Company	19-00170-UT	Return on Equity
Southwestern Public Service Company	10/17	Southwestern Public Service Company	Case No. 17-00255-UT	Return on Equity
Southwestern Public Service Company	12/16	Southwestern Public Service Company	Case No. 16-00269-UT	Return on Equity
Southwestern Public Service Company	10/15	Southwestern Public Service Company	Case No. 15-00296-UT	Return on Equity
Southwestern Public Service Company	06/15	Southwestern Public Service Company	Case No. 15-00139-UT	Return on Equity
New York State Department of Public Service				
Liberty Utilities (New York Water)	5/23	Liberty Utilities (New York Water)	Case 23-____	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/22	New York State Electric and Gas Company Rochester Gas and Electric	22-E-0317 22-G-0318 22-E-0319 22-G-0320	Return on Equity
Corning Natural Gas Corporation	07/21	Corning Natural Gas Corporation	Case No. 21-G-0394	Return on Equity
Central Hudson Gas and Electric Corporation	08/20	Central Hudson Gas and Electric Corporation	Electric 20-E-0428 Gas 20-G-0429	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Niagara Mohawk Power Corporation	07/20	National Grid USA	Case No. 20-E-0380 20-G-0381	Return on Equity
Corning Natural Gas Corporation	02/20	Corning Natural Gas Corporation	Case No. 20-G-0101	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/19	New York State Electric and Gas Company Rochester Gas and Electric	19-E-0378 19-G-0379 19-E-0380 19-G-0381	Return on Equity
Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	04/19	Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	19-G-0309 19-G-0310	Return on Equity
Central Hudson Gas and Electric Corporation	07/17	Central Hudson Gas and Electric Corporation	Electric 17-E-0459 Gas 17-G-0460	Return on Equity
Niagara Mohawk Power Corporation	04/17	National Grid USA	Case No. 17-E-0238 17-G-0239	Return on Equity
Corning Natural Gas Corporation	06/16	Corning Natural Gas Corporation	Case No. 16-G-0369	Return on Equity
National Fuel Gas Company	04/16	National Fuel Gas Company	Case No. 16-G-0257	Return on Equity
KeySpan Energy Delivery	01/16	KeySpan Energy Delivery	Case No. 15-G-0058 Case No. 15-G-0059	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/15	New York State Electric and Gas Company Rochester Gas and Electric	Case No. 15-E-0283 Case No. 15-G-0284 Case No. 15-E-0285 Case No. 15-G-0286	Return on Equity
North Dakota Public Service Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Montana-Dakota Utilities Co.	05/22	Montana-Dakota Utilities Co.	C-PU-22-194	Return on Equity
Montana-Dakota Utilities Co.	08/20	Montana-Dakota Utilities Co.	C-PU-20-379	Return on Equity
Northern States Power Company	12/12	Northern States Power Company	C-PU-12-813	Return on Equity
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity
Oklahoma Corporation Commission				
Oklahoma Gas & Electric	12/21	Oklahoma Gas & Electric	Cause No. PUD 202100164	Return on Equity
Arkansas Oklahoma Gas Corporation	01/13	Arkansas Oklahoma Gas Corporation	Cause No. PUD 201200236	Return on Equity
Oregon Public Service Commission				
PacifiCorp d/b/a Pacific Power & Light	03/22	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-399	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	02/20	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-374	Return on Equity
Pennsylvania Public Utility Commission				
American Water Works Company Inc.	04/22	Pennsylvania-American Water Company	Docket No. R-2020-3031672 (water) Docket No. R-2020-3031673 (wastewater)	Return on Equity
American Water Works Company Inc.	04/20	Pennsylvania-American Water Company	Docket No. R-2020-3019369 (water) Docket No. R-2020-3019371 (wastewater)	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
American Water Works Company Inc.	04/17	Pennsylvania-American Water Company	Docket No. R-2017-2595853	Return on Equity
South Dakota Public Utilities Commission				
MidAmerican Energy Company	05/22	MidAmerican Energy Company	D-NG22-005	Return on Equity
Northern States Power Company	06/14	Northern States Power Company	Docket No. EL14-058	Return on Equity
Texas Public Utility Commission				
Entergy Texas, Inc.	07/22	Entergy Texas, Inc.	D-53719	Return on Equity
Southwestern Public Service Commission	08/19	Southwestern Public Service Commission	Docket No. D-49831	Return on Equity
Southwestern Public Service Company	01/14	Southwestern Public Service Company	Docket No. 42004	Return on Equity
Utah Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	05/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20-035-04	Return on Equity
Virginia State Corporation Commission				
Virginia American Water Company, Inc.	11/21	Virginia American Water Company, Inc.	Docket No. PUR-2021-00255	Return on Equity
Virginia American Water Company, Inc.	11/18	Virginia American Water Company, Inc.	Docket No. PUR-2018-00175	Return on Equity
Washington Utilities Transportation Commission				
PacifiCorp d/b/a Pacific Power & Light	03/23	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-230172	Return on Equity
Cascade Natural Gas Corporation	06/20	Cascade Natural Gas Corporation	Docket No. UG-200568	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	12/19	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-191024	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Cascade Natural Gas Corporation	04/19	Cascade Natural Gas Corporation	Docket No. UG-190210	Return on Equity
West Virginia Public Service Commission				
West Virginia American Water Company	05/23	West Virginia American Water Company	Case No. 23-0383-W-42T	Return on Equity
West Virginia American Water Company	04/21	West Virginia American Water Company	Case No. 21-02369-W-42T	Return on Equity
West Virginia American Water Company	04/18	West Virginia American Water Company	Case No. 18-0573-W-42T Case No. 18-0576-S-42T	Return on Equity
Wisconsin Public Service Commission				
Wisconsin Power and Light	05/23	Wisconsin Power and Light	Docket No. 6680-UR-124	Return on Equity
Wisconsin Electric Power Company and Wisconsin Gas LLC	04/22	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-110	Return on Equity
Wisconsin Public Service Corp.	04/22	Wisconsin Public Service Corp.	6690-UR-127	Return on Equity
Alliant Energy		Alliant Energy		Return on Equity
Wisconsin Electric Power Company and Wisconsin Gas LLC	03/19	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-109	Return on Equity
Wisconsin Public Service Corp.	03/19	Wisconsin Public Service Corp.	6690-UR-126	Return on Equity
Wyoming Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	02/23	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-633-ER-23	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	03/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-578-ER-20	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Montana-Dakota Utilities Co.	05/19	Montana-Dakota Utilities Co.	30013-351-GR-19	Return on Equity

CERTIFICATIONS/ACCREDITATIONS

Certified General Appraiser, licensed in the Commonwealth of Massachusetts and the State of New Hampshire

SUMMARY OF COE ANALYSES RESULTS

<i>Constant Growth DCF</i>			
	Mean Low	Mean	Mean High
30-Day Average	8.75%	9.86%	10.72%
90-Day Average	8.69%	9.80%	10.66%
180-Day Average	8.69%	9.80%	10.66%
Constant Growth Average	8.71%	9.82%	10.68%
	Median Low	Median	Median High
30-Day Average	9.11%	9.76%	10.65%
90-Day Average	9.01%	9.66%	10.80%
180-Day Average	9.01%	9.71%	10.81%
Constant Growth Average	9.04%	9.71%	10.76%
<i>CAPM</i>			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.66%	11.65%	11.64%
Bloomberg Beta	10.90%	10.89%	10.87%
Long-term Avg. Beta	10.49%	10.49%	10.46%
<i>ECAPM</i>			
Value Line Beta	11.92%	11.92%	11.91%
Bloomberg Beta	11.35%	11.35%	11.33%
Long-term Avg. Beta	11.05%	11.04%	11.03%
<i>Risk Premium</i>			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Risk Premium Results	10.32%	10.31%	10.27%

PROXY GROUP SCREENING DATA AND RESULTS

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Company	Ticker	Dividends	S&P Credit Rating Between BBB- and AAA	Covered by More Than 1 Analyst	Positive Growth Rates from at least two sources (Value Line, Yahoo! First Call, and Zacks)	Generation Assets Included in Rate Base	% Company- Owned Generation > 40%	% Regulated Electric Operating Income > 60% of Total Operating Income	Announced Merger
ALLETE, Inc.	ALE	Yes	BBB	Yes	Yes	Yes	43.27%	100.56%	No
Alliant Energy Corporation	LNT	Yes	A-	Yes	Yes	Yes	72.75%	87.90%	No
Ameren Corporation	AEE	Yes	BBB+	Yes	Yes	Yes	75.34%	84.57%	No
American Electric Power Company, Inc.	AEP	Yes	A-	Yes	Yes	Yes	51.62%	97.34%	No
Avista Corporation	AVA	Yes	BBB	Yes	Yes	Yes	59.47%	73.85%	No
CMS Energy Corporation	CMS	Yes	BBB+	Yes	Yes	Yes	42.50%	65.48%	No
Duke Energy Corporation	DUK	Yes	BBB+	Yes	Yes	Yes	81.53%	91.02%	No
Entergy Corporation	ETR	Yes	BBB+	Yes	Yes	Yes	71.43%	98.21%	No
Evergy, Inc.	EVRG	Yes	A-	Yes	Yes	Yes	62.14%	100.00%	No
IDACORP, Inc.	IDA	Yes	BBB	Yes	Yes	Yes	65.35%	99.91%	No
NextEra Energy, Inc.	NEE	Yes	A-	Yes	Yes	Yes	96.40%	92.16%	No
NorthWestern Corporation	NWE	Yes	BBB	Yes	Yes	Yes	55.82%	84.28%	No
OGE Energy Corporation	OGE	Yes	BBB+	Yes	Yes	Yes	50.65%	100.00%	No
Pinnacle West Capital Corporation	PNW	Yes	BBB+	Yes	Yes	Yes	76.09%	100.00%	No
Portland General Electric Company	POR	Yes	BBB+	Yes	Yes	Yes	54.88%	100.00%	No
Southern Company	SO	Yes	BBB+	Yes	Yes	Yes	76.85%	75.31%	No
Xcel Energy Inc.	XEL	Yes	A-	Yes	Yes	Yes	57.97%	86.47%	No

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional

[3] Source: Yahoo! Finance and Zacks

[4] Source: Yahoo! Finance, Value Line Investment Survey, and Zacks

[5] Source: S&P Capital IQ Pro

[6] Source: S&P Capital IQ Pro

[7] Source: Form 10-K's for 2022, 2021, and 2020

[8] Source: Form 10-K's for 2022, 2021, and 2020

[9] Source: S&P Capital IQ Pro Financial News Releases

30-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.71	\$58.12	4.66%	4.84%	6.00%	8.10%	8.10%	7.40%	10.80%	12.24%	12.95%
Alliant Energy Corporation	LNT	\$1.81	\$53.11	3.41%	3.52%	6.50%	7.00%	6.50%	6.67%	10.02%	10.19%	10.53%
Ameren Corporation	AEE	\$2.52	\$84.17	2.99%	3.08%	6.50%	5.90%	6.40%	6.27%	8.98%	9.35%	9.59%
American Electric Power Company, Inc.	AEP	\$3.32	\$85.37	3.89%	4.00%	6.00%	5.20%	5.60%	5.60%	9.19%	9.60%	10.01%
Avista Corporation	AVA	\$1.84	\$38.97	4.72%	4.87%	6.50%	6.30%	6.30%	6.37%	11.17%	11.24%	11.37%
CMS Energy Corporation	CMS	\$1.95	\$59.91	3.25%	3.37%	6.50%	7.80%	7.80%	7.37%	9.86%	10.74%	11.18%
Duke Energy Corporation	DUK	\$4.02	\$91.84	4.38%	4.50%	5.00%	5.74%	6.10%	5.61%	9.49%	10.11%	10.61%
Entergy Corporation	ETR	\$4.28	\$99.98	4.28%	4.37%	0.50%	6.60%	5.70%	4.27%	4.79%	8.64%	11.02%
Evergy, Inc.	EVRG	\$2.45	\$59.41	4.12%	4.23%	7.50%	2.67%	5.20%	5.12%	6.85%	9.35%	11.78%
IDACORP, Inc.	IDA	\$3.16	\$102.78	3.07%	3.14%	5.00%	3.70%	3.70%	4.13%	6.83%	7.27%	8.15%
NextEra Energy, Inc.	NEE	\$1.87	\$73.81	2.53%	2.65%	9.50%	8.80%	8.40%	8.90%	11.04%	11.55%	12.15%
NorthWestern Corporation	NWE	\$2.56	\$57.12	4.48%	4.58%	3.50%	4.50%	5.20%	4.40%	8.06%	8.98%	9.80%
OGE Energy Corporation	OGE	\$1.66	\$35.97	4.60%	4.72%	6.50%	negative	3.70%	5.10%	8.39%	9.82%	11.25%
Pinnacle West Capital Corporation	PNW	\$3.46	\$81.98	4.22%	4.33%	2.50%	6.10%	6.30%	4.97%	6.77%	9.29%	10.65%
Portland General Electric Company	POR	\$1.90	\$47.35	4.01%	4.13%	5.00%	5.90%	6.00%	5.63%	9.11%	9.76%	10.13%
Southern Company	SO	\$2.80	\$71.21	3.93%	4.05%	6.50%	7.30%	4.00%	5.93%	8.01%	9.98%	11.38%
Xcel Energy Inc.	XEL	\$2.08	\$63.31	3.29%	3.39%	6.00%	6.15%	6.30%	6.15%	9.38%	9.54%	9.69%
Mean				3.87%	3.99%	5.62%	6.11%	5.96%	5.88%	8.75%	9.86%	10.72%
Median				4.01%	4.13%	6.00%	6.13%	6.10%	5.63%	9.11%	9.76%	10.65%

Notes:

- [1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-day average as of July 31, 2023
[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	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.71	\$60.73	4.46%	4.63%	6.00%	8.10%	8.10%	7.40%	10.80%	12.03%	12.74%
Alliant Energy Corporation	LNT	\$1.81	\$52.96	3.42%	3.53%	6.50%	7.00%	6.50%	6.67%	10.03%	10.20%	10.54%
Ameren Corporation	AEE	\$2.52	\$85.01	2.96%	3.06%	6.50%	5.90%	6.40%	6.27%	8.95%	9.32%	9.56%
American Electric Power Company, Inc.	AEP	\$3.32	\$87.56	3.79%	3.90%	6.00%	5.20%	5.60%	5.60%	9.09%	9.50%	9.91%
Avista Corporation	AVA	\$1.84	\$41.27	4.46%	4.60%	6.50%	6.30%	6.30%	6.37%	10.90%	10.97%	11.10%
CMS Energy Corporation	CMS	\$1.95	\$59.78	3.26%	3.38%	6.50%	7.80%	7.80%	7.37%	9.87%	10.75%	11.19%
Duke Energy Corporation	DUK	\$4.02	\$93.61	4.29%	4.41%	5.00%	5.74%	6.10%	5.61%	9.40%	10.03%	10.53%
Entergy Corporation	ETR	\$4.28	\$102.70	4.17%	4.26%	0.50%	6.60%	5.70%	4.27%	4.68%	8.52%	10.90%
Evergy, Inc.	EVERG	\$2.45	\$59.91	4.09%	4.19%	7.50%	2.67%	5.20%	5.12%	6.81%	9.32%	11.74%
IDACORP, Inc.	IDA	\$3.16	\$105.42	3.00%	3.06%	5.00%	3.70%	3.70%	4.13%	6.75%	7.19%	8.07%
NextEra Energy, Inc.	NEE	\$1.87	\$74.95	2.49%	2.61%	9.50%	8.80%	8.40%	8.90%	11.00%	11.51%	12.11%
NorthWestern Corporation	NWE	\$2.56	\$57.50	4.45%	4.55%	3.50%	4.50%	5.20%	4.40%	8.03%	8.95%	9.77%
OGE Energy Corporation	OGE	\$1.66	\$36.24	4.57%	4.69%	6.50%	negative	3.70%	5.10%	8.36%	9.79%	11.22%
Pinnacle West Capital Corporation	PNW	\$3.46	\$79.25	4.37%	4.47%	2.50%	6.10%	6.30%	4.97%	6.92%	9.44%	10.80%
Portland General Electric Company	POR	\$1.90	\$48.51	3.92%	4.03%	5.00%	5.90%	6.00%	5.63%	9.01%	9.66%	10.03%
Southern Company	SO	\$2.80	\$71.08	3.94%	4.06%	6.50%	7.30%	4.00%	5.93%	8.02%	9.99%	11.38%
Xcel Energy Inc.	XEL	\$2.08	\$65.62	3.17%	3.27%	6.00%	6.15%	6.30%	6.15%	9.26%	9.42%	9.57%
Mean				3.81%	3.92%	5.62%	6.11%	5.96%	5.88%	8.68%	9.80%	10.66%
Median				3.94%	4.06%	6.00%	6.13%	6.10%	5.63%	9.01%	9.66%	10.80%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 90-day average as of July 31, 2023

[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	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.71	\$61.40	4.41%	4.58%	6.00%	8.10%	8.10%	7.40%	10.55%	11.98%	12.69%
Alliant Energy Corporation	LNT	\$1.81	\$52.94	3.42%	3.53%	6.50%	7.00%	6.50%	6.67%	10.03%	10.20%	10.54%
Ameren Corporation	AEE	\$2.52	\$85.04	2.96%	3.06%	6.50%	5.90%	6.40%	6.27%	8.95%	9.32%	9.56%
American Electric Power Company, Inc.	AEP	\$3.32	\$89.50	3.71%	3.81%	6.00%	5.20%	5.60%	5.60%	9.01%	9.41%	9.82%
Avista Corporation	AVA	\$1.84	\$40.91	4.50%	4.64%	6.50%	6.30%	6.30%	6.37%	10.94%	11.01%	11.14%
CMS Energy Corporation	CMS	\$1.95	\$59.98	3.25%	3.37%	6.50%	7.80%	7.80%	7.37%	9.86%	10.74%	11.18%
Duke Energy Corporation	DUK	\$4.02	\$95.66	4.20%	4.32%	5.00%	5.74%	6.10%	5.61%	9.31%	9.93%	10.43%
Entergy Corporation	ETR	\$4.28	\$105.06	4.07%	4.16%	0.50%	6.60%	5.70%	4.27%	4.58%	8.43%	10.81%
Eversource Energy	ESV	\$2.45	\$59.79	4.10%	4.20%	7.50%	2.67%	5.20%	5.12%	6.82%	9.33%	11.75%
IDACORP, Inc.	IDA	\$3.16	\$104.49	3.02%	3.09%	5.00%	3.70%	3.70%	4.13%	6.78%	7.22%	8.10%
NextEra Energy, Inc.	NEE	\$1.87	\$76.95	2.43%	2.54%	9.50%	8.80%	8.40%	8.90%	10.93%	11.44%	12.05%
NorthWestern Corporation	NWE	\$2.56	\$56.61	4.52%	4.62%	3.50%	4.50%	5.20%	4.40%	8.10%	9.02%	9.84%
OGE Energy Corporation	OGE	\$1.66	\$36.85	4.49%	4.61%	6.50%	negative	3.70%	5.10%	8.28%	9.71%	11.14%
Pinnacle West Capital Corporation	PNW	\$3.46	\$76.38	4.53%	4.64%	2.50%	6.10%	6.30%	4.97%	7.09%	9.61%	10.97%
Portland General Electric Company	POR	\$1.90	\$47.66	3.99%	4.10%	5.00%	5.90%	6.00%	5.63%	9.09%	9.73%	10.11%
Southern Company	SO	\$2.80	\$68.72	4.07%	4.20%	6.50%	7.30%	4.00%	5.93%	8.16%	10.13%	11.52%
Xcel Energy Inc.	XEL	\$2.08	\$66.41	3.13%	3.23%	6.00%	6.15%	6.30%	6.15%	9.23%	9.38%	9.53%
Mean				3.81%	3.92%	5.62%	6.11%	5.96%	5.88%	8.69%	9.80%	10.66%
Median				4.07%	4.16%	6.00%	6.13%	6.10%	5.63%	9.01%	9.71%	10.81%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 180-day average as of July 31, 2023

[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])

CAPITAL ASSET PRICING MODEL – CURRENT RISK-FREE RATE & VL BETA

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

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm – Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.92%	0.90	12.72%	8.80%	11.84%	12.06%
Alliant Energy Corporation	LNT	3.92%	0.85	12.72%	8.80%	11.40%	11.73%
Ameren Corporation	AEE	3.92%	0.85	12.72%	8.80%	11.40%	11.73%
American Electric Power Company, Inc.	AEP	3.92%	0.75	12.72%	8.80%	10.52%	11.07%
Avista Corporation	AVA	3.92%	0.90	12.72%	8.80%	11.84%	12.06%
CMS Energy Corporation	CMS	3.92%	0.80	12.72%	8.80%	10.96%	11.40%
Duke Energy Corporation	DUK	3.92%	0.85	12.72%	8.80%	11.40%	11.73%
Entergy Corporation	ETR	3.92%	0.90	12.72%	8.80%	11.84%	12.06%
Evergy, Inc.	EVERG	3.92%	0.90	12.72%	8.80%	11.84%	12.06%
IDACORP, Inc.	IDA	3.92%	0.80	12.72%	8.80%	10.96%	11.40%
NextEra Energy, Inc.	NEE	3.92%	0.95	12.72%	8.80%	12.28%	12.39%
NorthWestern Corporation	NWE	3.92%	0.95	12.72%	8.80%	12.28%	12.39%
OGE Energy Corporation	OGE	3.92%	1.00	12.72%	8.80%	12.72%	12.72%
Pinnacle West Capital Corporation	PNW	3.92%	0.90	12.72%	8.80%	11.84%	12.06%
Portland General Electric Company	POR	3.92%	0.90	12.72%	8.80%	11.84%	12.06%
Southern Company	SO	3.92%	0.90	12.72%	8.80%	11.84%	12.06%
Xcel Energy Inc.	XEL	3.92%	0.85	12.72%	8.80%	11.40%	11.73%
Mean						11.66%	11.92%
Median						11.84%	12.06%

Notes:

- [1] Source: Bloomberg Professional, as of July 31, 2023
[2] Source: Value Line
[3] Source: Market Return
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL – NEAR-TERM PROJECTED RISK-FREE RATE & VL BETA

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

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q4 2023 - Q4 2024)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm – Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.90%	0.90	12.72%	8.82%	11.84%	12.06%
Alliant Energy Corporation	LNT	3.90%	0.85	12.72%	8.82%	11.40%	11.73%
Ameren Corporation	AEE	3.90%	0.85	12.72%	8.82%	11.40%	11.73%
American Electric Power Company, Inc.	AEP	3.90%	0.75	12.72%	8.82%	10.51%	11.06%
Avista Corporation	AVA	3.90%	0.90	12.72%	8.82%	11.84%	12.06%
CMS Energy Corporation	CMS	3.90%	0.80	12.72%	8.82%	10.95%	11.40%
Duke Energy Corporation	DUK	3.90%	0.85	12.72%	8.82%	11.40%	11.73%
Entergy Corporation	ETR	3.90%	0.90	12.72%	8.82%	11.84%	12.06%
Evergy, Inc.	EVERG	3.90%	0.90	12.72%	8.82%	11.84%	12.06%
IDACORP, Inc.	IDA	3.90%	0.80	12.72%	8.82%	10.95%	11.40%
NextEra Energy, Inc.	NEE	3.90%	0.95	12.72%	8.82%	12.28%	12.39%
NorthWestern Corporation	NWE	3.90%	0.95	12.72%	8.82%	12.28%	12.39%
OGE Energy Corporation	OGE	3.90%	1.00	12.72%	8.82%	12.72%	12.72%
Pinnacle West Capital Corporation	PNW	3.90%	0.90	12.72%	8.82%	11.84%	12.06%
Portland General Electric Company	POR	3.90%	0.90	12.72%	8.82%	11.84%	12.06%
Southern Company	SO	3.90%	0.90	12.72%	8.82%	11.84%	12.06%
Xcel Energy Inc.	XEL	3.90%	0.85	12.72%	8.82%	11.40%	11.73%
Mean						11.65%	11.92%
Median						11.84%	12.06%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 8, August 1, 2023, at 2
[2] Source: Value Line
[3] Source: Market Return
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL – LONG-TERM PROJECTED RISK-FREE RATE & VL BETA

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

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm – Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.80%	0.90	12.72%	8.92%	11.83%	12.05%
Alliant Energy Corporation	LNT	3.80%	0.85	12.72%	8.92%	11.38%	11.71%
Ameren Corporation	AEE	3.80%	0.85	12.72%	8.92%	11.38%	11.71%
American Electric Power Company, Inc.	AEP	3.80%	0.75	12.72%	8.92%	10.49%	11.05%
Avista Corporation	AVA	3.80%	0.90	12.72%	8.92%	11.83%	12.05%
CMS Energy Corporation	CMS	3.80%	0.80	12.72%	8.92%	10.93%	11.38%
Duke Energy Corporation	DUK	3.80%	0.85	12.72%	8.92%	11.38%	11.71%
Entergy Corporation	ETR	3.80%	0.90	12.72%	8.92%	11.83%	12.05%
Evergy, Inc.	EVERG	3.80%	0.90	12.72%	8.92%	11.83%	12.05%
IDACORP, Inc.	IDA	3.80%	0.80	12.72%	8.92%	10.93%	11.38%
NextEra Energy, Inc.	NEE	3.80%	0.95	12.72%	8.92%	12.27%	12.38%
NorthWestern Corporation	NWE	3.80%	0.95	12.72%	8.92%	12.27%	12.38%
OGE Energy Corporation	OGE	3.80%	1.00	12.72%	8.92%	12.72%	12.72%
Pinnacle West Capital Corporation	PNW	3.80%	0.90	12.72%	8.92%	11.83%	12.05%
Portland General Electric Company	POR	3.80%	0.90	12.72%	8.92%	11.83%	12.05%
Southern Company	SO	3.80%	0.90	12.72%	8.92%	11.83%	12.05%
Xcel Energy Inc.	XEL	3.80%	0.85	12.72%	8.92%	11.38%	11.71%
Mean						11.64%	11.91%
Median						11.83%	12.05%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14.
[2] Source: Value Line
[3] Source: Market Return
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL – CURRENT RISK-FREE RATE & BLOOMBERG BETA

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

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm – Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.92%	0.82	12.72%	8.80%	11.17%	11.56%
Alliant Energy Corporation	LNT	3.92%	0.79	12.72%	8.80%	10.87%	11.33%
Ameren Corporation	AEE	3.92%	0.75	12.72%	8.80%	10.52%	11.07%
American Electric Power Company, Inc.	AEP	3.92%	0.76	12.72%	8.80%	10.58%	11.12%
Avista Corporation	AVA	3.92%	0.75	12.72%	8.80%	10.50%	11.05%
CMS Energy Corporation	CMS	3.92%	0.75	12.72%	8.80%	10.51%	11.06%
Duke Energy Corporation	DUK	3.92%	0.72	12.72%	8.80%	10.25%	10.87%
Entergy Corporation	ETR	3.92%	0.85	12.72%	8.80%	11.44%	11.76%
Evergy, Inc.	EVERG	3.92%	0.78	12.72%	8.80%	10.78%	11.26%
IDACORP, Inc.	IDA	3.92%	0.79	12.72%	8.80%	10.90%	11.35%
NextEra Energy, Inc.	NEE	3.92%	0.81	12.72%	8.80%	11.08%	11.49%
NorthWestern Corporation	NWE	3.92%	0.86	12.72%	8.80%	11.46%	11.77%
OGE Energy Corporation	OGE	3.92%	0.92	12.72%	8.80%	12.04%	12.21%
Pinnacle West Capital Corporation	PNW	3.92%	0.83	12.72%	8.80%	11.19%	11.57%
Portland General Electric Company	POR	3.92%	0.78	12.72%	8.80%	10.79%	11.27%
Southern Company	SO	3.92%	0.77	12.72%	8.80%	10.72%	11.22%
Xcel Energy Inc.	XEL	3.92%	0.74	12.72%	8.80%	10.43%	11.00%
Mean						10.90%	11.35%
Median						10.79%	11.27%

Notes:

- [1] Source: Bloomberg Professional, as of July 31, 2023
[2] Source: Bloomberg Professional, based on 10-year weekly returns
[3] Source: Market Return
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL – NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA

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

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

Company	Ticker	[1] Near-term projected 30- year U.S. Treasury bond yield (Q4 2023 - Q4 2024)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm – Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	3.90%	0.82	12.72%	8.82%	11.17%	11.55%
Alliant Energy Corporation	LNT	3.90%	0.79	12.72%	8.82%	10.87%	11.33%
Ameren Corporation	AEE	3.90%	0.75	12.72%	8.82%	10.52%	11.07%
American Electric Power Company, Inc.	AEP	3.90%	0.76	12.72%	8.82%	10.58%	11.11%
Avista Corporation	AVA	3.90%	0.75	12.72%	8.82%	10.49%	11.05%
CMS Energy Corporation	CMS	3.90%	0.75	12.72%	8.82%	10.50%	11.06%
Duke Energy Corporation	DUK	3.90%	0.72	12.72%	8.82%	10.25%	10.86%
Entergy Corporation	ETR	3.90%	0.85	12.72%	8.82%	11.44%	11.76%
Eversys, Inc.	EVRG	3.90%	0.78	12.72%	8.82%	10.77%	11.26%
IDACORP, Inc.	IDA	3.90%	0.79	12.72%	8.82%	10.89%	11.35%
NextEra Energy, Inc.	NEE	3.90%	0.81	12.72%	8.82%	11.08%	11.49%
NorthWestern Corporation	NWE	3.90%	0.86	12.72%	8.82%	11.45%	11.77%
OGE Energy Corporation	OGE	3.90%	0.92	12.72%	8.82%	12.03%	12.20%
Pinnacle West Capital Corporation	PNW	3.90%	0.83	12.72%	8.82%	11.19%	11.57%
Portland General Electric Company	POR	3.90%	0.78	12.72%	8.82%	10.78%	11.27%
Southern Company	SO	3.90%	0.77	12.72%	8.82%	10.72%	11.22%
Xcel Energy Inc.	XEL	3.90%	0.74	12.72%	8.82%	10.42%	11.00%
Mean						10.89%	11.35%
Median						10.78%	11.27%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 8, August 1, 2023, at 2
[2] Source: Bloomberg Professional, based on 10-year weekly returns
[3] Source: Market Return
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL – LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA

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

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2025 - 2029)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm – Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	3.80%	0.82	12.72%	8.92%	11.15%	11.54%
Alliant Energy Corporation	LNT	3.80%	0.79	12.72%	8.92%	10.85%	11.31%
Ameren Corporation	AEE	3.80%	0.75	12.72%	8.92%	10.49%	11.05%
American Electric Power Company, Inc.	AEP	3.80%	0.76	12.72%	8.92%	10.55%	11.09%
Avista Corporation	AVA	3.80%	0.75	12.72%	8.92%	10.47%	11.03%
CMS Energy Corporation	CMS	3.80%	0.75	12.72%	8.92%	10.48%	11.04%
Duke Energy Corporation	DUK	3.80%	0.72	12.72%	8.92%	10.22%	10.84%
Entergy Corporation	ETR	3.80%	0.85	12.72%	8.92%	11.42%	11.75%
Eversys, Inc.	EVRG	3.80%	0.78	12.72%	8.92%	10.75%	11.24%
IDACORP, Inc.	IDA	3.80%	0.79	12.72%	8.92%	10.87%	11.33%
NextEra Energy, Inc.	NEE	3.80%	0.81	12.72%	8.92%	11.06%	11.47%
NorthWestern Corporation	NWE	3.80%	0.86	12.72%	8.92%	11.44%	11.76%
OGE Energy Corporation	OGE	3.80%	0.92	12.72%	8.92%	12.03%	12.20%
Pinnacle West Capital Corporation	PNW	3.80%	0.83	12.72%	8.92%	11.17%	11.58%
Portland General Electric Company	POR	3.80%	0.78	12.72%	8.92%	10.76%	11.25%
Southern Company	SO	3.80%	0.77	12.72%	8.92%	10.69%	11.20%
Xcel Energy Inc.	XEL	3.80%	0.74	12.72%	8.92%	10.40%	10.98%
Mean						10.87%	11.33%
Median						10.76%	11.25%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14.
[2] Source: Bloomberg Professional, based on 10-year weekly returns
[3] Source: Market Return
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL – CURRENT RISK-FREE RATE & VALUE LINE LT AVERAGE BETA

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

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
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)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.92%	0.79	12.72%	8.80%	10.83%	11.30%
Alliant Energy Corporation	LNT	3.92%	0.75	12.72%	8.80%	10.52%	11.07%
Ameren Corporation	AEE	3.92%	0.73	12.72%	8.80%	10.30%	10.90%
American Electric Power Company, Inc.	AEP	3.92%	0.68	12.72%	8.80%	9.86%	10.57%
Avista Corporation	AVA	3.92%	0.79	12.72%	8.80%	10.83%	11.30%
CMS Energy Corporation	CMS	3.92%	0.69	12.72%	8.80%	9.99%	10.67%
Duke Energy Corporation	DUK	3.92%	0.67	12.72%	8.80%	9.77%	10.51%
Entergy Corporation	ETR	3.92%	0.75	12.72%	8.80%	10.47%	11.04%
Evergy, Inc.	EVERG	3.92%	0.95	12.72%	8.80%	12.28%	12.39%
IDACORP, Inc.	IDA	3.92%	0.73	12.72%	8.80%	10.34%	10.94%
NextEra Energy, Inc.	NEE	3.92%	0.73	12.72%	8.80%	10.34%	10.94%
NorthWestern Corporation	NWE	3.92%	0.75	12.72%	8.80%	10.47%	11.04%
OGE Energy Corporation	OGE	3.92%	0.93	12.72%	8.80%	12.10%	12.26%
Pinnacle West Capital Corporation	PNW	3.92%	0.74	12.72%	8.80%	10.39%	10.97%
Portland General Electric Company	POR	3.92%	0.75	12.72%	8.80%	10.52%	11.07%
Southern Company	SO	3.92%	0.66	12.72%	8.80%	9.68%	10.44%
Xcel Energy Inc.	XEL	3.92%	0.66	12.72%	8.80%	9.68%	10.44%
Mean						10.49%	11.05%
Median						10.39%	10.97%

Notes:

[1] Source: Bloomberg Professional, as of July 31, 2023

[2] Source: LT Beta

[3] Source: Market Return

[4] Equals [3] - [1]

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

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL – NEAR-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT AVERAGE BETA

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

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30- year U.S. Treasury bond yield (Q4 2023 - Q4 2024)	Beta (β)	Market Return (R _m)	Market Risk Premium (R _m – R _f)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.90%	0.79	12.72%	8.82%	10.82%	11.30%
Alliant Energy Corporation	LNT	3.90%	0.75	12.72%	8.82%	10.51%	11.06%
Ameren Corporation	AEE	3.90%	0.73	12.72%	8.82%	10.29%	10.90%
American Electric Power Company, Inc.	AEP	3.90%	0.68	12.72%	8.82%	9.85%	10.57%
Avista Corporation	AVA	3.90%	0.79	12.72%	8.82%	10.82%	11.30%
CMS Energy Corporation	CMS	3.90%	0.69	12.72%	8.82%	9.98%	10.67%
Duke Energy Corporation	DUK	3.90%	0.67	12.72%	8.82%	9.76%	10.50%
Entergy Corporation	ETR	3.90%	0.75	12.72%	8.82%	10.47%	11.03%
Evergy, Inc.	EVERG	3.90%	0.95	12.72%	8.82%	12.28%	12.39%
IDACORP, Inc.	IDA	3.90%	0.73	12.72%	8.82%	10.34%	10.93%
NextEra Energy, Inc.	NEE	3.90%	0.73	12.72%	8.82%	10.34%	10.93%
NorthWestern Corporation	NWE	3.90%	0.75	12.72%	8.82%	10.47%	11.03%
OGE Energy Corporation	OGE	3.90%	0.93	12.72%	8.82%	12.10%	12.25%
Pinnacle West Capital Corporation	PNW	3.90%	0.74	12.72%	8.82%	10.38%	10.97%
Portland General Electric Company	POR	3.90%	0.75	12.72%	8.82%	10.51%	11.06%
Southern Company	SO	3.90%	0.66	12.72%	8.82%	9.68%	10.44%
Xcel Energy Inc.	XEL	3.90%	0.66	12.72%	8.82%	9.68%	10.44%
Mean						10.49%	11.04%
Median						10.38%	10.97%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 8, August 1, 2023, at 2

[2] Source: LT Beta

[3] Source: Market Return

[4] Equals [3] - [1]

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

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL – LONG-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT AVERAGE BETA

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

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta (β)	Market Return (R _m)	Market Risk Premium (R _m – R _f)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.80%	0.79	12.72%	8.92%	10.80%	11.28%
Alliant Energy Corporation	LNT	3.80%	0.75	12.72%	8.92%	10.49%	11.05%
Ameren Corporation	AEE	3.80%	0.73	12.72%	8.92%	10.27%	10.88%
American Electric Power Company, Inc.	AEP	3.80%	0.68	12.72%	8.92%	9.82%	10.54%
Avista Corporation	AVA	3.80%	0.79	12.72%	8.92%	10.80%	11.28%
CMS Energy Corporation	CMS	3.80%	0.69	12.72%	8.92%	9.95%	10.64%
Duke Energy Corporation	DUK	3.80%	0.67	12.72%	8.92%	9.73%	10.48%
Entergy Corporation	ETR	3.80%	0.75	12.72%	8.92%	10.44%	11.01%
Evergy, Inc.	EVERG	3.80%	0.95	12.72%	8.92%	12.27%	12.38%
IDACORP, Inc.	IDA	3.80%	0.73	12.72%	8.92%	10.31%	10.91%
NextEra Energy, Inc.	NEE	3.80%	0.73	12.72%	8.92%	10.31%	10.91%
NorthWestern Corporation	NWE	3.80%	0.75	12.72%	8.92%	10.44%	11.01%
OGE Energy Corporation	OGE	3.80%	0.93	12.72%	8.92%	12.09%	12.25%
Pinnacle West Capital Corporation	PNW	3.80%	0.74	12.72%	8.92%	10.35%	10.95%
Portland General Electric Company	POR	3.80%	0.75	12.72%	8.92%	10.49%	11.05%
Southern Company	SO	3.80%	0.66	12.72%	8.92%	9.64%	10.41%
Xcel Energy Inc.	XEL	3.80%	0.66	12.72%	8.92%	9.64%	10.41%
Mean						10.46%	11.03%
Median						10.35%	10.95%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14.

[2] Source: LT Beta

[3] Source: Market Return

[4] Equals [3] - [1]

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

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

HISTORICAL BETA - 2013 - 2022

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	Average
ALLETE, Inc.	ALE	0.75	0.80	0.80	0.75	0.80	0.65	0.65	0.85	0.90	0.90	0.79
Alliant Energy Corporation	LNT	0.75	0.80	0.80	0.70	0.70	0.60	0.60	0.85	0.85	0.85	0.75
Ameren Corporation	AEE	0.80	0.75	0.75	0.65	0.70	0.55	0.55	0.85	0.80	0.85	0.73
American Electric Power Company, Inc.	AEP	0.70	0.70	0.70	0.65	0.65	0.55	0.55	0.75	0.75	0.75	0.68
Avista Corporation	AVA	0.75	0.80	0.80	0.70	0.75	0.65	0.60	0.95	0.95	0.90	0.79
CMS Energy Corporation	CMS	0.70	0.70	0.75	0.65	0.65	0.55	0.50	0.80	0.80	0.80	0.69
Duke Energy Corporation	DUK	0.65	0.60	0.65	0.60	0.60	0.50	0.50	0.85	0.85	0.85	0.67
Entergy Corporation	ETR	0.70	0.70	0.70	0.65	0.65	0.60	0.60	0.95	0.95	0.95	0.75
Eversource Energy	ESV	0.75	0.80	0.80	0.75	0.70	0.65	0.60	0.95	0.95	0.95	0.75
IDACORP, Inc.	IDA	0.75	0.80	0.80	0.75	0.70	0.55	0.55	0.80	0.80	0.80	0.73
NextEra Energy, Inc.	NEE	0.70	0.70	0.75	0.65	0.65	0.55	0.55	0.90	0.90	0.95	0.73
NorthWestern Corporation	NWE	0.70	0.70	0.70	0.70	0.70	0.55	0.60	0.95	0.85	0.90	0.75
OGE Energy Corporation	OGE	0.85	0.90	0.95	0.90	0.95	0.85	0.75	1.10	1.05	1.00	0.93
Pinnacle West Capital Corporation	PNW	0.75	0.70	0.75	0.70	0.70	0.55	0.50	0.90	0.90	0.90	0.74
Portland General Electric Company	POR	0.75	0.80	0.80	0.70	0.70	0.60	0.55	0.85	0.90	0.85	0.75
Southern Company	SO	0.55	0.55	0.60	0.55	0.55	0.50	0.50	0.90	0.85	0.90	0.66
Xcel Energy Inc.	XEL	0.65	0.65	0.65	0.60	0.60	0.50	0.50	0.80	0.80	0.80	0.66
Mean		0.72	0.73	0.75	0.68	0.69	0.58	0.57	0.89	0.89	0.87	0.75

Notes:

- [1] Value Line, dated December 26, 2013.
- [2] Value Line, dated December 31, 2014.
- [3] Value Line, dated December 30, 2015.
- [4] Value Line, dated December 29, 2016.
- [5] Value Line, dated December 28, 2017.
- [6] Value Line, dated December 27, 2018.
- [7] Value Line, dated December 26, 2019.
- [8] Value Line, dated December 30, 2020.
- [9] Value Line, dated December 29, 2021.
- [10] Value Line, dated December 30, 2022.
- [11] Average ([1] - [10])

MARKET RISK PREMIUM DERIVED FROM S&P 500 INDEX

[1] Estimated Weighted Average Dividend Yield	1.60%
[2] Estimated Weighted Average Long-Term Growth Rate	11.03%
[3] S&P 500 Estimated Required Market Return	12.72%

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Growth Rate	Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	325.27	98.86	32,157	0.11%	5.06%	0.01%	13.50%	0.01%
American Express Co	AXP	736.46	168.88	124,373	0.42%	1.42%	0.01%	11.89%	0.05%
Verizon Communications Inc	VZ	4,204.04	34.08	143,274		7.66%			
Broadcom Inc	AVGO	412.69	898.85	370,859	1.26%	2.05%	0.03%	12.79%	0.16%
Boeing Co/The	BA	603.20	238.85	144,075					
Caterpillar Inc	CAT	515.36	285.17	136,657	0.47%	1.96%	0.01%	15.00%	0.07%
JPMorgan Chase & Co	JPM	2,922.29	157.96	461,605		2.53%		0.00%	
Chevron Corp	CVX	1,853.00	163.66	303,262	1.03%	3.69%	0.04%	8.77%	0.06%
Coca-Cola Co/The	KO	4,324.35	61.93	267,807	0.91%	2.87%	0.03%	7.19%	0.07%
AbbVie Inc	ABBV	1,764.29	149.58	263,902	0.90%	3.96%	0.04%	2.48%	0.02%
Walt Disney Co/The	DIS	1,827.31	88.89	162,429				22.77%	
FleetCor Technologies Inc	FLT	73.83	248.91	18,378	0.06%			12.18%	0.01%
Extra Space Storage Inc	EXR	211.21	139.57	29,478	0.10%	2.89%	0.00%	3.96%	0.00%
Exxon Mobil Corp	XOM	4,003.00	107.24	429,282	1.46%	3.39%	0.05%	13.89%	0.20%
Phillips 66	PSX	460.91	111.55	51,415	0.18%	3.77%	0.01%	9.46%	0.02%
General Electric Co	GE	1,089.38	114.24	124,336	0.42%	0.38%	0.00%	7.00%	0.03%
HP Inc	HPQ	985.96	32.83	32,369		3.20%		-4.44%	
Home Depot Inc/The	HD	1,005.38	333.84	335,635	1.14%	2.50%	0.03%	0.56%	0.01%
Monolithic Power Systems Inc	MPWR	47.42	559.49	26,533		0.71%			
International Business Machines Corp	IBM	911.01	144.18	131,349	0.45%	4.61%	0.02%	3.35%	0.01%
Johnson & Johnson	JNJ	2,598.97	167.53	435,405	1.48%	2.84%	0.04%	4.54%	0.07%
McDonald's Corp	MCD	730.09	293.20	214,064	0.73%	2.07%	0.02%	9.60%	0.07%
Merck & Co Inc	MRK	2,537.44	106.85	270,618		2.74%		27.61%	
3M Co	MMM	551.99	111.50	61,547	0.21%	5.38%	0.01%	10.00%	0.02%
American Water Works Co Inc	AWK	194.67	147.43	28,700	0.10%	1.82%	0.00%	7.95%	0.01%
Bank of America Corp	BAC	7,946.37	32.00	254,284		3.00%		-4.00%	
Pfizer Inc	PFE	5,645.31	36.06	203,570		4.55%		-1.00%	
Procter & Gamble Co/The	PG	2,362.10	156.30	369,196	1.26%	2.41%	0.03%	5.69%	0.07%
AT&T Inc	T	7,149.00	14.52	103,803	0.35%	7.64%	0.03%	2.44%	0.01%
Travelers Cos Inc/The	TRV	228.94	172.61	39,518	0.13%	2.32%	0.00%	14.92%	0.02%
RTX Corp	RTX	1,455.52	87.93	127,983	0.44%	2.68%	0.01%	8.88%	0.04%
Analog Devices Inc	ADI	501.42	199.53	100,048	0.34%	1.72%	0.01%	7.50%	0.03%
Walmart Inc	WMT	2,692.84	159.86	430,477	1.47%	1.43%	0.02%	8.00%	0.12%
Cisco Systems Inc	CSCO	4,075.06	52.04	212,068	0.72%	3.00%	0.02%	7.50%	0.05%
Intel Corp	INTC	4,189.00	35.77	149,805	0.51%	1.40%	0.01%	5.65%	0.03%
General Motors Co	GM	1,375.91	38.37	52,793	0.18%	0.94%	0.00%	0.36%	0.00%
Microsoft Corp	MSFT	7,429.76	335.92	2,495,806	8.50%	0.81%	0.07%	16.62%	1.41%
Dollar General Corp	DG	219.34	168.86	37,038	0.13%	1.40%	0.00%	3.36%	0.00%
Cigna Group/The	CI	295.87	295.10	87,312	0.30%	1.67%	0.00%	10.80%	0.03%
Kinder Morgan Inc	KMI	2,228.17	17.71	39,461	0.13%	6.38%	0.01%	2.00%	0.00%
Citigroup Inc	C	1,936.70	47.66	92,303		4.45%		-7.06%	
American International Group Inc	AIG	723.75	60.28	43,628	0.15%	2.36%	0.00%	9.50%	0.01%
Altria Group Inc	MO	1,785.04	45.42	81,077	0.28%	8.28%	0.02%	6.00%	0.02%
HCA Healthcare Inc	HCA	275.19	272.81	75,075	0.26%	0.88%	0.00%	7.58%	0.02%
International Paper Co	IP	346.00	36.06	12,477		5.13%		-2.00%	
Hewlett Packard Enterprise Co	HPE	1,291.52	17.38	22,447	0.08%	2.76%	0.00%	3.72%	0.00%
Abbott Laboratories	ABT	1,738.95	111.33	193,597	0.66%	1.83%	0.01%	2.18%	0.01%
Aflac Inc	AFL	604.23	72.34	43,710	0.15%	2.32%	0.00%	4.66%	0.01%
Air Products and Chemicals Inc	APD	222.12	305.33	67,821	0.23%	2.29%	0.01%	10.26%	0.02%
Royal Caribbean Cruises Ltd	RCL	256.17	109.11	27,951				124.32%	
Hess Corp	HES	307.05	151.73	46,589		1.15%		-23.46%	
Archer-Daniels-Midland Co	ADM	536.10	84.96	45,547		2.12%		-8.10%	
Automatic Data Processing Inc	ADP	412.10	247.26	101,896	0.35%	2.02%	0.01%	16.00%	0.06%
Verisk Analytics Inc	VRSK	144.79	228.94	33,148	0.11%	0.59%	0.00%	11.71%	0.01%
AutoZone Inc	AZO	18.16	2,481.72	45,058	0.15%			13.48%	0.02%
Avery Dennison Corp	AVY	80.73	184.01	14,855	0.05%	1.76%	0.00%	7.00%	0.00%
Enphase Energy Inc	ENPH	136.36	151.83	20,703				23.17%	
MSCI Inc	MSCI	79.09	548.08	43,347	0.15%	1.01%	0.00%	14.63%	0.02%
Ball Corp	BALL	314.55	58.89	18,461	0.06%	1.36%	0.00%	9.50%	0.01%
Axon Enterprise Inc	AXON	73.89	185.93	13,737	0.05%			15.10%	0.01%
Ceridian HCM Holding Inc	CDAY	155.03	70.81	10,978					
Carrier Global Corp	CARR	837.63	59.55	49,881	0.17%	1.24%	0.00%	10.65%	0.02%
Bank of New York Mellon Corp/The	BK	778.78	45.36	35,326	0.12%	3.70%	0.00%	10.00%	0.01%
Otis Worldwide Corp	OTIS	411.75	90.96	37,452	0.13%	1.50%	0.00%	9.00%	0.01%
Baxter International Inc	BAX	506.41	45.23	22,905	0.08%	2.56%	0.00%	0.83%	0.00%
Becton Dickinson & Co	BDX	284.02	278.62	79,132	0.27%	1.31%	0.00%	9.60%	0.03%
Berkshire Hathaway Inc	BRK/B	1,295.97	351.96	456,130					
Best Buy Co Inc	BBY	218.21	83.05	18,122	0.06%	4.43%	0.00%	3.14%	0.00%
Boston Scientific Corp	BSX	1,437.70	51.85	74,545	0.25%			12.10%	0.03%
Bristol-Myers Squibb Co	BMJ	2,089.10	62.19	129,921	0.44%	3.67%	0.02%	2.55%	0.01%
Brown-Forman Corp	BF/B	310.11	70.60	21,894	0.07%	1.16%	0.00%	8.55%	0.01%
Coterra Energy Inc	CTRA	757.45	27.54	20,960		2.90%		25.02%	
Campbell Soup Co	CPB	298.09	45.82	13,659	0.05%	3.23%	0.00%	3.38%	0.00%
Hilton Worldwide Holdings Inc	HLT	261.51	155.49	40,663	0.14%	0.39%	0.00%	17.14%	0.02%
Carnival Corp	CCL	1,116.01	18.84	21,026				-12.00%	
Qorvo Inc	QRVO	98.74	110.02	10,863				8.23%	0.00%
UDR Inc	UDR	329.48	40.88	13,469	0.05%	4.11%	0.00%	17.02%	0.01%
Clorox Co/The	CLX	123.62	151.48	18,727	0.06%	3.17%	0.00%		
Paycom Software Inc	PAYC	60.29	368.76	22,234		0.41%			
CMS Energy Corp	CMS	291.73	60.58	17,672	0.06%	3.22%	0.00%	7.90%	0.00%
Newell Brands Inc	NWL	414.20	11.16	4,622		2.51%		-4.00%	

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Growth Rate	Cap-Weighted Long-Term Growth Est.
Colgate-Palmolive Co	CL	826.69	76.26	63,044	0.21%	2.52%	0.01%	6.93%	0.01%
EPAM Systems Inc	EPAM	57.91	236.61	13,713	0.05%			4.39%	0.00%
Comerica Inc	CMA	131.78	53.96	7,111		5.26%		-6.12%	
Conagra Brands Inc	CAG	477.06	32.81	15,652	0.05%	4.27%	0.00%	1.31%	0.00%
Consolidated Edison Inc	ED	346.54	94.86	32,873	0.11%	3.42%	0.00%	4.00%	0.00%
Corning Inc	GLW	652.98	33.94	28,960	0.10%	3.30%	0.00%	6.58%	0.01%
Cummins Inc	CMI	141.56	260.80	36,919		2.58%			
Caesars Entertainment Inc	CZR	215.20	59.02	12,701					
Danaher Corp	DHR	739.35	255.06	188,324	0.64%	0.42%	0.00%	9.00%	0.06%
Target Corp	TGT	461.56	136.47	62,989	0.21%	3.22%	0.01%	8.91%	0.02%
Deere & Co	DE	293.19	429.60	125,955	0.43%	1.16%	0.00%	17.28%	0.07%
Dominion Energy Inc	D	835.94	53.55	44,765	0.15%	4.99%	0.01%	2.21%	0.00%
Dover Corp	DOV	139.87	145.97	20,417	0.07%	1.38%	0.00%	13.00%	0.01%
Alliant Energy Corp	LNT	251.39	53.74	13,510	0.05%	3.37%	0.00%	6.48%	0.00%
Steel Dynamics Inc	STLD	169.03	106.58	18,016		1.60%			
Duke Energy Corp	DUK	771.00	93.82	72,181	0.25%	4.38%	0.01%	6.12%	0.02%
Regency Centers Corp	REG	171.00	65.53	11,205	0.04%	3.97%	0.00%	3.57%	0.00%
Eaton Corp PLC	ETN	398.60	205.32	81,841	0.28%	1.68%	0.00%	15.00%	0.04%
Ecolab Inc	ECL	284.72	183.14	52,144	0.18%	1.16%	0.00%	14.00%	0.02%
Revvity Inc	RVTY	125.44	122.95	15,423		0.23%		-8.17%	
Emerson Electric Co	EMR	571.50	91.35	52,207	0.18%	2.28%	0.00%	10.31%	0.02%
EOG Resources Inc	EOG	584.86	132.53	77,511	0.26%	2.49%	0.01%	10.83%	0.03%
Aon PLC	AON	202.87	318.50	64,613	0.22%	0.77%	0.00%	10.09%	0.02%
Entergy Corp	ETR	211.45	102.70	21,716	0.07%	4.17%	0.00%	6.33%	0.00%
Equifax Inc	EFX	122.72	204.08	25,045	0.09%	0.76%	0.00%	11.40%	0.01%
EQT Corp	EQT	361.66	42.18	15,255		1.42%		29.19%	
ICVIA Holdings Inc	ICV	185.55	223.76	41,518	0.14%			9.04%	0.01%
Gartner Inc	IT	79.04	353.59	27,948	0.10%			7.53%	0.01%
FedEx Corp	FDX	251.19	289.95	67,808	0.23%	1.87%	0.00%	13.00%	0.03%
FMC Corp	FMC	125.04	96.23	12,033	0.04%	2.41%	0.00%	3.50%	0.00%
Brown & Brown Inc	BRO	283.61	70.45	19,981	0.07%	0.65%	0.00%	9.00%	0.01%
Ford Motor Co	F	3,831.37	13.21	51,933	0.18%	4.54%	0.01%	10.96%	0.02%
NextEra Energy Inc	NEE	2,023.71	73.30	148,338	0.51%	2.55%	0.01%	8.48%	0.04%
Franklin Resources Inc	BEN	498.98	29.24	14,590		4.10%		-5.90%	
Garmin Ltd	GRMN	191.29	105.89	20,256	0.07%	2.76%	0.00%	5.60%	0.00%
Freeport-McMoRan Inc	FCX	1,433.29	44.65	63,996		1.34%		-13.68%	
Dexcom Inc	DXCM	387.87	124.56	48,313				30.96%	
General Dynamics Corp	GD	273.04	223.58	61,047	0.21%	2.36%	0.00%	10.90%	0.02%
General Mills Inc	GIS	585.18	74.74	43,737	0.15%	3.16%	0.00%	8.00%	0.01%
Genuine Parts Co	GPC	140.44	155.72	21,869	0.07%	2.44%	0.00%	8.95%	0.01%
Atmos Energy Corp	ATO	144.49	121.71	17,586	0.06%	2.43%	0.00%	7.96%	0.00%
VWV Grainger Inc	GWW	50.00	738.49	36,925		1.01%			
Halliburton Co	HAL	898.55	39.08	35,115		1.84%		23.40%	
L3Harris Technologies Inc	LHX	189.13	189.49	35,839	0.12%	2.41%	0.00%	2.29%	0.00%
Healthpeak Properties Inc	PEAK	547.05	21.83	11,942	0.04%	5.50%	0.00%	4.72%	0.00%
Insulet Corp	PODD	69.70	276.75	19,288				35.05%	
Catalent Inc	CTLT	180.27	48.52	8,747				-6.33%	
Fortive Corp	FTV	352.02	78.35	27,581	0.09%	0.36%	0.00%	7.93%	0.01%
Hershey Co/The	HSY	149.85	231.31	34,663	0.12%	2.06%	0.00%	9.50%	0.01%
Synchrony Financial	SYF	418.18	34.54	14,444		2.90%		64.00%	
Hormel Foods Corp	HRL	546.27	40.88	22,331	0.08%	2.69%	0.00%	2.50%	0.00%
Arthur J Gallagher & Co	AJG	215.50	214.80	46,289	0.16%	1.02%	0.00%	13.20%	0.02%
Mondelez International Inc	MDLZ	1,360.42	74.13	100,848	0.34%	2.29%	0.01%	8.89%	0.03%
CenterPoint Energy Inc	CNP	629.43	30.09	18,940	0.06%	2.53%	0.00%	8.02%	0.01%
Humana Inc	HUM	124.95	456.83	57,079	0.19%	0.77%	0.00%	13.82%	0.03%
Willis Towers Watson PLC	WTW	104.82	211.33	22,152	0.08%	1.59%	0.00%	10.82%	0.01%
Illinois Tool Works Inc	ITW	303.90	263.32	80,024	0.27%	1.89%	0.01%	3.75%	0.01%
CDW Corp/DE	CDW	134.79	187.07	25,215	0.09%	1.26%	0.00%	13.10%	0.01%
Trane Technologies PLC	TT	228.05	199.44	45,483	0.15%	1.50%	0.00%	10.10%	0.02%
Interpublic Group of Cos Inc/The	IPG	384.94	34.23	13,176	0.04%	3.62%	0.00%	6.99%	0.00%
International Flavors & Fragrances Inc	IFF	255.09	84.61	21,583		3.83%		21.71%	
Generac Holdings Inc	GNRC	62.19	153.70	9,559	0.03%			8.00%	0.00%
NXP Semiconductors NV	NXPI	257.80	222.86	57,485		1.82%		20.50%	
Kellogg Co	K	342.76	66.89	22,927	0.08%	3.59%	0.00%	2.40%	0.00%
Broadridge Financial Solutions Inc	BR	117.98	167.92	19,811		1.73%			
Kimberly-Clark Corp	KMB	338.19	129.10	43,860	0.15%	3.66%	0.01%	9.71%	0.01%
Kimco Realty Corp	KIM	619.89	20.26	12,559	0.04%	4.54%	0.00%	4.65%	0.00%
Oracle Corp	ORCL	2,714.26	117.23	318,193	1.08%	1.36%	0.01%	15.00%	0.16%
Kroger Co/The	KR	717.75	48.84	34,911	0.12%	2.38%	0.00%	4.76%	0.01%
Lennar Corp	LEN	252.53	126.83	32,028		1.18%		-3.15%	
Eli Lilly & Co	LLY	949.27	454.55	431,492		0.99%		21.73%	
Bath & Body Works Inc	BBWI	228.91	37.06	8,483	0.03%	2.16%	0.00%	11.46%	0.00%
Charter Communications Inc	CHTR	149.67	405.19	60,645	0.21%			15.90%	0.03%
Lincoln National Corp	LNC	169.56	28.04	4,754		6.42%			
Loews Corp	L	225.51	62.65	14,128		0.40%			
Lowe's Cos Inc	LOW	585.98	234.27	137,278		1.88%		20.63%	
IDEX Corp	IEX	75.60	225.81	17,072	0.06%	1.13%	0.00%	10.00%	0.01%
Marsh & McLennan Cos Inc	MMC	493.95	188.42	93,071	0.32%	1.51%	0.00%	11.25%	0.04%
Masco Corp	MAS	224.93	60.68	13,649	0.05%	1.88%	0.00%	6.74%	0.00%
S&P Global Inc	SPGI	318.20	394.51	125,533	0.43%	0.91%	0.00%	13.72%	0.06%
Medtronic PLC	MDT	1,330.41	87.76	116,756	0.40%	3.14%	0.01%	3.23%	0.01%
Viatis Inc	VTRS	1,198.03	10.53	12,626		4.56%		-1.16%	
CVS Health Corp	CVS	1,282.03	74.69	95,754	0.33%	3.24%	0.01%	6.90%	0.02%
DuPont de Nemours Inc	DD	459.02	77.63	35,633	0.12%	1.85%	0.00%	7.53%	0.01%
Micron Technology Inc	MU	1,095.30	71.39	78,194		0.64%		-15.93%	
Motorola Solutions Inc	MSI	167.72	286.63	48,073		1.23%			
Cboe Global Markets Inc	CBOE	105.57	139.68	14,747		1.43%			
Laboratory Corp of America Holdings	LH	88.60	213.93	18,954		1.35%		-4.73%	
Newmont Corp	NEM	794.73	42.92	34,110	0.12%	3.73%	0.00%	11.86%	0.01%
NIKE Inc	NKE	1,225.07	110.39	135,236	0.46%	1.23%	0.01%	15.34%	0.07%
NiSource Inc	NI	413.06	27.84	11,500	0.04%	3.59%	0.00%	7.50%	0.00%

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Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Growth Rate	Cap-Weighted Long-Term Growth Est.
Norfolk Southern Corp	NSC	227.02	232.22	52,717	0.18%	2.33%	0.00%	3.17%	0.01%
Principal Financial Group Inc	PFG	242.78	79.87	19,390	0.07%	3.26%	0.00%	7.61%	0.01%
Eversource Energy	ES	348.84	72.33	25,232	0.09%	3.73%	0.00%	5.96%	0.01%
Northrop Grumman Corp	NOC	151.30	445.00	67,329	0.23%	1.68%	0.00%	4.03%	0.01%
Wells Fargo & Co	WFC	3,667.70	45.80	167,987	0.57%	3.06%	0.02%	13.41%	0.08%
Nucor Corp	NUE	251.22	172.09	43,233		1.19%		-10.56%	
Occidental Petroleum Corp	OXY	891.75	63.13	56,296		1.14%		-14.19%	
Omnicom Group Inc	OMC	197.57	84.62	16,718	0.06%	3.31%	0.00%	6.31%	0.00%
ONEOK Inc	OKE	447.44	67.04	29,997	0.10%	5.70%	0.01%	8.77%	0.01%
Raymond James Financial Inc	RJF	208.50	110.07	22,950		1.53%			
PG&E Corp	PCG	2,598.99	17.81	45,240	0.15%			6.26%	0.01%
Parker-Hannifin Corp	PH	128.30	410.01	52,603	0.18%	1.44%	0.00%	14.56%	0.03%
Rollins Inc	ROL	492.82	40.83	20,122	0.07%	1.27%	0.00%	13.72%	0.01%
PPL Corp	PPL	737.07	27.53	20,291	0.07%	3.49%	0.00%	7.21%	0.00%
ConocoPhillips	COP	1,211.88	117.72	142,662		0.51%		-7.00%	
PulteGroup Inc	PHM	219.45	84.39	18,519		0.76%		-3.91%	
Pinnacle West Capital Corp	PNW	113.26	82.82	9,380	0.03%	4.18%	0.00%	6.16%	0.00%
PNC Financial Services Group Inc/The	PNC	398.00	136.89	54,482		4.53%			
PPG Industries Inc	PPG	235.51	143.90	33,890	0.12%	1.81%	0.00%	13.00%	0.02%
Progressive Corp/The	PGR	585.30	125.98	73,736		0.32%		38.28%	
Public Service Enterprise Group Inc	PEG	498.97	63.12	31,495	0.11%	3.61%	0.00%	5.05%	0.01%
Robert Half Inc	RHI	107.76	74.15	7,991	0.03%	2.56%	0.00%	0.78%	0.00%
Edison International	EIX	383.29	71.96	27,581	0.09%	4.10%	0.00%	5.35%	0.01%
Schlumberger NV	SLB	1,421.19	58.34	82,912		1.71%		27.56%	
Charles Schwab Corp/The	SCHW	1,769.14	66.10	116,940	0.40%	1.51%	0.01%	5.31%	0.02%
Sherwin-Williams Co/The	SHW	257.15	276.50	71,102	0.24%	0.88%	0.00%	8.49%	0.02%
West Pharmaceutical Services Inc	WST	73.86	368.04	27,184	0.09%	0.21%	0.00%	18.65%	0.02%
J M Smucker Co/The	SJM	102.05	150.65	15,373	0.05%	2.81%	0.00%	5.06%	0.00%
Snap-on Inc	SNA	52.92	272.44	14,417	0.05%	2.38%	0.00%	4.87%	0.00%
AMETEK Inc	AME	230.48	158.60	36,553	0.12%	0.63%	0.00%	6.86%	0.01%
Southern Co/The	SO	1,091.52	72.34	78,960	0.27%	3.87%	0.01%	4.50%	0.01%
Truist Financial Corp	TFC	1,331.98	33.22	44,248	0.15%	6.26%	0.01%	4.13%	0.01%
Southwest Airlines Co	LUV	595.63	34.16	20,347		2.11%		29.08%	
W R Berkley Corp	WRB	257.52	61.69	15,886	0.05%	0.71%	0.00%	12.50%	0.01%
Stanley Black & Decker Inc	SWK	153.14	99.27	15,203		3.26%			
Public Storage	PSA	175.81	291.75	49,535	0.17%	4.26%	0.01%	3.41%	0.01%
Arista Networks Inc	ANET	308.28	155.09	47,812	0.16%			18.07%	0.03%
Sysco Corp	SYA	506.68	76.31	38,665		2.62%		46.00%	
Corteva Inc	CTVA	710.68	56.43	40,104	0.14%	1.13%	0.00%	19.90%	0.03%
Texas Instruments Inc	TXN	907.97	180.00	163,434	0.56%	2.76%	0.02%	7.80%	0.04%
Textron Inc	TXT	198.07	77.77	15,404	0.05%	0.10%	0.00%	11.18%	0.01%
Thermo Fisher Scientific Inc	TMO	385.72	548.66	211,630		0.26%			
TJX Cos Inc/The	TJX	1,149.24	86.53	99,444	0.34%	1.54%	0.01%	10.00%	0.03%
Globe Life Inc	GL	95.56	112.17	10,718		0.80%			
Johnson Controls International plc	JCI	686.10	69.55	47,718	0.16%	2.13%	0.00%	14.69%	0.02%
Ulta Beauty Inc	ULTA	49.80	444.80	22,152		0.08%		6.09%	0.00%
Union Pacific Corp	UNP	609.46	232.02	141,406	0.48%	2.24%	0.01%	6.50%	0.03%
Keysight Technologies Inc	KEYS	178.37	161.08	28,732	0.10%			6.74%	0.01%
UnitedHealth Group Inc	UNH	931.03	506.37	471,447	1.61%	1.49%	0.02%	12.79%	0.21%
Marathon Oil Corp	MRO	617.60	26.27	16,224	0.06%	1.52%	0.00%	1.50%	0.00%
Bio-Rad Laboratories Inc	BIO	24.54	405.36	9,946					
Ventas Inc	VTR	400.05	48.52	19,411	0.07%	3.71%	0.00%	9.48%	0.01%
VF Corp	VFC	388.68	19.81	7,700	0.03%	6.06%	0.00%	1.44%	0.00%
Vulcan Materials Co	VMC	133.06	220.50	29,340		0.78%		21.48%	
Weyerhaeuser Co	WY	730.75	34.06	24,889		2.23%			
Whirlpool Corp	WHR	54.82	144.26	7,908		4.85%		-1.35%	
Williams Cos Inc/The	WMB	1,218.19	34.45	41,967	0.14%	5.20%	0.01%	3.50%	0.01%
Constellation Energy Corp	CEG	326.66	96.65	31,572		1.17%		-152.43%	
WEC Energy Group Inc	WEC	315.44	89.86	28,345	0.10%	3.47%	0.00%	6.26%	0.01%
Adobe Inc	ADBE	455.80	546.17	248,944	0.85%			16.88%	0.14%
AES Corp/The	AES	669.34	21.63	14,478	0.05%	3.07%	0.00%	9.12%	0.00%
Amgen Inc	AMGN	534.33	234.15	125,113	0.43%	3.64%	0.02%	4.00%	0.02%
Apple Inc	AAPL	15,728.70	196.45	3,089,904	10.53%	0.49%	0.05%	13.00%	1.37%
Autodesk Inc	ADSK	213.73	211.59	45,308	0.15%			16.39%	0.03%
Cintas Corp	CTAS	101.74	502.04	51,079	0.17%	1.08%	0.00%	9.74%	0.02%
Comcast Corp	CMCSA	4,115.69	45.26	186,276	0.63%	2.56%	0.02%	8.68%	0.06%
Molson Coors Beverage Co	TAP	200.38	69.77	13,981	0.05%	2.35%	0.00%	9.05%	0.00%
KLA Corp	KLAC	137.20	513.95	70,513	0.24%	1.01%	0.00%	9.27%	0.02%
Marriott International Inc/MD	MAR	303.35	201.81	61,220	0.21%	1.03%	0.00%	16.26%	0.03%
Fiserv Inc	FI	609.62	126.21	76,940	0.26%			14.63%	0.04%
McCormick & Co Inc/MD	MKC	251.10	89.49	22,468	0.08%	1.74%	0.00%	7.01%	0.01%
PACCAR Inc	PCAR	522.80	86.13	45,029	0.15%	1.25%	0.00%	12.00%	0.02%
Costco Wholesale Corp	COST	443.15	560.67	248,460	0.85%	0.73%	0.01%	12.46%	0.11%
Stryker Corp	SYK	379.61	283.41	107,565	0.37%	1.06%	0.00%	8.82%	0.03%
Tyson Foods Inc	TSN	285.60	55.72	15,914		3.45%		-21.58%	
Lamb Weston Holdings Inc	LW	145.67	103.35	15,054	0.05%	1.08%	0.00%	12.14%	0.01%
Applied Materials Inc	AMAT	839.75	151.59	127,297	0.43%	0.84%	0.00%	1.87%	0.01%
American Airlines Group Inc	AAL	653.36	16.75	10,944				80.75%	
Cardinal Health Inc	CAH	254.60	91.47	23,288	0.08%	2.19%	0.00%	13.54%	0.01%
Cincinnati Financial Corp	CINF	156.86	107.58	16,875	0.06%	2.79%	0.00%	17.66%	0.01%
Paramount Global	PARA	610.65	16.03	9,792		1.25%		-20.15%	
DR Horton Inc	DHI	338.30	127.02	42,970		0.79%		-8.43%	
Electronic Arts Inc	EA	272.12	136.35	37,103	0.13%	0.56%	0.00%	7.73%	0.01%
Fair Isaac Corp	FICO	24.99	837.97	20,943					
Expeditors International of Washington Inc	EXPD	152.79	127.30	19,450		1.08%			
Fastenal Co	FAST	571.33	58.61	33,486		2.39%			
M&T Bank Corp	MTB	165.89	139.86	23,202	0.08%		0.00%	11.10%	0.01%
Xcel Energy Inc	XEL	551.53	62.73	34,596	0.12%	3.32%	0.00%	6.35%	0.01%
Fifth Third Bancorp	FTB	680.65	29.10	19,813		4.54%		25.00%	
Gilead Sciences Inc	GILD	1,248.82	76.14	95,085	0.32%	3.94%	0.01%	0.42%	0.00%
Hasbro Inc	HAS	138.61	64.56	8,949	0.03%	4.34%	0.00%	6.66%	0.00%

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Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Growth Rate	Cap-Weighted Long-Term Growth Est.
Huntington Bancshares Inc/OH	HBAN	1,447.88	12.24	17,722		5.07%		-5.65%	
Welltower Inc	WELL	497.03	82.15	40,631	0.14%	2.97%	0.00%	10.64%	0.01%
Biogen Inc	BILB	144.82	270.19	39,130	0.13%			1.73%	0.00%
Northern Trust Corp	NTRS	207.00	80.12	16,585	0.06%	3.74%	0.00%	13.00%	0.01%
Packaging Corp of America	PKG	89.93	153.35	13,791	0.05%	3.26%	0.00%	3.00%	0.00%
Paychex Inc	PAYX	360.55	125.47	45,238	0.15%	2.84%	0.00%	7.00%	0.01%
QUALCOMM Inc	QCOM	1,114.00	132.17	147,237		2.42%		-0.48%	
Ross Stores Inc	ROST	340.66	114.64	39,053	0.13%	1.17%	0.00%	10.00%	0.01%
IDEXX Laboratories Inc	IDXX	83.01	554.73	46,045	0.16%			17.27%	0.03%
Starbucks Corp	SBUX	1,148.40	101.57	116,440	0.40%	2.09%	0.01%	17.52%	0.07%
KeyCorp	KEY	935.73	12.31	11,519	0.04%	6.66%	0.00%	7.53%	0.00%
Fox Corp	FOXA	269.06	33.45	9,000	0.03%	1.49%	0.00%	10.84%	0.00%
Fox Corp	FOX	235.58	31.41	7,400	0.03%	1.59%	0.00%	10.84%	0.00%
State Street Corp	STT	318.64	72.44	23,082	0.08%	3.81%	0.00%	6.16%	0.00%
Norwegian Cruise Line Holdings Ltd	NCLH	424.17	22.07	9,361					
US Bancorp	USB	1,532.92	39.68	60,826	0.21%	4.84%	0.01%	8.00%	0.02%
A O Smith Corp	AOS	124.59	72.83	9,049		1.65%			
Gen Digital Inc	GEN	639.42	19.45	12,437		2.57%			
T Rowe Price Group Inc	TROW	224.30	123.28	27,647		3.96%		-1.18%	
Waste Management Inc	WM	405.06	163.79	66,345	0.23%	1.71%	0.00%	9.80%	0.02%
Constellation Brands Inc	STZ	183.30	272.80	50,005	0.17%	1.30%	0.00%	9.73%	0.02%
DENTSPLY SIRONA Inc	XRAY	212.48	41.52	8,822	0.03%	1.36%	0.00%	9.33%	0.00%
Zions Bancorp NA	ZION	148.14	38.25	5,667		4.29%		-3.00%	
Alaska Air Group Inc	ALK	127.35	48.63	6,193				23.98%	
Invesco Ltd	IVZ	448.60	16.80	7,536	0.03%	4.76%	0.00%	4.54%	0.00%
Inuit Inc	INTU	280.06	511.70	143,307	0.49%	0.61%	0.00%	15.94%	0.08%
Morgan Stanley	MS	1,670.11	91.56	152,916	0.52%	3.71%	0.02%	3.76%	0.02%
Microchip Technology Inc	MCHP	545.38	93.94	51,233	0.17%	1.63%	0.00%	8.64%	0.02%
Chubb Ltd	CB	410.74	204.41	83,958	0.29%	1.68%	0.00%	14.00%	0.04%
Hologic Inc	HOLX	246.12	79.42	19,547				-26.13%	
Citizens Financial Group Inc	CFG	474.68	31.84	15,114		5.28%		-6.14%	
O'Reilly Automotive Inc	ORLY	60.40	925.79	55,920	0.19%			11.57%	0.02%
Allstate Corp/The	ALL	262.85	112.68	29,618		3.16%		48.41%	
Equity Residential	EQR	379.03	65.94	24,993	0.09%	4.02%	0.00%	5.68%	0.00%
BorgWarner Inc	BWA	234.37	46.50	10,898	0.04%	0.95%	0.00%	12.56%	0.00%
Keurig Dr Pepper Inc	KDP	1,397.26	34.01	47,521	0.16%	2.35%	0.00%	6.35%	0.01%
Organon & Co	OGN	255.06	21.98	5,606	0.02%	5.10%	0.00%	5.48%	0.00%
Host Hotels & Resorts Inc	HST	711.24	18.40	13,087		3.26%			
Incyte Corp	INCY	223.09	63.72	14,215				66.14%	
Simon Property Group Inc	SPG	326.99	124.60	40,743	0.14%	5.94%	0.01%	3.52%	0.00%
Eastman Chemical Co	EMN	118.56	85.58	10,146	0.03%	3.69%	0.00%	5.93%	0.00%
AvalonBay Communities Inc	AVB	142.00	188.65	28,788	0.09%	3.50%	0.00%	8.50%	0.01%
Prudential Financial Inc	PRU	365.00	95.49	35,219	0.12%	5.18%	0.01%	11.13%	0.01%
United Parcel Service Inc	UPS	724.78	187.13	135,628		3.49%		-0.78%	
Walgreens Boots Alliance Inc	WBA	863.26	29.97	25,872		6.41%		-6.57%	
STERIS PLC	STE	98.65	225.55	22,251		0.92%			
McKesson Corp	MCK	135.51	402.40	54,530	0.19%	0.62%	0.00%	9.80%	0.02%
Lockheed Martin Corp	LMT	251.83	448.37	112,410	0.38%	2.69%	0.01%	6.99%	0.03%
AmerisourceBergen Corp	ABC	201.98	186.90	37,751	0.13%	1.04%	0.00%	8.93%	0.01%
Capital One Financial Corp	COF	381.44	117.02	44,636		2.05%		-3.03%	
Waters Corp	WAT	59.03	276.21	16,306	0.06%			6.61%	0.00%
Nordson Corp	NDGN	56.99	251.61	14,340		1.03%		48.00%	
Dollar Tree Inc	DLTR	220.39	154.33	34,012	0.12%			9.23%	0.01%
Darden Restaurants Inc	DRI	121.07	168.92	20,451	0.07%	3.10%	0.00%	10.79%	0.01%
Evergy Inc	EVERG	229.58	59.97	13,768	0.05%	4.09%	0.00%	4.74%	0.00%
Match Group Inc	MTCH	278.46	46.51	12,951					
Dominos Pizza Inc	DPZ	35.09	396.74	13,923	0.05%	1.22%	0.00%	13.94%	0.01%
NVR Inc	NVR	3.26	6,306.44	20,565				-3.60%	
NetApp Inc	NTAP	210.82	78.01	16,446	0.06%	2.56%	0.00%	7.40%	0.00%
DXC Technology Co	DXC	210.07	27.65	5,809	0.02%			11.42%	0.00%
Old Dominion Freight Line Inc	ODFL	109.65	419.49	45,996	0.16%	0.38%	0.00%	4.45%	0.01%
DaVita Inc	DVA	90.70	101.99	9,250	0.03%			14.60%	0.00%
Hartford Financial Services Group Inc/The	HIG	305.82	71.88	21,982	0.07%	2.37%	0.00%	7.00%	0.01%
Iron Mountain Inc	IRM	291.62	61.40	17,906	0.06%	4.03%	0.00%	4.00%	0.00%
Estee Lauder Cos Inc/The	EL	231.87	180.00	41,737	0.14%	1.47%	0.00%	18.89%	0.03%
Cadence Design Systems Inc	CDNS	271.79	234.01	63,602	0.22%			19.00%	0.04%
Tyler Technologies Inc	TYL	42.08	396.63	16,689					
Universal Health Services Inc	UHS	62.93	138.96	8,745	0.03%	0.58%	0.00%	8.65%	0.00%
Skyworks Solutions Inc	SKWK	159.16	114.37	18,203	0.06%	2.17%	0.00%	9.40%	0.01%
Quest Diagnostics Inc	DGX	112.24	135.21	15,175		2.10%		-20.34%	
Activision Blizzard Inc	ATVI	786.80	91.77	72,204	0.25%	1.08%	0.00%	5.00%	0.01%
Rockwell Automation Inc	ROK	114.88	336.29	38,631	0.13%	1.40%	0.00%	18.98%	0.02%
Kraft Heinz Co/The	KHC	1,227.24	36.18	44,401	0.15%	4.42%	0.01%	3.92%	0.01%
American Tower Corp	AMT	466.16	190.31	88,714	0.30%	3.30%	0.01%	11.96%	0.04%
Regeneron Pharmaceuticals Inc	REGN	107.89	741.91	80,046	0.27%			7.00%	0.02%
Amazon.com Inc	AMZN	10,260.35	133.68	1,371,604				58.71%	
Jack Henry & Associates Inc	JKHY	72.88	167.57	12,212	0.04%	1.24%	0.00%	5.62%	0.00%
Ralph Lauren Corp	RL	40.39	131.33	5,304	0.02%	2.28%	0.00%	10.38%	0.00%
Boston Properties Inc	BXP	156.84	66.63	10,450	0.04%	5.88%	0.00%	1.21%	0.00%
Amphenol Corp	APH	596.45	88.31	52,673	0.18%	0.95%	0.00%	5.46%	0.01%
Howmet Aerospace Inc	HWM	413.29	51.10	21,118	0.07%	0.31%	0.00%	16.69%	0.01%
Pioneer Natural Resources Co	PXD	233.74	225.67	52,747		5.92%		-2.23%	
Valero Energy Corp	VLO	353.13	127.89	45,162		3.19%		-7.69%	
Synopsys Inc	SNPS	152.16	451.80	68,746	0.23%			16.62%	0.04%
Etsy Inc	ETSY	123.35	101.65	12,539	0.04%			14.97%	0.01%
CH Robinson Worldwide Inc	CHRW	116.44	100.18	11,665	0.04%	2.44%	0.00%	10.00%	0.00%
Accenture PLC	ACN	630.80	316.35	199,552	0.68%	1.42%	0.01%	10.00%	0.07%
TransDigm Group Inc	TDG	54.93	899.72	49,420				24.54%	
Yum! Brands Inc	YUM	280.09	137.67	38,560	0.13%	1.76%	0.00%	11.71%	0.02%
Prologis Inc	PLD	923.45	124.75	115,200	0.39%	2.79%	0.01%	8.95%	0.04%
FirstEnergy Corp	FE	572.84	39.39	22,564		3.96%		-0.33%	

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Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Growth Rate	Cap-Weighted Long-Term Growth Est.
VeriSign Inc	VRSN	103.13	210.95	21,756	0.07%			12.30%	0.01%
Quanta Services Inc	PWR	145.18	201.62	29,270		0.16%			
Henry Schein Inc	HSIC	131.00	78.79	10,322	0.04%			5.04%	0.00%
Ameren Corp	AEE	262.48	85.87	22,486	0.08%	2.94%	0.00%	6.93%	0.01%
ANSYS Inc	ANSS	86.66	342.10	29,647	0.10%			10.26%	0.01%
FactSet Research Systems Inc	FDS	38.15	435.04	16,595	0.06%	0.90%	0.00%	11.97%	0.01%
NVIDIA Corp	NVDA	2,470.00	467.29	1,154,206		0.03%		35.00%	
Sealed Air Corp	SEE	144.39	45.62	6,587	0.02%	1.75%	0.00%	4.30%	0.00%
Cognizant Technology Solutions Corp	CTSH	507.48	66.03	33,509	0.11%	1.76%	0.00%	12.00%	0.01%
Intuitive Surgical Inc	ISRG	351.36	324.40	113,980	0.39%			16.14%	0.06%
Take-Two Interactive Software Inc	TTWO	169.63	152.94	25,974				-1.04%	
Republic Services Inc	RSG	316.28	151.11	47,793	0.16%	1.42%	0.00%	9.09%	0.01%
eBay Inc	EBAY	532.16	44.51	23,686	0.08%	2.25%	0.00%	6.50%	0.01%
Goldman Sachs Group Inc/The	GS	332.45	355.87	118,308	0.40%	3.09%	0.01%	9.00%	0.04%
SBA Communications Corp	SBAC	108.34	218.95	23,721		1.55%			
Sempra	SRE	314.65	149.02	48,889	0.16%	3.19%	0.01%	4.04%	0.01%
Moody's Corp	MCO	183.50	352.75	64,730	0.22%	0.87%	0.00%	13.87%	0.03%
ON Semiconductor Corp	ON	431.53	107.75	48,497	0.16%			8.50%	0.01%
Booking Holdings Inc	BKNG	36.93	2,970.80	109,724	0.37%			20.00%	0.07%
F5 Inc	FFW	59.30	158.24	9,383	0.03%			10.19%	0.00%
Akamai Technologies Inc	AKAM	156.30	94.50	14,771	0.05%			10.00%	0.01%
Charles River Laboratories International Inc	CRL	51.18	209.54	10,725	0.04%			14.00%	0.01%
MarketAccess Holdings Inc	MKTX	37.68	268.50	10,116		1.07%			
Devon Energy Corp	DVN	641.70	54.00	34,652		5.33%		20.68%	
Bio-Techne Corp	TECH	157.44	83.40	13,130		0.38%			
Alphabet Inc	GOOGL	5,933.00	132.72	787,428	2.68%			16.51%	0.44%
Teleflex Inc	TFX	46.97	251.17	11,798	0.04%	0.54%	0.00%	6.15%	0.00%
Bunge Ltd	BG	150.62	108.67	18,368		2.44%		-5.81%	
Allegion plc	ALLE	87.78	116.86	10,258	0.03%	1.54%	0.00%	5.43%	0.00%
Netflix Inc	NFLX	443.15	438.97	194,528				32.28%	
Warner Bros Discovery Inc	WBD	2,438.11	13.07	31,840					
Agilent Technologies Inc	A	295.38	121.77	35,968	0.12%	0.74%	0.00%	14.00%	0.02%
Trimble Inc	TRMB	247.75	53.80	13,329					
Elevance Health Inc	ELV	235.65	471.63	111,139	0.38%	1.26%	0.00%	12.07%	0.05%
CME Group Inc	CME	359.72	198.96	71,569	0.24%	2.21%	0.01%	6.14%	0.01%
Juniper Networks Inc	JNPR	321.36	27.80	8,934	0.03%	3.17%	0.00%	7.89%	0.00%
BlackRock Inc	BLK	149.76	738.85	110,652	0.38%	2.71%	0.01%	9.20%	0.03%
DTE Energy Co	DTE	206.11	114.30	23,558	0.08%	3.33%	0.00%	6.50%	0.01%
Celanese Corp	CE	108.79	125.39	13,641	0.05%	2.23%	0.00%	10.27%	0.00%
Nasdaq Inc	NDAQ	490.77	50.49	24,779	0.08%	1.74%	0.00%	2.68%	0.00%
Philip Morris International Inc	PM	1,552.35	99.72	154,800	0.53%	5.09%	0.03%	7.99%	0.04%
Ingersoll Rand Inc	IR	404.52	65.27	28,403		0.12%			
Salesforce Inc	CRM	974.00	225.01	219,160				22.50%	
Huntington Ingalls Industries Inc	HII	39.89	229.67	9,162		2.16%		40.00%	
Roper Technologies Inc	ROP	106.59	493.05	52,555		0.55%			
MetLife Inc	MET	765.82	62.97	48,224	0.16%	3.30%	0.01%	8.88%	0.01%
Tapestry Inc	TPR	231.80	43.15	10,002	0.03%	2.78%	0.00%	14.00%	0.00%
CSX Corp	CSX	2,008.33	33.32	68,851	0.23%	1.32%	0.00%	3.11%	0.01%
Edwards Lifesciences Corp	EW	607.92	82.07	49,892	0.17%			10.65%	0.02%
Ameriprise Financial Inc	AMP	104.18	348.45	36,301	0.12%	1.55%	0.00%	17.59%	0.02%
Zebra Technologies Corp	ZBRA	51.43	307.96	15,838					
Zimmer Biomet Holdings Inc	ZBH	208.57	138.15	28,814	0.10%	0.69%	0.00%	9.20%	0.01%
Camden Property Trust	CPT	106.76	109.09	11,647	0.04%	3.67%	0.00%	3.48%	0.00%
CBRE Group Inc	CBRE	309.84	83.31	25,813					
Mastercard Inc	MA	934.85	394.28	368,592	1.26%	0.58%	0.01%	18.18%	0.23%
CarMax Inc	KMX	158.21	82.61	13,070	0.04%			15.54%	0.01%
Intercontinental Exchange Inc	ICE	559.87	114.80	64,273	0.22%	1.46%	0.00%	11.21%	0.02%
Fidelity National Information Services Inc	FIS	592.44	60.38	35,771	0.12%	3.44%	0.00%	3.02%	0.00%
Chipotle Mexican Grill Inc	CMG	27.59	1,962.28	54,135				26.95%	
Wynn Resorts Ltd	WYNN	113.80	108.98	12,402		0.92%			
Live Nation Entertainment Inc	LYV	230.15	87.75	20,196					
Assurant Inc	AIZ	53.15	134.51	7,149	0.02%	2.08%	0.00%	11.43%	0.00%
NRG Energy Inc	NRG	230.23	37.99	8,747	0.03%	3.97%	0.00%	4.03%	0.00%
Monster Beverage Corp	MNST	1,048.71	57.49	60,175				22.52%	
Regions Financial Corp	RF	938.31	20.37	19,113	0.07%	4.71%	0.00%	2.08%	0.00%
Baker Hughes Co	BKR	1,009.65	35.79	38,136		2.24%		57.62%	
Mosaic Co/The	MOS	332.11	40.76	13,537	0.05%	1.96%	0.00%	7.00%	0.00%
Expedia Group Inc	EXPE	142.60	122.53	17,473	0.06%			17.50%	0.01%
CF Industries Holdings Inc	CF	194.92	82.08	15,899	0.05%	1.95%	0.00%	6.00%	0.00%
APA Corp	APA	308.60	40.49	12,495		2.47%		-2.60%	
Leidos Holdings Inc	LDOS	137.17	93.53	12,829	0.04%	1.54%	0.00%	5.95%	0.00%
Alphabet Inc	GOOG	5,801.00	133.11	772,171	2.63%			16.51%	0.43%
First Solar Inc	FSR	106.63	207.40	22,157				44.40%	
Cooper Cos Inc/The	COO	49.51	391.26	19,371	0.07%	0.02%	0.00%	9.00%	0.01%
TE Connectivity Ltd	TEL	313.94	143.49	45,047	0.15%	1.64%	0.00%	3.10%	0.00%
Discover Financial Services	DFS	249.95	105.55	28,382	0.09%	2.65%	0.00%	6.85%	0.01%
Linde PLC	LIN	487.95	390.67	190,626	0.65%	1.31%	0.01%	13.50%	0.09%
Visa Inc	V	1,808.79	237.73	381,982	1.30%	0.76%	0.01%	14.91%	0.19%
Mid-America Apartment Communities Inc	MAA	116.68	149.66	17,462		3.74%			
Xylem Inc/NY	XYL	239.35	112.75	26,987		1.17%			
Marathon Petroleum Corp	MPC	424.28	133.02	56,438		2.26%		29.12%	
Advanced Micro Devices Inc	AMD	1,610.36	114.40	184,225	0.63%			6.10%	0.04%
Tractor Supply Co	TSCO	109.57	223.99	24,542	0.08%	1.84%	0.00%	7.63%	0.01%
ResMed Inc	RMD	147.07	222.35	32,701	0.11%	0.79%	0.00%	11.62%	0.01%
Mettler-Toledo International Inc	MTD	21.87	1,257.47	27,495	0.09%			9.75%	0.01%
VICI Properties Inc	VICI	1,013.43	31.48	31,903	0.11%	4.96%	0.01%	6.33%	0.01%
Copart Inc	CPRT	477.44	88.39	42,201	0.14%			10.00%	0.01%
Jacobs Solutions Inc	J	126.85	125.41	15,908	0.05%	0.83%	0.00%	9.26%	0.01%
Fortinet Inc	FTNT	785.20	77.72	61,025	0.21%			18.50%	0.04%
Albemarle Corp	ALB	117.34	212.28	24,908		0.75%		36.57%	
Moderna Inc	MRNA	381.21	117.66	44,853				-65.68%	

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Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Growth Rate	Cap-Weighted Long-Term Growth Est.
Essex Property Trust Inc	ESS	64.18	243.55	15,632	0.05%	3.79%	0.00%	9.80%	0.01%
CoStar Group Inc	COSGP	408.34	63.97	34,288	0.12%			20.00%	0.02%
Realty Income Corp	O	673.22	60.97	41,046	0.14%	5.03%	0.01%	0.25%	0.00%
Westrock Co	WRK	256.13	33.29	8,527		3.30%		-24.09%	
Westinghouse Air Brake Technologies Corp	WAB	179.13	118.44	21,216	0.07%	0.57%	0.00%	11.33%	0.01%
Pool Corp	POOL	39.05	384.74	15,025		1.14%		-4.92%	
Western Digital Corp	WDC	319.94	42.96	13,617				-22.46%	
PepsiCo Inc	PEP	1,376.58	167.46	258,054	0.88%	2.70%	0.02%	8.64%	0.08%
Diamondback Energy Inc	FANG	181.09	147.32	26,679	0.09%	2.28%	0.00%	2.00%	0.00%
Palo Alto Networks Inc	PANW	305.86	249.96	76,452				30.00%	
ServiceNow Inc	NOW	204.00	583.00	118,932				30.00%	
Church & Dwight Co Inc	CHD	246.05	95.67	23,539	0.08%	1.14%	0.00%	5.85%	0.00%
Federal Realty Investment Trust	FRT	81.52	101.52	8,275	0.03%	4.26%	0.00%	6.20%	0.00%
MGM Resorts International	MGM	363.80	50.77	18,470					
American Electric Power Co Inc	AEP	515.18	84.74	43,656	0.15%	3.92%	0.01%	5.61%	0.01%
SolarEdge Technologies Inc	SEDG	56.35	241.46	13,605				36.57%	
Invitation Homes Inc	INVH	611.96	35.50	21,724	0.07%	2.93%	0.00%	7.96%	0.01%
PTC Inc	PTC	118.35	145.81	17,257	0.06%			16.99%	0.01%
JB Hunt Transport Services Inc	JBHT	103.35	203.52	21,033	0.07%	0.83%	0.00%	15.00%	0.01%
Lam Research Corp	LRCX	133.30	718.49	95,773		0.96%			
Mohawk Industries Inc	MHK	63.68	106.34	6,772				-1.83%	
Pentair PLC	PNR	165.11	69.50	11,475	0.04%	1.27%	0.00%	6.14%	0.00%
GE HealthCare Technologies Inc	GEHC	454.84	78.00	35,477	0.12%	0.15%	0.00%	13.50%	0.02%
Vertex Pharmaceuticals Inc	VRTX	257.55	352.34	90,746	0.31%			14.12%	0.04%
Amcor PLC	AMCR	1,471.44	10.26	15,097		4.78%		-0.83%	
Meta Platforms Inc	META	2,222.58	318.60	708,115				21.72%	
T-Mobile US Inc	TMUS	1,178.46	137.77	162,080	0.55%			5.00%	0.03%
United Rentals Inc	URI	88.28	464.68	31,730		1.27%		21.02%	
Alexandria Real Estate Equities Inc	ARE	173.03	125.68	21,746	0.07%	3.95%	0.00%	4.05%	0.00%
Honeywell International Inc	HON	663.96	194.13	128,895	0.44%	2.12%	0.01%	9.50%	0.04%
Delta Air Lines Inc	DAL	643.42	46.26	29,765		0.86%		37.89%	
United Airlines Holdings Inc	UAL	326.73	54.31	17,745				67.35%	
Seagate Technology Holdings PLC	STX	207.08	63.50	13,150	0.04%	4.41%	0.00%	1.21%	0.00%
News Corp	NWS	192.52	20.11	3,871	0.01%	0.99%	0.00%	1.60%	0.00%
Centene Corp	CNC	541.48	68.09	36,869	0.13%			8.43%	0.01%
Martin Marietta Materials Inc	MLM	61.80	446.46	27,593	0.09%	0.59%	0.00%	19.03%	0.02%
Teradyne Inc	TER	155.04	112.94	17,510	0.06%	0.39%	0.00%	20.00%	0.01%
PayPal Holdings Inc	PYPL	1,115.71	75.82	84,593	0.29%			15.72%	0.05%
Tesla Inc	TSLA	3,173.89	267.43	848,821	2.89%			16.00%	0.46%
Arch Capital Group Ltd	ACGL	372.90	77.69	28,971	0.10%			14.50%	0.01%
Dow Inc	DOW	703.08	56.47	39,703	0.14%	4.96%	0.01%	2.78%	0.00%
Everest Group Ltd	EG	43.40	360.51	15,646		1.83%		33.49%	
Teledyne Technologies Inc	TDY	47.08	384.53	18,102	0.06%			6.47%	0.00%
News Corp	NWSA	380.95	19.82	7,550	0.03%	1.01%	0.00%	1.60%	0.00%
Exelon Corp	EXC	994.30	41.86	41,621	0.14%	3.44%	0.00%	5.30%	0.01%
Global Payments Inc	GPN	261.95	110.25	28,880	0.10%	0.91%	0.00%	13.69%	0.01%
Crown Castle Inc	CCI	434.00	108.29	46,998		5.78%			
Aptiv PLC	APTIV	270.51	109.49	29,618	0.10%			11.94%	0.01%
Advance Auto Parts Inc	AAP	59.44	74.39	4,422		1.34%		-7.41%	
Align Technology Inc	ALGN	76.52	377.89	28,915	0.10%			17.54%	0.02%
Illumina Inc	ILMN	158.10	192.15	30,379					
Targa Resources Corp	TRGP	226.02	81.99	18,531		2.44%			
LKQ Corp	LKQ	267.56	54.79	14,659		2.01%			
Zoetis Inc	ZTS	462.11	188.09	86,919	0.30%	0.80%	0.00%	10.91%	0.03%
Digital Realty Trust Inc	DLR	299.24	124.62	37,291	0.13%	3.92%	0.00%	6.59%	0.01%
Equinix Inc	EQIX	93.52	809.92	75,746	0.26%	1.68%	0.00%	14.96%	0.04%
Las Vegas Sands Corp	LVS	764.45	59.81	45,722		0.33%			
Molina Healthcare Inc	MOH	58.30	304.49	17,752	0.06%			11.74%	0.01%

Notes:

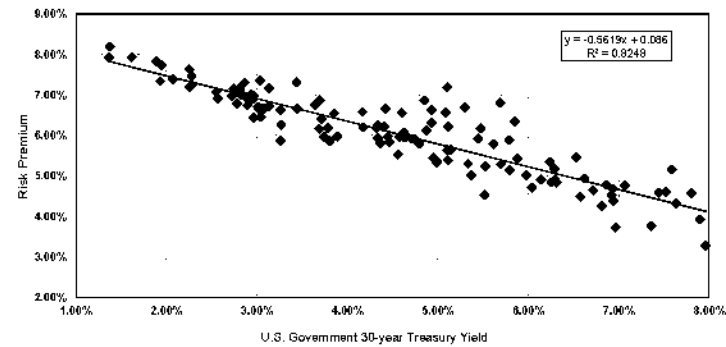
- [1] Equals sum of Col. [9]
[2] Equals sum of Col. [11]
[3] Equals $([1] \times (1 + (0.5 \times [2])) + [2])$
[4] Source: Bloomberg Professional as of July 31, 2023
[5] Source: Bloomberg Professional as of July 31, 2023
[6] Equals $[4] \times [5]$
[7] Equals weight in the S&P 500
[8] Source: Bloomberg Professional as of July 31, 2023
[9] Equals $[7] \times [8]$
[10] Source: Bloomberg Professional, as of July 31, 2023
[11] Equals $[7] \times [10]$

BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
Quarter	Average Authorized VI Electric ROE	U.S. Govt. 30- year Treasury	Risk Premium
1992.1	12.38%	7.81%	4.58%
1992.2	11.83%	7.90%	3.93%
1992.3	12.03%	7.45%	4.59%
1992.4	12.14%	7.52%	4.62%
1993.1	11.84%	7.07%	4.76%
1993.2	11.84%	6.86%	4.78%
1993.3	11.15%	6.32%	4.84%
1993.4	11.04%	6.14%	4.91%
1994.1	11.07%	6.58%	4.49%
1994.2	11.13%	7.36%	3.77%
1994.3	12.75%	7.59%	5.16%
1994.4	11.24%	7.96%	3.28%
1995.1	11.96%	7.63%	4.33%
1995.2	11.32%	6.94%	4.37%
1995.3	11.37%	6.72%	4.65%
1995.4	11.58%	6.24%	5.35%
1996.1	11.46%	6.29%	5.17%
1996.2	11.46%	6.92%	4.54%
1996.3	10.70%	6.97%	3.73%
1996.4	11.56%	6.62%	4.94%
1997.1	11.08%	6.82%	4.26%
1997.2	11.62%	6.94%	4.68%
1997.3	12.00%	6.53%	5.47%
1997.4	11.06%	6.15%	4.91%
1998.1	11.31%	5.89%	5.43%
1998.2	12.20%	5.85%	6.36%
1998.3	11.65%	5.48%	6.17%
1998.4	12.30%	5.11%	7.19%
1999.1	10.40%	5.37%	5.03%
1999.2	10.94%	5.80%	5.14%
1999.3	10.75%	6.04%	4.71%
1999.4	11.10%	6.26%	4.84%
2000.1	11.21%	6.30%	4.92%
2000.2	11.00%	5.98%	5.02%
2000.3	11.68%	5.79%	5.89%
2000.4	12.50%	5.60%	6.91%
2001.1	11.38%	5.45%	5.93%
2001.2	11.00%	5.70%	5.30%
2001.3	10.76%	5.53%	5.23%
2001.4	11.99%	5.30%	6.69%
2002.1	10.05%	5.52%	4.53%
2002.2	11.41%	5.62%	5.79%
2002.3	11.65%	5.09%	6.56%
2002.4	11.67%	4.93%	6.63%
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	10.84%	5.34%	5.30%
2004.3	10.75%	5.11%	5.64%
2004.4	11.24%	4.93%	6.31%
2005.1	10.63%	4.71%	5.92%
2005.2	10.31%	4.47%	5.84%
2005.3	11.08%	4.42%	6.66%
2005.4	10.63%	4.65%	5.98%
2006.1	10.70%	4.63%	6.07%
2006.2	10.79%	5.14%	5.64%
2006.3	10.35%	5.00%	5.35%
2006.4	10.65%	4.74%	5.91%
2007.1	10.59%	4.80%	5.79%
2007.2	10.33%	4.99%	5.34%

BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
Quarter	Average Authorized VI Electric ROE	U.S. Govt. 30- year Treasury	Risk Premium
2007.3	10.40%	4.98%	5.45%
2007.4	10.65%	4.61%	6.04%
2008.1	10.62%	4.41%	6.21%
2008.2	10.54%	4.57%	5.96%
2008.3	10.43%	4.45%	5.98%
2008.4	10.39%	3.64%	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%	6.25%
2010.1	10.69%	4.62%	5.97%
2010.2	10.18%	4.37%	5.81%
2010.3	10.40%	3.86%	6.55%
2010.4	10.38%	4.17%	6.20%
2011.1	10.09%	4.58%	5.53%
2011.2	10.26%	4.34%	5.92%
2011.3	10.57%	3.70%	6.88%
2011.4	10.39%	3.04%	7.35%
2012.1	10.30%	3.14%	7.17%
2012.2	9.95%	2.94%	7.01%
2012.3	9.90%	2.74%	7.16%
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%	6.16%
2014.2	10.10%	3.44%	6.66%
2014.3	9.90%	3.27%	6.63%
2014.4	9.94%	2.96%	6.98%
2015.1	9.64%	2.55%	7.08%
2015.2	9.83%	2.89%	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%	3.05%	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%	6.70%
2019.2	9.58%	2.78%	6.79%
2019.3	9.53%	2.29%	7.25%
2019.4	9.89%	2.26%	7.63%
2020.1	9.72%	1.89%	7.83%
2020.2	9.58%	1.36%	8.19%
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%	2.26%	7.21%
2021.3	9.27%	1.93%	7.34%
2021.4	9.67%	1.95%	7.73%
2022.1	9.45%	2.25%	7.20%
2022.2	9.50%	3.05%	6.45%
2022.3	9.14%	3.26%	5.88%
2022.4	9.87%	3.89%	5.98%
2023.1	9.72%	3.75%	5.87%
2023.2	9.67%	3.81%	5.86%
AVERAGE	10.59%	4.54%	6.05%
MEDIAN	10.55%	4.59%	6.17%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.908174
R Square	0.824780
Adjusted R Square	0.823367
Standard Error	0.004285
Observations	126

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.010715	0.010715	583.682526	0.000000
Residual	124	0.002276	0.000018		
Total	125	0.012991			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0860	0.0011	76.56	0.00000	0.08378	0.08823	0.08378	0.08823
U.S. Govt. 30-year Treasury	(-0.5619)	0.0233	(24.16)	0.00000	(0.60790)	(0.51583)	(0.60790)	(0.51583)

	[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]	3.92%	6.40%	10.32%
Blue Chip Near-Term Projected Forecast (Q4 2023 - Q4 2024) [5]	3.90%	6.41%	10.31%
Blue Chip Long-Term Projected Forecast (2025-2029) [6]	3.80%	6.47%	10.27%
AVERAGE			10.30%

Notes:

- [1] Source: Regulatory Research Associates, rate cases through July 31, 2023
[2] Source: S&P Capital IQ Pro. quarterly bond yields are the average of each trading day in the quarter
[3] Equals Column [1] - Column [2]
[4] Source: S&P Capital IQ Pro. 30-day average as of July 31, 2023
[5] Source: Blue Chip Financial Forecasts, Vol. 42, No. 8, August 1, 2023, at 2
[6] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14.
[7] See notes [4], [5] & [6]
[8] Equals $0.086007 + (-0.561964 \times \text{Column [7]})$
[9] Equals Column [7] + Column [8]

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	3.33	1.23
Alliant Energy Corporation	LNT	13.48	2.13
Ameren Corporation	AEE	22.10	2.08
American Electric Power Company, Inc.	AEP	43.95	1.85
Avista Corporation	AVA	2.95	1.24
CMS Energy Corporation	CMS	17.62	2.57
Duke Energy Corporation	DUK	70.78	1.50
Entergy Corporation	ETR	21.14	1.62
Eversource Energy	ESV	13.64	1.44
IDACORP, Inc.	IDA	5.24	1.86
NextEra Energy, Inc.	NEE	149.35	3.46
NorthWestern Corporation	NWE	3.42	1.27
OGE Energy Corporation	OGE	7.24	1.66
Pinnacle West Capital Corporation	PNW	9.38	1.55
Portland General Electric Company	POR	4.80	1.47
Southern Company	SO	77.65	2.54
Xcel Energy Inc.	XEL	34.85	2.07
Average		29.45	1.85
Median		13.64	1.66
Otter Tail Power Corporation	OTTR	3.32	2.63

OTP

Test Year Rate Base (\$millions)	[3]	\$	661.77
Proposed Common Equity Ratio	[4]		53.50%
Common Equity (\$ millions)	[5]	\$	354.05
Implied Market Capitalization	[6]	\$	588.65

Market Capitalization of Proxy Group (median) (\$millions)	[7]	\$	13,644.96
In % of Proxy Group Market Capitalization (median)	[8]		4.30%

Kroll Cost of Capital Navigator -- Size Premium

Breakdown of Deciles 1-10	[9] Market Capitalization of Largest Company (\$ millions)	[10] Size Premium
1-Largest	2,203,381.29	-0.26%
2	31,318.51	0.45%
3	12,323.85	0.57%
4	5,918.02	0.58%
5	3,769.88	0.93%
6	2,365.08	1.16%
7	1,389.12	1.37%
8	782.38	1.18%
9	373.88	2.15%
10-Smallest	218.23	4.83%
OTP - Implied Market Capitalization	[6]	588.65
Proxy Group Market Capitalization (median)	[7]	13,644.96
Size Premium	[11]	0.73%

Notes:

- [1]-[2] S&P Capital IQ Pro, equals 30-day average as of July 31, 2023
[3] Data provided by the Company
[4] Data provided by the Company
[5] Equals [3] x [4]
[6] Equals [5] x median market-to-book ratio of proxy group
[7] Equals median market capitalization of proxy group x 1000
[8] Equals [6] / [7]
[9]-[10] Kroll Cost of Capital Navigator - Size Premium: Annual Data as of 12/31/2022
[11] Size Premium of OTP less Size Premium of Proxy Group

TRADING VOLUME ANALYSIS

Average Since	Proxy Group		OTTR		OTTR/Proxy Group	
	Daily Average Volume Traded (Millions)	Daily Average Volume Traded as % of Shares Outstanding	Daily Average Volume Traded (Millions)	Daily Average Volume Traded as % of Shares Outstanding	By Volume	By Volume As % of Shares Outs.
30-Day Avg.	2.04	0.633%	0.17	0.418%	9%	66%
90-day Avg.	1.87	0.559%	0.17	0.416%	9%	74%
180-day Avg.	1.95	0.600%	0.26	0.621%	13%	104%
2023 YTD	1.96	0.595%	0.28	0.683%	15%	115%
Jan 2022 - Present	2.01	0.595%	0.21	0.497%	10%	84%
Jan 2021 - Present	1.96	0.587%	0.17	0.412%	9%	70%
Jan 2020 - Present	2.03	0.613%	0.16	0.389%	8%	63%
Jan 2019 - Present	2.02	0.612%	0.14	0.351%	7%	57%

Notes:

[1] Source: S&P Capital IQ, as of July 31, 2023

[2] Daily Average Volumes for OTTR excludes 2/17/2023 through 2/23/2023. The addition of OTTR to the S&P SmallCap 600 caused a brief significant increase in trading volumes for OTTR between 2/17/2023 and 2/23/2023.

INSTITUTIONAL OWNERSHIP ANALYSIS

		[1]	[2]
		Institutional Ownership by Percent Shares	
Company	Ticker	Held	Rank
ALLETE, Inc.	ALE	77.26%	13
Alliant Energy Corporation	LNT	78.36%	12
Ameren Corporation	AEE	79.34%	10
American Electric Power Company, Inc.	AEP	75.87%	14
Avista Corporation	AVA	79.94%	8
CMS Energy Corporation	CMS	98.84%	3
Duke Energy Corporation	DUK	64.82%	16
Entergy Corporation	ETR	88.14%	4
Evergy, Inc.	EVRG	84.22%	6
IDACORP, Inc.	IDA	83.59%	7
NextEra Energy, Inc.	NEE	79.70%	9
NorthWestern Corporation	NWE	98.97%	2
OGE Energy Corporation	OGE	68.40%	15
Pinnacle West Capital Corporation	PNW	88.12%	5
Portland General Electric Company	POR	100.00%	1
Southern Company	SO	64.33%	17
Xcel Energy Inc.	XEL	79.23%	11
Otter Tail Corporation	OTTR	60.74%	18
Average Excl. OTTR		81.71%	

Notes:

[1] Source: S&P Capital IQ Pro, as of September 14, 2023.

[2] The proxy group companies are ranked with 1 representing the highest level of institutional ownership and 18 representing the lowest.

[3] For all % greater than 100%, Brattle manually adjusted the values to 100%.

2024-2027 CAPITAL EXPENDITURES AS A PERCENT OF 2022 NET PLANT
(\$ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	Rank
		2022	2024	2025	2026	2027	2024-27 Cap. Ex. / 2022 Net Plant	
ALLETE, Inc.	ALE		\$5.95	\$6.60	\$7.25	\$7.25		
Capital Spending per Share			59.00	60.00	61.00	61.00		
Common Shares Outstanding								
Capital Expenditures			\$361.1	\$396.0	\$442.3	\$442.3	32.60%	2
Net Plant		\$5,004.0						
Alliant Energy Corporation	LNT		\$5.80	\$5.60	\$5.40	\$5.40		
Capital Spending per Share			256.00	256.50	257.00	257.00		
Common Shares Outstanding								
Capital Expenditures			\$1,484.8	\$1,436.4	\$1,387.8	\$1,387.8	35.06%	4
Net Plant		\$16,247.0						
Ameren Corporation	AEE		\$12.55	\$12.78	\$13.00	\$13.00		
Capital Spending per Share			269.00	277.00	285.00	285.00		
Common Shares Outstanding								
Capital Expenditures			\$3,376.0	\$3,538.7	\$3,705.0	\$3,705.0	45.82%	13
Net Plant		\$31,262.0						
American Electric Power Company	AEP		\$14.15	\$14.08	\$14.00	\$14.00		
Capital Spending per Share			530.00	540.00	550.00	550.00		
Common Shares Outstanding								
Capital Expenditures			\$7,499.5	\$7,600.5	\$7,700.0	\$7,700.0	42.79%	11
Net Plant		\$71,283.0						
Avista Corporation	AVA		\$6.55	\$6.68	\$6.80	\$6.80		
Capital Spending per Share			78.50	81.75	85.00	85.00		
Common Shares Outstanding								
Capital Expenditures			\$514.2	\$545.7	\$578.0	\$578.0	40.70%	7
Net Plant		\$5,444.7						
CMS Energy Corporation	CMS		\$9.50	\$9.63	\$9.75	\$9.75		
Capital Spending per Share			296.00	297.50	300.00	300.00		
Common Shares Outstanding								
Capital Expenditures			\$2,802.5	\$2,863.4	\$2,925.0	\$2,925.0	50.70%	16
Net Plant		\$22,713.0						
Duke Energy Corporation	DUK		\$17.60	\$17.18	\$16.75	\$16.75		
Capital Spending per Share			770.00	770.00	770.00	770.00		
Common Shares Outstanding								
Capital Expenditures			\$13,552.0	\$13,224.8	\$12,887.5	\$12,887.5	47.04%	14
Net Plant		\$111,748.0						
Entergy Corporation	ETR		\$19.00	\$19.38	\$19.75	\$19.75		
Capital Spending per Share			218.00	224.00	230.00	230.00		
Common Shares Outstanding								
Capital Expenditures			\$4,142.0	\$4,340.0	\$4,542.5	\$4,542.5	41.36%	8
Net Plant		\$42,477.0						
Eversource Energy	EVRG		\$9.25	\$9.38	\$9.50	\$9.50		
Capital Spending per Share			230.00	230.00	230.00	230.00		
Common Shares Outstanding								
Capital Expenditures			\$2,127.5	\$2,156.3	\$2,185.0	\$2,185.0	39.09%	6
Net Plant		\$22,137.0						
IDACORP, Inc.	IDA		\$16.00	\$13.50	\$11.00	\$11.00		
Capital Spending per Share			51.50	52.25	53.00	53.00		
Common Shares Outstanding								
Capital Expenditures			\$824.0	\$705.4	\$583.0	\$583.0	52.10%	17
Net Plant		\$5,173.0						

2024-2027 CAPITAL EXPENDITURES AS A PERCENT OF 2022 NET PLANT
(\$ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	
		2022	2024	2025	2026	2027	2024-27 Cap. Ex. / 2022 Net Plant	Rank
NextEra Energy, Inc.	NEE							
Capital Spending per Share			\$9.50	\$9.63	\$9.75	\$9.75		
Common Shares Outstanding			2025.00	2037.50	2050.00	2050.00		
Capital Expenditures			\$19,237.5	\$19,610.9	\$19,987.5	\$19,987.5	70.97%	18
Net Plant		\$111,059.0						
NorthWestern Corporation	NWE							
Capital Spending per Share			\$7.50	\$7.00	\$6.50	\$6.50		
Common Shares Outstanding			62.00	62.00	62.00	62.00		
Capital Expenditures			\$465.0	\$434.0	\$403.0	\$403.0	30.14%	1
Net Plant		\$5,657.5						
OGE Energy Corporation	OGE							
Capital Spending per Share			\$4.75	\$4.75	\$4.75	\$4.75		
Common Shares Outstanding			200.20	200.20	200.20	200.20		
Capital Expenditures			\$951.0	\$951.0	\$951.0	\$951.0	36.07%	5
Net Plant		\$10,546.8						
Pinnacle West Capital Corporation	PNW							
Capital Spending per Share			\$15.00	\$15.00	\$15.00	\$15.00		
Common Shares Outstanding			118.00	119.00	120.00	120.00		
Capital Expenditures			\$1,770.0	\$1,785.0	\$1,800.0	\$1,800.0	42.45%	10
Net Plant		\$16,954.0						
Portland General Electric Company	POR							
Capital Spending per Share			\$10.00	\$10.00	\$10.00	\$10.00		
Common Shares Outstanding			99.50	99.75	100.00	100.00		
Capital Expenditures			\$995.0	\$997.5	\$1,000.0	\$1,000.0	47.16%	15
Net Plant		\$8,465.0						
Southern Company	SO							
Capital Spending per Share			\$7.85	\$7.68	\$7.50	\$7.50		
Common Shares Outstanding			1070.00	1070.00	1070.00	1070.00		
Capital Expenditures			\$8,399.5	\$8,212.3	\$8,025.0	\$8,025.0	34.54%	3
Net Plant		\$94,570.0						
Xcel Energy Inc.	XEL							
Capital Spending per Share			\$9.25	\$9.38	\$9.50	\$9.50		
Common Shares Outstanding			553.00	556.50	560.00	560.00		
Capital Expenditures			\$5,115.3	\$5,217.2	\$5,320.0	\$5,320.0	43.46%	12
Net Plant		\$48,253.0						
Otter Tail Power Company	OTP							
Capital Expenditures [7]			\$247.00	\$208.00	\$239.00	\$194.00	42.33%	9
Net Plant [8]		\$2,098.0						
OTP CapEx Total (2024 - 2027)							\$888.0	
OTP CapEx Annual Average							\$222.0	
Proxy Group Median							42.45%	
OTP as % Proxy Group Median							1.00	

Notes:

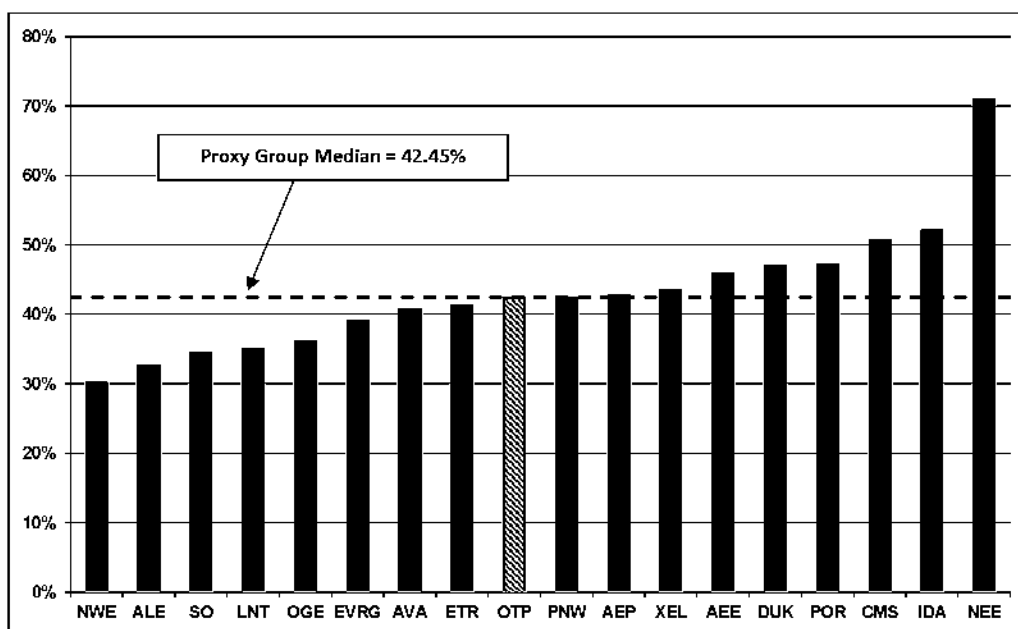
[1] - [5] Source: Value Line, dated May 12, June 9, July 21, 2023.

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

[7] Source: Company Provided Data

[8] Source: Company Provided Data

2024-2027 CAPITAL EXPENDITURES AS A PERCENT OF 2022 NET PLANT



Projected CAPEX / 2022 Net Plant

Rank	Company	2024-2027
1	NorthWestern Corporation	NWE 30.14%
2	ALLETE, Inc.	ALE 32.60%
3	Southern Company	SO 34.54%
4	Alliant Energy Corporation	LNT 35.06%
5	OGE Energy Corporation	OGE 36.07%
6	Eversource Energy, Inc.	EVRG 39.09%
7	Avista Corporation	AVA 40.70%
8	Entergy Corporation	ETR 41.36%
9	Otter Tail Power Company	OTP 42.33%
10	Pinnacle West Capital Corporation	PNW 42.45%
11	American Electric Power Company	AEP 42.79%
12	Xcel Energy Inc.	XEL 43.46%
13	Ameren Corporation	AEE 45.82%
14	Duke Energy Corporation	DUK 47.04%
15	Portland General Electric Company	POR 47.16%
16	CMS Energy Corporation	CMS 50.70%
17	IDACORP, Inc.	IDA 52.10%
18	NextEra Energy, Inc.	NEE 70.97%
Proxy Group Median		42.45%
OTP / Proxy Group		1.00

Notes:

Source: Exhibit ____ (AEB-1), Schedule 12, pages 1-2 col. [6]

COMPARISON OF OTTER TAIL POWER COMPANY AND PROXY GROUP COMPANIES
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Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	Test Year	[1]	[2]	[3]	[4]	[5]	
					Non-Volumetric Rate Design					
					Revenue Decoupling	Formula-based rates	Straight Fixed-Variable Rate Design	Non-Volumetric Rate Design		
ALLETE, Inc.	ALLETE (Minnesota Power)	Minnesota	Electric	Fully Forecast	No	No	No	No	No	
Alliant Energy Corporation	Interstate Power & Light Co.	Iowa	Electric	Historical	No	No	No	No	No	
	Interstate Power & Light Co.	Iowa	Gas	Historical	No	No	No	No	No	
Ameren Corporation	Wisconsin Power & Light Co.	Wisconsin	Electric	Fully Forecast	No	No	No	No	No	
	Wisconsin Power & Light Co.	Wisconsin	Gas	Fully Forecast	No	No	No	No	No	
	Ameren Illinois Co.	Illinois	Electric	Historical	Partial	Yes	No	Yes	Yes	
	Ameren Illinois Co.	Illinois	Gas	Fully Forecast	Partial	No	No	Yes	Yes	
	Union Electric Co.	Missouri	Electric	Historical	Partial	No	No	Yes	Yes	
	Union Electric Co.	Missouri	Gas	Historical	Partial	No	No	Yes	Yes	
American Electric Power Company, Inc.	Southwestern Electric Power Co.	Arkansas	Electric	Historical	Partial	Yes	No	Yes	Yes	
	Indiana Michigan Power Co.	Indiana	Electric	Fully Forecast	Full	No	No	Yes	Yes	
	Kentucky Power Co.	Kentucky	Electric	Fully Forecast	Partial	No	No	Yes	Yes	
	Southwestern Electric Power Co.	Louisiana	Electric	Historical	Partial	Yes	No	Yes	Yes	
	Indiana Michigan Power Co.	Michigan	Electric	Fully Forecast	Partial	No	No	Yes	Yes	
	Ohio Power Co.	Ohio	Electric	Partially Forecast	Partial	No	No	Yes	Yes	
	Public Service Co. of Oklahoma	Oklahoma	Electric	Historical	Partial	No	No	Yes	Yes	
	Kingsport Power Co.	Tennessee	Electric	Fully Forecast	No	No	No	No	No	
	AEP Texas Inc.	Texas	Electric	Historical	No	No	No	No	No	
	Southwestern Electric Power Co.	Texas	Electric	Historical	No	No	No	No	No	
	Appalachian Power Co.	Virginia	Electric	Historical	No	No	No	No	No	
	Appalachian Power Co./Wheeling Power Co.	West Virginia	Electric	Historical	No	No	No	No	No	
	Avista Corporation	Alaska Electric Light & Power Co.	Alaska	Electric	Historical	No	No	No	No	No
	Avista Corp.	Idaho	Electric	Historical	Full	No	No	No	Yes	Yes
Idaho		Gas	Historical	Full	No	No	No	Yes	Yes	
Oregon		Gas	Fully Forecast	Partial	No	No	No	Yes	Yes	
Washington		Electric	Historical	Full	No	No	No	Yes	Yes	
Washington		Gas	Historical	Full	No	No	No	Yes	Yes	
CMS Energy Corporation	Consumers Energy Co.	Michigan	Electric	Fully Forecast	No	No	No	No	No	
	Consumers Energy Co.	Michigan	Gas	Fully Forecast	Partial	No	No	Yes	Yes	
Duke Energy Corporation	Duke Energy Florida LLC	Florida	Electric	Fully Forecast	No	No	No	No	No	
	Duke Energy Indiana LLC	Indiana	Electric	Historical	Partial	No	No	Yes	Yes	
	Duke Energy Kentucky Inc.	Kentucky	Electric	Fully Forecast	Partial	No	No	Yes	Yes	
	Duke Energy Kentucky Inc.	Kentucky	Gas	Fully Forecast	Partial	No	No	Yes	Yes	
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	North Carolina	Electric	Historical	No	No	No	No	No	
	Piedmont Natural Gas Co. Inc.	North Carolina	Gas	Historical	Full	No	No	Yes	Yes	
	Duke Energy Ohio Inc.	Ohio	Electric	Partially Forecast	Partial	No	No	Yes	Yes	
	Duke Energy Ohio Inc.	Ohio	Gas	Partially Forecast	No	No	Yes	Yes	Yes	
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	South Carolina	Electric	Historical	No	No	No	No	No	
	Piedmont Natural Gas Co. Inc.	South Carolina	Gas	Historical	Partial	No	No	Yes	Yes	
	Piedmont Natural Gas Co. Inc.	Tennessee	Gas	Fully Forecast	Partial	No	No	Yes	Yes	
	Entergy Corporation	Entergy Arkansas LLC	Arkansas	Electric	Fully Forecast	Partial	Yes	No	Yes	Yes
	Entergy New Orleans LLC	Louisiana-NOCC	Electric	Partially Forecast	No	Yes	No	Yes	Yes	
	Entergy New Orleans LLC	Louisiana-NOCC	Gas	Partially Forecast	No	Yes	No	Yes	Yes	
Entergy Louisiana LLC	Louisiana	Electric	Historical	Partial	Yes	No	Yes	Yes		
Entergy Louisiana LLC	Louisiana	Gas	Historical	No	Yes	No	Yes	Yes		
Entergy Mississippi LLC	Mississippi	Electric	Fully Forecast	Partial	Yes	No	Yes	Yes		
Entergy Texas Inc.	Texas	Electric	Historical	No	No	No	No	No	No	
Eversys, Inc.	Eversys Kansas Central Inc	Kansas	Electric	Historical	Partial	No	No	Yes	Yes	
	Eversys Metro Inc.	Kansas	Electric	Historical	No	No	No	No	No	
	Eversys Metro Inc	Missouri	Electric	Historical	Partial	No	No	Yes	Yes	
	Eversys Missouri West Inc.	Missouri	Electric	Historical	Partial	No	No	Yes	Yes	

COMPARISON OF OTTER TAIL POWER COMPANY AND PROXY GROUP COMPANIES
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Case No. PU-23-____
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Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	[6]	[7]	[8] Capital Cost Recovery	[9]	[10]
				Traditional Generation	Renewables/Non-Traditional Generation	Delivery Infrastructure	Environmental Compliance	Capital Cost Recovery
ALLETE, Inc.	ALLETE (Minnesota Power)	Minnesota	Electric	No	Yes	No	No	Yes
Alliant Energy Corporation	Interstate Power & Light Co.	Iowa	Electric	No	Yes	No	Yes	Yes
	Interstate Power & Light Co.	Iowa	Gas	No	No	No	No	No
	Wisconsin Power & Light Co.	Wisconsin	Electric	No	No	No	No	No
	Wisconsin Power & Light Co.	Wisconsin	Gas	No	No	No	No	No
Ameren Corporation	Ameren Illinois Co.	Illinois	Electric	No	Yes	No	Yes	Yes
	Ameren Illinois Co.	Illinois	Gas	No	No	Yes	Yes	Yes
	Union Electric Co.	Missouri	Electric	No	Yes	Yes	No	Yes
	Union Electric Co.	Missouri	Gas	No	No	Yes	No	Yes
American Electric Power Company, Inc.	Southwestern Electric Power Co.	Arkansas	Electric	Yes	No	No	Yes	Yes
	Indiana Michigan Power Co.	Indiana	Electric	No	Yes	Yes	Yes	Yes
	Kentucky Power Co.	Kentucky	Electric	No	No	Yes	No	Yes
	Southwestern Electric Power Co.	Louisiana	Electric	No	No	No	No	No
	Indiana Michigan Power Co.	Michigan	Electric	No	Yes	No	No	Yes
	Ohio Power Co.	Ohio	Electric	No	Yes	Yes	No	Yes
	Public Service Co. of Oklahoma	Oklahoma	Electric	No	Yes	Yes	No	Yes
	Kingsport Power Co.	Tennessee	Electric	No	No	No	No	No
	AEP Texas Inc.	Texas	Electric	No	No	Yes	No	Yes
	Southwestern Electric Power Co.	Texas	Electric	No	No	Yes	No	Yes
	Appalachian Power Co.	Virginia	Electric	Yes	No	No	Yes	Yes
	Appalachian Power Co./Wheeling Power Co.	West Virginia	Electric	No	No	No	Yes	Yes
	Alaska Electric Light & Power Co.	Alaska	Electric	No	No	No	No	No
Avista Corporation	Avista Corp.	Idaho	Electric	No	No	No	No	No
	Avista Corp.	Idaho	Gas	No	No	No	No	No
	Avista Corp.	Oregon	Gas	No	No	No	No	No
	Avista Corp.	Washington	Electric	No	No	No	No	No
	Avista Corp.	Washington	Gas	No	No	No	No	No
	Avista Corp.	Washington	Gas	No	No	No	No	No
CMS Energy Corporation	Consumers Energy Co.	Michigan	Electric	No	Yes	No	No	Yes
	Consumers Energy Co.	Michigan	Gas	No	No	No	No	No
Duke Energy Corporation	Duke Energy Florida LLC	Florida	Electric	Yes	Yes	No	Yes	Yes
	Duke Energy Indiana LLC	Indiana	Electric	No	Yes	Yes	Yes	Yes
	Duke Energy Kentucky Inc.	Kentucky	Electric	No	No	No	Yes	Yes
	Duke Energy Kentucky Inc.	Kentucky	Gas	No	No	Yes	No	Yes
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	North Carolina	Electric	No	Yes	No	Yes	Yes
	Piedmont Natural Gas Co. Inc.	North Carolina	Gas	No	No	Yes	No	Yes
	Duke Energy Ohio Inc.	Ohio	Electric	No	Yes	Yes	No	Yes
	Duke Energy Ohio Inc.	Ohio	Gas	No	No	Yes	Yes	Yes
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	South Carolina	Electric	No	Yes	No	Yes	Yes
	Piedmont Natural Gas Co. Inc.	South Carolina	Gas	No	No	No	No	No
	Piedmont Natural Gas Co. Inc.	Tennessee	Gas	No	No	Yes	No	Yes
Entergy Corporation	Entergy Arkansas LLC	Arkansas	Electric	Yes	Yes	Yes	No	Yes
	Entergy New Orleans LLC	Louisiana-NOCC	Electric	No	Yes	No	Yes	Yes
	Entergy New Orleans LLC	Louisiana-NOCC	Gas	No	No	No	No	No
	Entergy Louisiana LLC	Louisiana	Electric	No	No	No	Yes	Yes
	Entergy Louisiana LLC	Louisiana	Gas	No	No	Yes	No	Yes
	Entergy Mississippi LLC	Mississippi	Electric	No	No	No	No	No
	Entergy Texas Inc.	Texas	Electric	Yes	No	Yes	No	Yes
	Entergy Texas Inc.	Texas	Gas	No	No	Yes	No	Yes
Eversource Energy	Eversource Kansas Central Inc.	Kansas	Electric	No	Yes	No	Yes	Yes
	Eversource Metro Inc.	Kansas	Electric	No	No	Yes	No	Yes
	Eversource Metro Inc.	Missouri	Electric	No	No	Yes	No	Yes
	Eversource Missouri West Inc.	Missouri	Electric	No	Yes	Yes	No	Yes

COMPARISON OF OTTER TAIL POWER COMPANY AND PROXY GROUP COMPANIES
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Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	Test Year	[1]	[2]	[3]	[4]	[5]
					Non-Volumetric Rate Design				
					Revenue Decoupling	Formula-based rates	Straight Fixed-Variable Rate Design	Non-Volumetric Rate Design	
IDACORP, Inc.	Idaho Power Co.	Idaho	Electric	Partially Forecast		Full	No	No	Yes
	Idaho Power Co.	Oregon	Electric	Partially Forecast		No	No	No	No
NextEra Energy, Inc.	Florida Power & Light Co.	Florida	Electric	Fully Forecast		No	No	No	No
	Pivotal Utility Holdings Inc.	Florida	Gas	Fully Forecast		No	No	No	No
NorthWestern Corporation	Lone Star Transmission LLC	Texas	Electric	Historical		No	No	No	No
	NorthWestern Corporation	Montana	Electric	Historical		No	No	No	No
	NorthWestern Corporation	Montana	Gas	Historical		No	No	No	No
	NorthWestern Corporation	Nebraska	Gas	Historical		No	No	No	No
	NorthWestern Corporation	South Dakota	Electric	Historical		No	No	No	No
OGE Energy Corporation	NorthWestern Corporation	South Dakota	Gas	Historical		No	No	No	No
	Oldahoma Gas & Electric Co.	Arkansas	Electric	Historical		Partial	No	Yes	Yes
Pinnacle West Capital Corporation	Oldahoma Gas & Electric Co.	Oldahoma	Electric	Historical		Partial	No	Yes	Yes
	Arizona Public Service Co.	Arizona	Electric	Historical		Partial	No	No	Yes
Portland General Electric Company	Portland General Electric Co.	Oregon	Electric	Fully Forecast		No	No	No	No
Southern Company	Alabama Power Co.	Alabama	Electric	Historical		No	Yes	No	Yes
	Atlanta Gas Light Co.	Georgia	Electric	Fully Forecast		No	Yes	No	Yes
	Georgia Power Co.	Georgia	Gas	Fully Forecast		No	Yes	Yes	Yes
	Northern Illinois Gas Co.	Illinois	Gas	Fully Forecast		Partial	No	No	Yes
	Mississippi Power Co.	Mississippi	Electric	Fully Forecast		Partial	Yes	No	Yes
	Chattanooga Gas Co.	Tennessee	Gas	Historical		Partial	Yes	No	Yes
	Virginia Natural Gas Inc.	Virginia	Gas	Historical		Partial	No	No	Yes
	Public Service Co. of Colorado	Colorado	Electric	Historical		Partial	No	No	Yes
	Public Service Co. of Colorado	Colorado	Gas	Historical		Partial	No	No	Yes
	Northern States Power Co.-Minnesota	Minnesota	Electric	Fully Forecast		Partial	Yes	No	Yes
	Northern States Power Co.-Minnesota	Minnesota	Gas	Fully Forecast		No	No	No	No
	Southwestern Public Service Co.	New Mexico	Electric	Historical		No	No	No	No
	Northern States Power Co.-Minnesota	North Dakota	Electric	Fully Forecast		No	No	No	No
	Northern States Power Co.-Minnesota	North Dakota	Gas	Fully Forecast		No	No	Yes	Yes
	Northern States Power Co.-Minnesota	South Dakota	Electric	Historical		Partial	No	No	Yes
	Southwestern Public Service Co.	Texas	Electric	Historical		No	No	No	No
	Xcel Energy Inc.	Northern States Power Co.-Wisconsin	Wisconsin	Electric	Fully Forecast		No	No	No
Northern States Power Co.-Wisconsin		Wisconsin	Gas	Fully Forecast		No	No	No	No
Non-Volumetric Rate Design									
Proxy Group Average			Fully Forecast	30				Yes	50
			Partially Forecast	7				No	33
			Historical	46					
			Forecast	44.58%				NVRD	60.24%
OTP [11]					Fully Forecasted	No	No	No	No

Notes:

[1] Sources: Regulatory Research Associates, effective as of July 31, 2023

[2] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022. Operating subsidiaries not covered in this report were excluded from this exhibit

[3] Sources: Company Form 10-K, Company Tariffs, S&P Capital IQ Pro

[4] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[5] Equals IF(AND([2]=No,[3]=No,[4]=No), No, Yes)

[6] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[7] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[8] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[9] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[10] Equals IF(AND([6]=No,[7]=No,[8]=No,[9]=No), No, Yes)

[11] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

COMPARISON OF OTTER TAIL POWER COMPANY AND PROXY GROUP COMPANIES
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Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	[6]	[7]	[8]	[9]	[10]
				Traditional Generation	Renewables/Non-Traditional Generation	Capital Cost Recovery Delivery Infrastructure	Environmental Compliance	Capital Cost Recovery
IDACORP, Inc.	Idaho Power Co.	Idaho	Electric	No	No	No	No	No
	Idaho Power Co.	Oregon	Electric	No	No	No	No	No
NextEra Energy, Inc.	Florida Power & Light Co.	Florida	Electric	Yes	Yes	No	Yes	Yes
	Pivotal Utility Holdings Inc.	Florida	Gas	No	No	Yes	Yes	Yes
	Lone Star Transmission LLC	Texas	Electric	No	No	Yes	No	Yes
NorthWestern Corporation	NorthWestern Corporation	Montana	Electric	No	No	No	No	No
	NorthWestern Corporation	Montana	Gas	No	No	No	No	No
	NorthWestern Corporation	Nebraska	Gas	No	No	No	No	No
	NorthWestern Corporation	South Dakota	Electric	No	No	No	No	No
	NorthWestern Corporation	South Dakota	Gas	No	No	No	No	No
OGE Energy Corporation	Oklahoma Gas & Electric Co.	Arkansas	Electric	No	No	Yes	No	Yes
	Oklahoma Gas & Electric Co.	Oklahoma	Electric	No	No	Yes	Yes	Yes
Pinnacle West Capital Corporation	Arizona Public Service Co.	Arizona	Electric	No	Yes	No	Yes	Yes
Portland General Electric Company	Portland General Electric Co.	Oregon	Electric	Yes	Yes	No	Yes	Yes
Southern Company	Alabama Power Co.	Alabama	Electric	Yes	Yes	No	Yes	Yes
	Atlanta Gas Light Co.	Georgia	Electric	No	No	Yes	Yes	Yes
	Georgia Power Co.	Georgia	Gas	Yes	No	No	Yes	Yes
	Northern Illinois Gas Co.	Illinois	Gas	No	No	Yes	Yes	Yes
	Mississippi Power Co.	Mississippi	Electric	No	No	No	Yes	Yes
	Chattanooga Gas Co.	Tennessee	Gas	No	No	No	No	No
	Virginia Natural Gas Inc.	Virginia	Gas	No	No	Yes	No	Yes
Xcel Energy Inc.	Public Service Co. of Colorado	Colorado	Electric	No	Yes	No	No	Yes
	Public Service Co. of Colorado	Colorado	Gas	No	No	Yes	No	Yes
	Northern States Power Co.-Minnesota	Minnesota	Electric	No	Yes	No	Yes	Yes
	Northern States Power Co.-Minnesota	Minnesota	Gas	No	No	Yes	No	Yes
	Southwestern Public Service Co.	New Mexico	Electric	No	Yes	No	No	Yes
	Northern States Power Co.-Minnesota	North Dakota	Electric	No	Yes	Yes	No	Yes
	Northern States Power Co.-Minnesota	North Dakota	Gas	No	No	No	No	No
	Northern States Power Co.-Minnesota	South Dakota	Electric	Yes	No	Yes	Yes	Yes
	Southwestern Public Service Co.	Texas	Electric	No	No	No	No	No
	Northern States Power Co.-Wisconsin	Wisconsin	Electric	No	No	No	No	No
	Northern States Power Co.-Wisconsin	Wisconsin	Gas	No	No	No	No	No
								CCRM
Proxy Group Average								Yes 56 No 27
								CCRM 87.47%
OTP [11]				Yes	Yes	Yes	Yes	Yes

Notes:

[1] Sources: Regulatory Research Associates, effective as of July 31, 2021.

[2] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022. Operating subsidiaries not cov

[3] Sources: Company Form 10-K, Company Tariffs, S&P Capital IQ Pro

[4] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[5] Equals IF(AND([2]=No, [3]=No, [4]=No), No, Yes)

[6] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[7] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[8] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[9] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

[10] Equals IF(AND([6]=No, [7]=No, [8]=No, [9]=No), No, Yes)

[11] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022.

FLOTATION COST ADJUSTMENT

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Company	Ticker	Date [i]	Shares Issued (000)	Offering Price	Under-writing Discount [ii]	Offering Expense (\$000)	Net Proceeds Per Share	Total Flotation Costs (\$000)	Gross Equity Issue Before Costs (\$000)	Net Proceeds (\$000)	Flotation Cost Percentage
Otter Tail Corporation - Secondary	OTTR	2004-05	3,075.00	25.45	0.95	391.45	24.37	3,312.70	78,258.75	74,946.05	4.23%
Otter Tail Corporation - Secondary	OTTR	2008	5,175.00	30.00	1.09	807.19	28.76	6,435.00	155,250.00	148,815.00	4.14%
Otter Tail Corporation - ESPP	OTTR	2004	66.96	19.31	-	-	19.31	0.00	1,293.00	1,293.00	0.00%
Otter Tail Corporation - ESPP	OTTR	2009	62.45	19.18	-	-	19.18	0.00	1,197.79	1,197.79	0.00%
Otter Tail Corporation - ESPP	OTTR	2014	39.22	26.75	-	-	26.75	0.00	1,049.14	1,049.14	0.00%
Otter Tail Corporation - ESPP	OTTR	2015	42.25	25.93	-	-	25.93	0.00	1,095.54	1,095.54	0.00%
Otter Tail Corporation - ESPP	OTTR	2016	53.88	27.68	-	1.16	27.66	1.16	1,491.40	1,490.24	0.08%
Otter Tail Corporation - ESPP	OTTR	2017	5.28	39.85	-	0.37	39.78	0.37	210.41	210.04	0.17%
Otter Tail Corporation - ESPP	OTTR	2019	15.45	44.3	-	0.84	44.25	0.84	684.44	683.60	0.12%
Otter Tail Corporation - ESPP	OTTR	2020	24.37	35.9	-	1.54	35.84	1.54	874.78	873.24	0.18%
Otter Tail Corporation - DRIP	OTTR	2004	223.17	19.3	-	-	19.30	0.00	4,307.18	4,307.18	0.00%
Otter Tail Corporation - DRIP	OTTR	2009	233.94	19.21	-	5.88	19.18	5.88	4,493.99	4,488.11	0.13%
Otter Tail Corporation - DRIP	OTTR	2014	288.05	26.76	-	-	26.76	0.00	7,708.22	7,708.22	0.00%
Otter Tail Corporation - DRIP	OTTR	2015	330.38	25.93	-	56.55	25.76	56.55	8,566.75	8,510.20	0.66%
Otter Tail Corporation - DRIP	OTTR	2016	302.52	36.68	-	32.97	36.57	32.97	11,096.43	11,063.46	0.30%
Otter Tail Corporation - DRIP	OTTR	2017	107.29	38.58	-	17.55	38.42	17.55	4,139.25	4,121.70	0.42%
Otter Tail Corporation - DRIP	OTTR	2019	51.35	49.58	-	7.13	49.44	7.13	2,545.93	2,538.80	0.28%
Otter Tail Corporation - DRIP	OTTR	2020	190.68	42.03	-	20.93	41.92	20.93	8,014.92	7,993.99	0.26%
Otter Tail Corporation - ATM	OTTR	2014	519.64	29.51	0.59	780.62	27.42	1,087.36	15,334.58	14,247.21	7.09%
Otter Tail Corporation - ATM	OTTR	2015	133.20	28.42	0.42	339.16	25.45	395.65	3,795.54	3,389.89	10.45%
Otter Tail Corporation - ATM	OTTR	2016	1,014.12	32.77	-	561.55	32.22	561.55	33,235.73	32,674.18	1.69%
Otter Tail Corporation - ATM	OTTR	2019	372.00	50.96	1.55	237.22	48.77	814.35	18,957.30	18,142.95	4.30%
Otter Tail Corporation - ATM	OTTR	2020	843.48	42.89	-	452.23	42.36	452.23	36,178.36	35,726.13	1.25%
Total								\$ 13,203.76	\$ 389,769.43	\$ 386,565.67	
WEIGHTED AVERAGE FLOTATION COSTS										3.30%	

[i] Offering Completion Date

[ii] Underwriting discount is calculated as the market price minus the offering price when not explicitly given in the prospectus.

The flotation cost adjustment is derived by dividing the dividend yield by $1 - F$ (where F = flotation costs expressed in percentage terms), or by 1.0000, 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:

$$k = \frac{D \times (1 + 0.5g)}{P \times (1 - F)} + g$$

		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Expected Dividend Yield Adjusted for Flotation Costs	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Earnings Growth	Cost of Equity: Mean Growth Rate	Cost of Equity Adjusted for Flotation Costs
ALLETE, Inc.	ALE	\$2.71	\$58.12	4.66%	4.84%	5.00%	6.00%	8.10%	8.10%	7.40%	12.24%	12.40%
Alliant Energy Corporation	LNT	\$1.81	\$53.11	3.41%	3.52%	3.64%	6.50%	7.00%	6.50%	6.67%	10.19%	10.31%
Ameren Corporation	AEE	\$2.52	\$84.17	2.99%	3.09%	3.19%	6.50%	5.90%	6.40%	6.27%	9.35%	9.46%
American Electric Power Company, Inc.	AEP	\$3.32	\$85.37	3.89%	4.00%	4.13%	6.00%	5.20%	5.60%	5.60%	9.60%	9.73%
Avista Corporation	AVA	\$1.84	\$38.97	4.72%	4.87%	5.04%	6.50%	6.30%	6.30%	6.37%	11.24%	11.40%
CMS Energy Corporation	CMS	\$1.95	\$59.91	3.25%	3.37%	3.49%	6.50%	7.80%	7.80%	7.37%	10.74%	10.86%
Duke Energy Corporation	DUK	\$4.02	\$91.84	4.38%	4.50%	4.65%	5.00%	5.74%	6.10%	5.61%	10.11%	10.27%
Entergy Corporation	ETR	\$4.28	\$99.98	4.28%	4.37%	4.52%	0.50%	6.60%	5.70%	4.27%	8.64%	8.79%
Eversource Energy, Inc.	EVER	\$2.45	\$59.41	4.12%	4.23%	4.37%	7.50%	2.67%	5.20%	5.12%	9.35%	9.50%
IDACORP, Inc.	IDA	\$3.16	\$102.78	3.07%	3.14%	3.25%	5.00%	3.70%	3.70%	4.13%	7.27%	7.38%
NextEra Energy, Inc.	NEE	\$1.87	\$73.81	2.53%	2.65%	2.74%	9.50%	8.80%	8.40%	8.90%	11.55%	11.64%
NorthWestern Corporation	NWE	\$2.56	\$57.12	4.48%	4.58%	4.74%	3.50%	4.50%	5.20%	4.40%	8.98%	9.14%
OGE Energy Corporation	OGE	\$1.66	\$35.97	4.60%	4.72%	4.88%	6.50%	negative	3.70%	5.10%	9.82%	9.98%
Pinnacle West Capital Corporation	PNW	\$3.46	\$81.98	4.22%	4.33%	4.47%	2.50%	6.10%	6.30%	4.97%	9.29%	9.44%
Portland General Electric Company	POR	\$1.90	\$47.35	4.01%	4.13%	4.27%	5.00%	5.90%	6.00%	5.63%	9.76%	9.90%
Southern Company	SO	\$2.80	\$71.21	3.93%	4.05%	4.19%	6.50%	7.30%	4.00%	5.93%	9.98%	10.12%
Xcel Energy Inc.	XEL	\$2.08	\$63.31	3.29%	3.39%	3.50%	6.00%	6.15%	6.30%	6.15%	9.54%	9.65%
Mean											9.86%	10.00%
Median											9.76%	9.90%
Flotation Cost Adjustment (Mean)												0.14%
Flotation Cost Adjustment (Median)												0.14%

Notes:

- [1] - [5] Source: Company-provided information
[6] Equals [9]/[2]
[7] Equals [5] + ([4] x [2])
[8] Equals [2] x [3]
[9] Equals [8] - [7]
[10] Equals [7] / [8]
[11] Bloomberg Professional
[12] Bloomberg Professional, equals 30-day average as of July 31, 2023
[13] Equals [11] / [12]
[14] Equals [13] x (1 + 0.5 x [19])
[15] Equals [14] / (1 - Flotation Cost)
[16] Value Line
[17] Yahoo! Finance
[18] Zacks Investment Research
[19] Equals Average of [16], [17], [18]
[20] Equals [14] + [19]
[21] Equals [15] + [19]
[22] Equals [21] (Mean) - [20] (Mean)
[23] Equals [21] (Median) - [20] (Median)

CAPITAL STRUCTURE ANALYSIS

Proxy Group Company	Ticker	Most Recent 8 Quarters (2021Q3 - 2023Q2)				Total Capitalization
		Common Equity Ratio	Long-Term Debt Ratio	Preferred Equity Ratio	Short-Term Debt Ratio	
ALLETE, Inc.	ALE	58.57%	41.35%	0.00%	0.08%	100%
Alliant Energy Corporation	LNT	51.57%	47.23%	0.19%	1.01%	100%
Ameren Corporation	AEE	52.18%	45.41%	0.56%	1.85%	100%
American Electric Power Company, Inc.	AEP	46.98%	51.11%	0.00%	1.91%	100%
Avista Corporation	AVA	47.50%	48.00%	0.00%	4.50%	100%
CMS Energy Corporation	CMS	51.32%	47.96%	0.19%	0.53%	100%
Duke Energy Corporation	DUK	51.78%	46.30%	0.00%	1.92%	100%
Entergy Corporation	ETR	47.30%	52.59%	0.10%	0.00%	100%
Eversource Energy, Inc.	EVER	57.55%	36.65%	0.00%	5.79%	100%
IDACORP, Inc.	IDA	53.66%	46.33%	0.00%	0.00%	100%
NextEra Energy, Inc.	NEE	60.41%	38.16%	0.00%	1.43%	100%
NorthWestern Corporation	NWE	49.29%	50.71%	0.00%	0.00%	100%
OGE Energy Corporation	OGE	53.40%	45.52%	0.00%	1.09%	100%
Pinnacle West Capital Corporation	PNW	49.76%	47.83%	0.00%	2.41%	100%
Portland General Electric Company	POR	45.30%	54.23%	0.00%	0.46%	100%
Southern Company	SO	54.52%	43.38%	0.23%	1.87%	100%
Xcel Energy Inc.	XEL	54.00%	45.20%	0.00%	0.80%	100%
Average		52.06%	46.35%	0.08%	1.51%	
Median		51.78%	46.33%	0.00%	1.09%	
Maximum		60.41%	54.23%	0.56%	5.79%	
Minimum		45.30%	36.65%	0.00%	0.00%	

Notes:

- [1] Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of the operating subsidiaries.
[2] Electric and Natural Gas operating subsidiaries with data listed as N/A from S&P Capital IQ have been excluded from the analysis.

DOCKET NO. 53719

APPLICATION OF ENTERGY	§	PUBLIC UTILITY COMMISSION
TEXAS, INC. FOR AUTHORITY TO	§	
CHANGE RATES	§	OF TEXAS

DIRECT TESTIMONY

OF

ANN E. BULKLEY

ON BEHALF OF

ENTERGY TEXAS, INC.

JULY 2022

ENTERGY TEXAS, INC.
DIRECT TESTIMONY OF ANN E. BULKLEY
2022 RATE CASE

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EXHIBITS

Exhibit AEB-1	Resume and Testimony Listing of Ann E. Bulkley
Exhibit AEB-2	Summary of Results
Exhibit AEB-3	Constant Growth Discounted Cash Flow Model
Exhibit AEB-4	Capital Asset Pricing Model
Exhibit AEB-5	CAPM – Long-Term Beta
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Exhibit AEB-7	Risk Premium Approach
Exhibit AEB-8	Capital Expenditures Analysis
Exhibit AEB-9	Regulatory Risk Analysis
Exhibit AEB-10	RRA Jurisdictional Rankings
Exhibit AEB-11	S&P Jurisdictional Rankings
Exhibit AEB-12	Capital Structure Analysis

1 **I. WITNESS INTRODUCTION AND QUALIFICATIONS**

2 Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

3 A. My name is Ann E. Bulkley. I am a Principal at The Brattle Group (“Brattle”). My
4 business address is One Beacon Street, Suite 2600, Boston, Massachusetts 02108.

6 Q2. WHAT IS YOUR POSITION WITH THE BRATTLE GROUP?

7 A. I am employed by Brattle as a Principal.

9 Q3. ON WHOSE BEHALF ARE YOU SUBMITTING THIS DIRECT TESTIMONY?

10 A. I am submitting this direct testimony before the Public Utility Commission of Texas
11 (“Commission”) on behalf of Entergy Texas, Inc. (“ETI” or the “Company”), a
12 wholly owned subsidiary of Entergy Corporation (“Entergy”). Entergy
13 Corporation is a registered holding company that owns several electric and natural
14 gas utility operating companies.¹

16 Q4. PLEASE DESCRIBE YOUR BACKGROUND AND PROFESSIONAL
17 EXPERIENCE IN THE ENERGY AND UTILITY INDUSTRIES.

18 A. I hold a Bachelor’s degree in Economics and Finance from Simmons College and
19 a Master’s degree in Economics from Boston University, with over 25 years of
20 experience consulting to the energy industry. I have advised numerous energy and
21 utility clients on a wide range of financial and economic issues with primary

¹ Entergy Corporation, together with its subsidiaries, engages in the production and distribution of electricity in the United States.

1 concentrations in valuation and utility rate matters. Many of these assignments
2 have included the determination of the cost of capital for valuation and ratemaking
3 purposes. My resume and a summary of testimony that I have filed in other
4 proceedings are included as Exhibit AEB-1 to this testimony.

5
6 **II. PURPOSE AND OVERVIEW OF TESTIMONY**

7 Q5. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

8 A. The purpose of my direct testimony is to present evidence and provide a
9 recommendation regarding the appropriate Return on Equity (“ROE”)² for ETT’s
10 electric utility operations and to provide an assessment of its proposed capital
11 structure to be used for ratemaking purposes. A summary of my ROE analyses and
12 results is provided in Exhibit AEB-2. My analysis and recommendations are
13 supported by the data presented in Exhibits AEB-3 through AEB-12, which were
14 prepared by me or under my direction.

15
16 Q6. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT LED
17 TO YOUR ROE RECOMMENDATION.

18 A. As discussed in more detail in Section VII, I applied the Constant Growth form of
19 the Discounted Cash Flow (“DCF”) model, the Capital Asset Pricing Model
20 (“CAPM”), the Empirical CAPM and the Bond Yield Plus Risk Premium approach.
21 My recommendation also takes into consideration: (1) ETT’s capital expenditure

² Throughout my direct testimony, I interchangeably use the terms “ROE” and “cost of equity.”

1 requirements; (2) the regulatory environment in which ETI operates; (3) ETI's
2 adjustment mechanisms; (4) the Company's customer concentration; and (5) the
3 superior management performance of ETI. While I did not make any specific
4 adjustments to my ROE estimates for any of these factors, I did take them into
5 consideration in aggregate when determining where ETI's ROE falls within the
6 range of analytical results.

7 Finally, I considered ETI's proposed capital structure as compared to the
8 capital structures of the proxy companies.³

9
10 Q7. HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY ORGANIZED?

11 A. Section III provides a summary of my analyses and conclusions. Section IV
12 reviews the regulatory guidelines pertinent to the development of the cost of capital.
13 Section V discusses current and prospective capital market conditions and the effect
14 of those conditions on ETI's cost of equity. Section VI explains my selection of a
15 proxy group of electric utilities. Section VII describes my analyses and the
16 analytical basis for the recommendation of the appropriate ROE for ETI. Section
17 VIII provides a discussion of specific business and financial risks that have a direct
18 bearing on the ROE to be authorized for ETI in this case. Section IX discusses
19 ETI's capital structure as compared with the capital structures of the utility
20 operating company subsidiaries of the proxy group companies. Section X presents
21 my conclusions and recommendations.

³ The selection and purpose of developing a group of comparable companies is discussed in detail in Section VI of my direct testimony.

1 **III. SUMMARY OF ANALYSES AND CONCLUSIONS**

2 Q8. WHAT IS YOUR RECOMMENDED ROE FOR ETI?

3 A. Based on the analytical results in Figure 1 below, I believe a range from
4 9.95 percent to 11.10 percent is reasonable. The Company is requesting a return of
5 10.80 percent, which is based on a 10.50 percent rate of return resulting from the
6 analytical model results, and a 30 basis point adder for performance. The latter is
7 primarily addressed in the direct testimony of Jess K. Totten. This recommendation
8 considers the range of results for the proxy group companies, the relative business,
9 financial, and regulatory risks of ETI's electric operations in Texas as compared to
10 the proxy group, and current capital market conditions and balances the interests of
11 customers and shareholders.

12
13 Q9. PLEASE SUMMARIZE THE KEY FACTORS CONSIDERED IN YOUR
14 ANALYSES AND UPON WHICH YOU BASE YOUR RECOMMENDED ROE.

15 A. My analyses and recommendations considered the following:

- 16 • The United States (U.S.) Supreme Court's *Hope* and *Bluefield* decisions,⁴
17 which established the standards for determining a fair and reasonable
18 authorized ROE, including consistency of the authorized return with other
19 businesses having similar risk, adequacy of the return to ensure access to
20 capital and support credit quality, and the necessity for the end result to lead
21 to just and reasonable rates.
- 22 • The required ROE should be a forward-looking estimate; therefore, the
23 analyses supporting my recommendation rely on forward-looking inputs
24 and assumptions (e.g., forecasted growth rates in the DCF model, projected
25 interest rates and a forward-looking market risk premium in the CAPM).

⁴ *Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm'n of West Virginia*, 262 U.S. 679, 692-93 (1923); *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

- 1 • The effect of current and prospective capital market conditions on the ROE
2 estimation models and on investors' return requirements.
- 3 • ETI's business risks relative to the proxy group companies and the
4 implications of those risks in arriving at the appropriate ROE.

5 Q10. PLEASE EXPLAIN HOW YOU CONSIDERED THOSE FACTORS.

6 A. I relied on the results of several analytical approaches to estimate ETI's cost of
7 equity based on a proxy group of publicly-traded companies. As shown in Figure 1,
8 those ROE estimation models produce a wide range of results. My conclusion
9 about where within that range of results ETI's ROE should be placed is based on
10 ETI's business and financial risk relative to the proxy group. Although the
11 companies in my proxy group are generally comparable to ETI, each company is
12 unique and no two companies have the exact same business and financial risk
13 profiles. Accordingly, I selected a proxy group with similar, but not identical risk
14 profiles, and I adjusted the results of my analysis either upward or downward within
15 the reasonable range of results to account for any residual differences in risk.

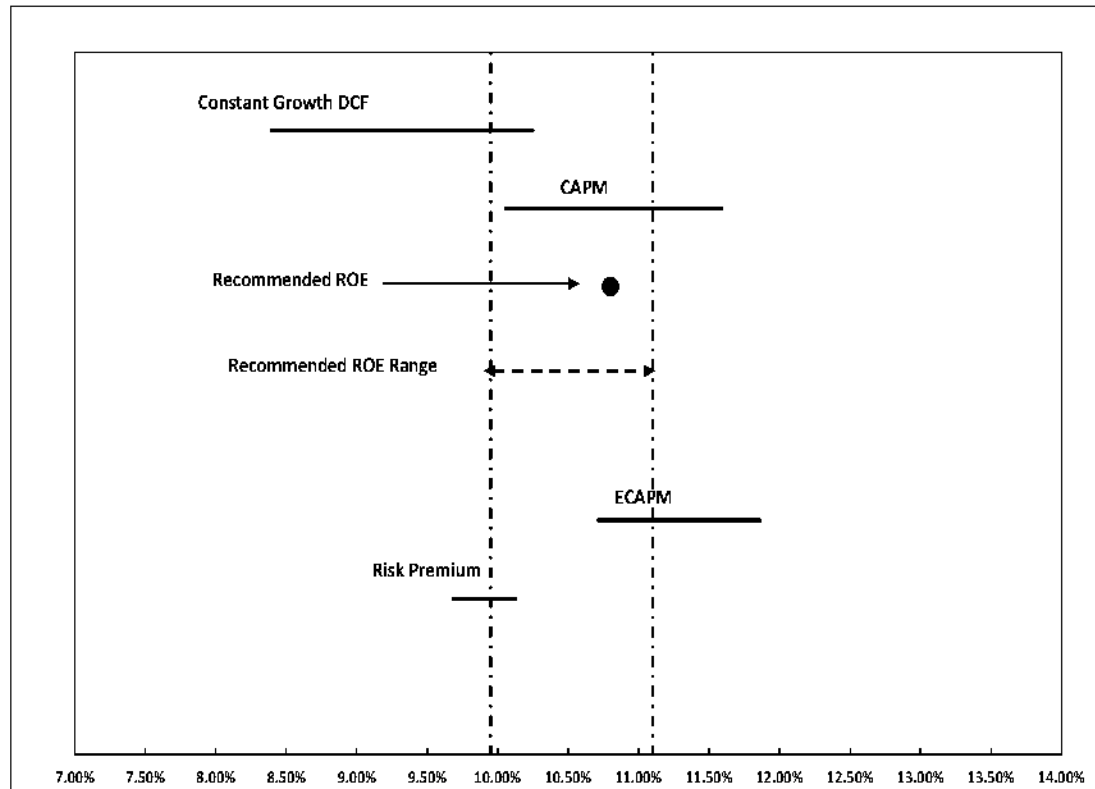
16

17 Q11. PLEASE SUMMARIZE THE ROE ESTIMATION MODELS THAT YOU
18 CONSIDERED TO ESTABLISH THE RANGE OF ROES FOR ETI'S TEXAS
19 OPERATIONS.

20 A. I considered the results of the Constant Growth DCF model, the CAPM, the
21 ECAPM and the Bond Yield Risk Premium methodology. The results of these
22 analyses are summarized in Figure 1 below.

1

Figure 1: Summary of Analytical Results



2

3

4

5

6

As shown in Figure 1, the range of results produced by the Constant Growth DCF estimation model is relatively wide, particularly in relation to the results of the other methodologies. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results varies considerably across methodologies.

7

8

9

10

11

Furthermore, as shown in Exhibit AEB-3, the median results of the Constant Growth analyses using the lowest earnings growth rates for each of the proxy group companies produce results that are below recently authorized ROEs for electric utilities in the U.S. that are relying on traditional original cost ratemaking. Therefore, I conclude that these results do not provide a sufficient risk premium to

1 compensate equity investors for the residual risks of ownership, including the risk
2 that they have the lowest claim on the assets and income of ETI.

3 Although I have concerns about the results produced by the DCF models,
4 my ROE recommendation considers the range between the median and median-
5 high results of the DCF models. In addition, I consider the results of the forward-
6 looking CAPM, ECAPM and a Bond Yield Plus Risk Premium analysis. I also
7 consider company-specific risk factors, and current and prospective capital market
8 conditions.

9 As I will discuss, expected changes in capital market conditions will affect
10 the results of the ROE estimation models, making it important to review results
11 based on historical or current data recognizing that these conditions may not
12 represent the forward-looking cost of equity. The assumptions in each of the
13 models are affected differently. In determining the appropriate forward-looking
14 ROE, it is important to recognize these limitations in the static models and consider
15 how the results may differ during the period over which the rates in this proceeding
16 will be in effect. For example, dividend yields in the DCF model are affected by
17 the recent historically high stock prices. As the Federal Reserve normalizes
18 monetary policy, it is reasonable to expect that utility stocks will underperform the
19 broader market. Lower stock prices increase dividend yields on utility stocks and,
20 all else equal, would increase the ROE resulting from the DCF model. Further, the
21 Federal Reserve's normalization of monetary policy is likely to affect the bond
22 yields used in the CAPM. Therefore, it would be reasonable to consider scenarios
23 of this model that reflect changes in bond yields.

1 Q12. PLEASE SUMMARIZE THE ANALYSIS YOU CONDUCTED IN
2 DETERMINING THAT ETI'S REQUESTED CAPITAL STRUCTURE IS
3 REASONABLE AND APPROPRIATE.

4 A. Based on the analysis presented in Section IX of my direct testimony, I conclude
5 that ETI's proposed common equity ratio of 51.21 percent, is reasonable. To make
6 this determination, I reviewed the capital structures of the utility operating
7 subsidiaries of the proxy companies. As shown in Exhibit AEB-12, the results of
8 that analysis demonstrate that the equity ratios for the utility operating companies
9 held by the proxy group range from 47.22 percent to 61.49 percent with a median
10 of 53.68 percent. ETI's proposed common equity ratio of 51.21 percent is well
11 within the range established for the utility operating subsidiaries of the proxy group
12 companies and is reasonable.

13
14 **IV. REGULATORY GUIDELINES**

15 Q13. PLEASE DESCRIBE THE PRINCIPLES THAT GUIDE THE
16 ESTABLISHMENT OF THE COST OF CAPITAL FOR A REGULATED
17 UTILITY.

18 A. The U.S. Supreme Court's precedent-setting *Hope* and *Bluefield* cases established
19 the standards for determining the fairness or reasonableness of a utility's authorized
20 ROE. According to the *Bluefield* decision:

21 A public utility is entitled to such rates as will permit it to earn a
22 return upon the value of the property which it employs for the
23 convenience of the public equal to that generally being made at the
24 same time and in the same general part of the country on investments
25 in other business undertakings which are attended by corresponding

1 risks and uncertainties... The return should be reasonably sufficient
2 to assure confidence in the financial soundness of the utility, and
3 should be adequate, under efficient and economical management, to
4 maintain and support its credit, and enable it to raise the money
5 necessary for the proper discharge of its public duties.⁵

6 The *Hope* decision supports the principles outlined in the *Bluefield* decision.

7 From the investor or company point of view it is important that there
8 be enough revenue not only for operating expenses but also for the
9 capital costs of the business. These include service on the debt and
10 dividends on the stock... By that standard, the return to the equity
11 holder should be commensurate with the returns on investments in
12 other enterprises having corresponding risks. That return, moreover,
13 should be sufficient to assure confidence in the financial integrity of
14 the enterprise, so as to maintain its credit and attract capital.⁶

15 Q14. HAS THE COMMISSION PROVIDED SIMILAR GUIDANCE IN
16 ESTABLISHING THE APPROPRIATE RETURN ON COMMON EQUITY?

17 A. Yes. The Commission follows the precedents of the *Hope* and *Bluefield* cases and
18 acknowledges that utility investors are entitled to a reasonable opportunity to earn
19 a reasonable return. The Commission's obligations for establishing a reasonable
20 return are described in the Public Utility Regulatory Act.⁷

21 In establishing an electric utility's rates, the regulatory authority
22 shall establish the utility's overall revenues at an amount that will
23 permit the utility a reasonable opportunity to earn a reasonable return
24 on the utility's invested capital used and useful in providing service
25 to the public in excess of the utility's reasonable and necessary
26 operating expenses.⁸

⁵ *Bluefield*, 262 U.S. at 679, 692-93.

⁶ *Hope*, 320 U.S. at 591, 603.

⁷ Tex. Util. Code Ann. §§ 11.001-66.016.

⁸ Tex. Util. Code Ann. § 36.051.

1 Q15. WHY IS IT IMPORTANT FOR A UTILITY TO BE ALLOWED THE
2 OPPORTUNITY TO EARN A RETURN THAT IS ADEQUATE TO ATTRACT
3 CAPITAL AT REASONABLE TERMS?

4 A. An ROE that is adequate to attract capital at reasonable terms enables a utility to
5 continue to provide safe, reliable service while maintaining its financial integrity.
6 To the extent that the utility is provided the opportunity to earn its market-based
7 cost of capital, neither customers nor shareholders are disadvantaged.

8
9 Q16. IS A UTILITY'S ABILITY TO ATTRACT CAPITAL ALSO AFFECTED BY
10 THE ROES THAT ARE AUTHORIZED FOR OTHER UTILITIES?

11 A. Yes. Utilities compete directly for capital with other investments of similar risk,
12 which include other water, natural gas and electric utilities. Therefore, the ROE
13 awarded to a utility sends an important signal to investors regarding whether there
14 is regulatory support for that utility's financial integrity, dividends, growth, and fair
15 compensation for business and financial risk. The cost of capital represents an
16 opportunity cost to investors. If higher returns are available for other investments
17 of comparable risk, investors have an incentive to direct their capital to those
18 investments. Thus, an authorized ROE for the Company that is significantly below
19 authorized ROEs for other utilities can inhibit ETI's ability to attract capital for
20 investment.

1 Q17. WHAT ARE YOUR CONCLUSIONS REGARDING REGULATORY
2 GUIDELINES?

3 A. The ratemaking process is premised on the principle that, in order for investors and
4 companies to commit the capital needed to provide safe and reliable utility services,
5 a utility must have the opportunity to recover the return of, and the market-required
6 return on, its invested capital. Because utility operations are capital-intensive,
7 regulatory decisions should enable the utility to attract capital at reasonable terms;
8 doing so balances the long-term interests of the utility and its customers.

9 The financial community carefully monitors the current and expected
10 financial condition of utility companies and the regulatory framework in which they
11 operate. In that respect, the regulatory framework is one of the most important
12 factors in both debt and equity investors' assessments of risk. The Commission's
13 order in this proceeding, therefore, should establish rates that provide ETI with the
14 opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable
15 terms; (2) sufficient to ensure its financial integrity; and (3) commensurate with
16 returns on investments in enterprises with similar risk. To the extent that ETI is
17 authorized the opportunity to earn its market-based cost of capital, the proper
18 balance is achieved between customers' and shareholders' interests.

19

20 **V. CAPITAL MARKET CONDITIONS**

21 Q18. WHY IS IT IMPORTANT TO ANALYZE CAPITAL MARKET CONDITIONS?

22 A. The ROE estimation models rely on market data that are either specific to the proxy
23 group, in the case of the DCF model, or to the expectations of market risk, in the

1 case of the CAPM. The results of the ROE estimation models can be affected by
2 prevailing market conditions at the time the analysis is performed. While the ROE
3 that is established in a rate proceeding is intended to be forward-looking, current
4 market data and projections, specifically stock prices, dividends, growth rates and
5 interest rates, are utilized in the ROE estimation models to determine the subject
6 company's required ROE.

7 As is discussed in the remainder of this section, current market conditions
8 will likely have a material effect on the results of the ROE estimation models. As
9 a result, it is important to consider the effect of these conditions on the results of
10 ROE estimation models when determining the appropriate range and recommended
11 ROE for a future period. If investors do not expect current market conditions to be
12 sustained, it is possible that the ROE estimation models will not provide an accurate
13 estimate of investors' required return during the period rates established in this
14 proceeding will be in effect. Therefore, it is important to consider projected market
15 data to estimate the return for that forward-looking period.

16
17 Q19. WHAT FACTORS ARE AFFECTING THE COST OF EQUITY FOR
18 REGULATED UTILITIES IN THE CURRENT AND PROSPECTIVE CAPITAL
19 MARKETS?

20 A. The cost of equity for regulated utility companies is being affected by several
21 factors in the current and prospective capital markets, including: 1) persistently
22 high inflation, 2) changes in monetary policy, 3) rising interest rates, and 4) volatile
23 market conditions. These factors affect the market data and projections used in the

1 ROE estimation models. In this section, I discuss each of these factors and how it
2 affects the models used to estimate the cost of equity for regulated utilities.

3

4 Q20. WHAT EFFECT DO CURRENT AND PROSPECTIVE MARKET
5 CONDITIONS HAVE ON THE COST OF EQUITY FOR ETI?

6 A. The combination of high inflation, the Federal Reserve's changes in monetary
7 policy, and the dramatic shifts in market conditions all contribute to an expectation
8 of increased market risk and an increase in the return on equity required by
9 investors. It is essential that these factors be considered in determining an
10 appropriate forward-looking ROE. Inflation is currently at the highest level
11 experienced in approximately 40 years. Interest rates, which have increased
12 significantly from pandemic-related lows in 2020 are expected to continue to
13 increase in direct response to the Federal Reserve's use of monetary policy to
14 address inflation. Since there is a strong historical inverse correlation between
15 interest rates and the share prices of utility stocks (share prices of utility stocks
16 typically fall when interest rates rise), it is reasonable to expect that investors'
17 required ROE for utility companies will also continue to increase. Therefore, ROE
18 estimates based solely on current market conditions will understate the ROE
19 required by investors during the future period that the Company's rates determined
20 in this proceeding will be in effect.

1 **A. The Effect of Monetary Policy on Market Dynamics**

2 Q21. PLEASE SUMMARIZE THE MONETARY POLICY ACTIONS OF THE
3 FEDERAL RESERVE IN RESPONSE TO THE ECONOMIC EFFECTS OF
4 COVID-19.

5 A. In response to the COVID-19 pandemic, the Federal Reserve:

- 6 (1) decreased the Federal Funds rate twice in March 2020, resulting in a target
7 range of 0.00 percent to 0.25 percent;
- 8 (2) increased its holdings of both Treasury and mortgaged-back securities;
- 9 (3) started expansive programs to support credit to large employers – the
10 Primary Market Corporate Credit Facility to provide liquidity for new
11 issuances of corporate bonds; and the Secondary Market Corporate Credit
12 Facility to provide liquidity for outstanding corporate debt issuances; and
- 13 (4) supported the flow of credit to consumers and businesses through the Term
14 Asset-Backed Securities Loan Facility.

15 In addition, Congress also passed the Coronavirus Aid, Relief, and Economic
16 Security (“CARES”) Act in March 2020, the Consolidated Appropriations Act,
17 2021 in December 2020, and the American Rescue Plan Act in March 2021, which
18 included \$2.2 trillion, \$900 billion, and \$1.9 trillion, respectively, in fiscal stimulus
19 aimed at also mitigating the economic effects of COVID-19. These expansive
20 monetary and fiscal programs mitigated the economic effects of the COVID-19
21 pandemic and provided additional support as the economy recovers from the
22 COVID-19 recession.

1 Q22. HOW DID THE ACCOMMODATIVE MONETARY AND FISCAL POLICY
2 AFFECT THE U.S. ECONOMY?

3 A. The expansive monetary and fiscal policy programs resulted in a strong economic
4 recovery in 2021 from the COVID-19 induced recessionary period in 2020. In fact,
5 according to the Bureau of Economic Analysis, real GDP grew by 5.7 percent in
6 2021 driven primarily by a 7.9 percent increase in personal consumption
7 expenditures.⁹ Moreover, the unemployment rate decreased from a high of
8 14.7 percent in April 2020 to 3.9 percent as of December 2021.¹⁰ Finally, as I will
9 discuss in more detail below, the economic recovery has also brought about a
10 substantial increase in inflation, with the year-over-year (“YOY”) change in the
11 Consumer Price Index (“CPI”) at 8.22 percent in April 2022.¹¹

12
13 Q23. IS THE FEDERAL RESERVE NORMALIZING MONETARY POLICY?

14 A. Yes. The dramatic increase in inflation has prompted the Federal Reserve to pursue
15 an aggressive normalization of monetary policy, removing the accommodative
16 policy programs used to mitigate the economic effects of COVID-19. As of the
17 May 4, 2022 meeting, the Federal Reserve has taken the following actions:

⁹ Bureau of Economic Analysis, News Release, “Gross Domestic Product, Fourth Quarter and Year 2021 (2nd estimate)” at 8 (Feb. 24, 2022).

¹⁰ Bureau of Labor Statistics, “Labor Force Statistics from the Current Population Survey.” Available at <https://data.bls.gov/timeseries/LNS14000000>.

¹¹ Bureau of Labor Statistics, U.S. Department of Labor, The Economics Daily, “Food prices up 10.8 percent for year ended April 2022; largest 12-month increase since November 1980” (May 17, 2022). Available at <https://www.bls.gov/opub/ted/2022/food-prices-up-10-8-percent-for-year-ended-april-2022-largest-12-month-increase-since-november-1980.html>.