

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

IN THE MATTER OF THE APPLICATION)
OF OKLAHOMA GAS AND ELECTRIC)
COMPANY FOR AN ORDER OF THE)
COMMISSION AUTHORIZING APPLICANT)
TO MODIFY ITS RATES, CHARGES, AND)
TARIFFS FOR RETAIL ELECTRIC)
SERVICE IN OKLAHOMA)

CAUSE NO. PUD 202100164



Direct Testimony
of
Ann E. Bulkley
on behalf of
Oklahoma Gas and Electric Company

December 30, 2021

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PREPARED AT THE REQUEST OF COUNSEL

EXHIBITS

<u>Exhibit</u>	<u>Description</u>
Exhibit AEB-1	Resume and Testimony Listing of Ann E. Bulkley
Exhibit AEB-2	Summary of Results
Exhibit AEB-3	Proxy Group Selection
Exhibit AEB-4	Constant Growth DCF Model
Exhibit AEB-5	Capital Asset Pricing Model / Empirical Capital Asset Pricing Model
Exhibit AEB-6	Long-term Average Beta
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Exhibit AEB-8	Bond Yield Plus Risk Premium Approach
Exhibit AEB-9	Flotation Cost
Exhibit AEB-10	Capital Expenditures Analysis
Exhibit AEB-11	Regulatory Risk Analysis
Exhibit AEB-12	RRA Regulatory Ranking Analysis
Exhibit AEB-13	S&P Credit Supportive Analysis
Exhibit AEB-14	Capital Structure Analysis

I. INTRODUCTION

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

2 A. My name is Ann E. Bulkley. My business address is 293 Boston Post Road West, Suite
3 500, Marlborough, Massachusetts 01752. I am employed by Concentric Energy Advisors,
4 Inc. (“Concentric”) as a Senior Vice President.

5 **Q. On whose behalf are you submitting this Prepared Direct Testimony?**

6 A. I am submitting this testimony before the Oklahoma Corporation Commission
7 (“Commission”) on behalf of Oklahoma Gas and Electric Company (“OG&E” or the
8 “Company”) which is a wholly-owned subsidiary of OGE Energy Corp.

9 **Q. Please describe your education and experience.**

10 A. I hold a Bachelor’s degree in Economics and Finance from Simmons College and a
11 Master’s degree in Economics from Boston University, with more than 20 years of
12 experience consulting to the energy industry. I have advised numerous energy and utility
13 clients on a wide range of financial and economic issues with primary concentrations in
14 valuation and utility rate matters. Many of these assignments have included the
15 determination of the cost of capital for valuation and ratemaking purposes. I have included
16 my resume and a summary of testimony that I have filed in other proceedings as Exhibit
17 AEB-1.

18 **Q. Please describe Concentric’s activities in energy and utility engagements.**

19 A. Concentric provides financial and economic advisory services to many and various energy
20 and utility clients across North America. Our regulatory, economic, and market analysis
21 services include utility ratemaking and regulatory advisory services; energy market

1 assessments; market entry and exit analysis; corporate and business unit strategy
2 development; demand forecasting; resource planning; and energy contract negotiations.
3 Our financial advisory activities include buy- and sell-side merger, acquisition, and
4 divestiture assignments; due diligence and valuation assignments; project and corporate
5 finance services; and transaction support services. In addition, we provide litigation support
6 services on a wide range of financial and economic issues on behalf of clients throughout
7 North America.

8 **Q. Please describe the purpose of your testimony.**

9 A. The purpose of my testimony is to present evidence and provide a recommendation
10 regarding the appropriate Return on Equity (“ROE”)¹ in this proceeding and to provide an
11 assessment of the capital structure to be used for ratemaking purposes.

12 **Q. Was your testimony, including associated exhibits, prepared by you or under your**
13 **control and direction?**

14 A. Yes. My analyses and recommendations are supported by the data presented in Exhibit
15 AEB-2 through Exhibit AEB-14, which were prepared by me or under my direction.

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

17 A. Section II provides a summary of my analyses and conclusions. Section III reviews the
18 regulatory guidelines pertinent to the development of the cost of capital. Section IV
19 discusses current and projected capital market conditions and the effect of those conditions
20 on OG&E’s cost of equity. Section V explains my selection of a proxy group of electric

¹ Throughout my Prepared Direct Testimony, I interchangeably use the terms “ROE” and “cost of equity”.

1 utilities. Section VI describes my analyses and the analytical basis for the recommendation
2 of the appropriate ROE for OG&E. Section VII provides a discussion of specific
3 regulatory, business, and financial risks that have a direct bearing on the ROE to be
4 authorized for the Company in this case. Section VIII assesses the Company's proposed
5 capital structure as compared to the proxy group. Section IX presents my conclusions and
6 recommendations for the market cost of equity.

II. SUMMARY OF ANALYSES AND CONCLUSIONS

7 **Q. Please provide a brief overview of the analyses that led to your ROE recommendation.**

8 A. As discussed in more detail in Section VI, in developing my ROE recommendation, I
9 applied the Constant Growth form of the Discounted Cash Flow ("DCF") model, the
10 Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model
11 ("ECAPM"), and the Bond Yield Plus Risk Premium Approach. I also considered several
12 additional risk factors that affect the Company's required ROE, including: (1) the
13 Company's capital expenditure requirements; (2) the regulatory risks including cost
14 recovery, inflation and authorized ROEs; and (3) Flotation Costs. In addition, I consider
15 the risk associated with capital attraction in a market where there is increased demand for
16 capital to advance climate initiatives, replace aging infrastructure and maintain safe and
17 reliable service. Finally, I review the Winter Storm Uri event in the context of the
18 importance of the financial health of the Company. While I did not make any specific
19 adjustments to my ROE estimates for any of these factors, I did take them into
20 consideration in aggregate when determining where the Company's Cost of Equity falls

1 within the range of analytical results. Finally, I considered the Company's proposed capital
2 structure as compared to the capital structures of the proxy companies.²

3 **Q. Please summarize the key factors considered in your analyses and upon which you**
4 **base your recommended ROE.**

5 A. In developing my recommended ROE for OG&E, I considered the following:

- 6 • The *Hope* and *Bluefield* decisions³ that established the standards for determining a
7 fair and reasonable allowed ROE, including consistency of the allowed return with
8 the returns of other businesses having similar risk, adequacy of the return to provide
9 access to capital and support credit quality, and the requirement that the result lead
10 to just and reasonable rates.
- 11 • The effect of current and projected capital market conditions on investors' return
12 requirements.
- 13 • The results of several analytical approaches that provide estimates of the
14 Company's cost of equity.
- 15 • The Company's regulatory, business, and financial risks relative to the proxy group
16 of comparable companies, and the implications of those risks.

17 **Q. Please explain how you considered those factors.**

18 A. After considering these factors and the results of my analyses, I relied on the range of
19 results produced by the Constant Growth DCF model, the CAPM and ECAPM and a Bond
20 Yield Plus Risk Premium analysis. As shown in Figure 1, these ROE estimation models
21 produce a wide range of results. My conclusion as to where, within that range of results,

² The selection and purpose of developing a group of comparable companies will be discussed in detail in Section V of my Direct Testimony.

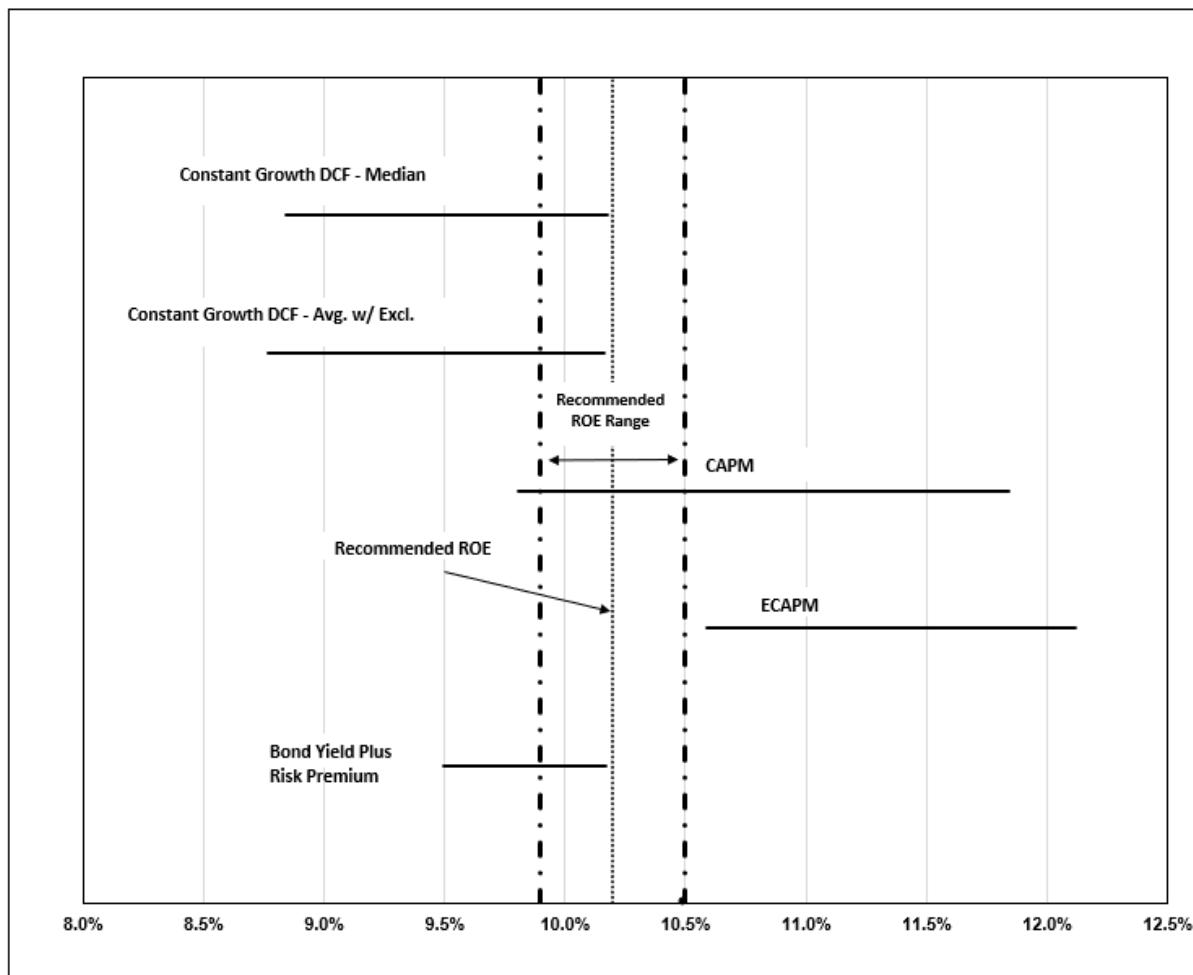
³ Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944); Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia, 262 U.S. 679 (1923).

1 OG&E's cost of equity falls is based on my assessment of market conditions, and the
2 Company's business and financial risk relative to the proxy group. Although the
3 companies in my proxy group are generally comparable to OG&E, each company is
4 unique, and no two companies have the exact same business and financial risk profiles.
5 Accordingly, I considered the Company's business and financial risk in the aggregate in
6 comparison to that of the proxy group companies when determining where the Company's
7 ROE falls within the reasonable range of analytical results to account for any residual
8 differences in risk.

9 **Q. Please summarize the results of the ROE estimation models that you considered to**
10 **establish the range of ROEs for OG&E.**

11 A. Figure 1 summarizes the range of results produced by the Constant Growth DCF, CAPM,
12 ECAPM, and Bond Yield Plus Risk Premium analysis.

Figure 1: Summary of Cost of Equity Analytical Results⁴



As shown in Figure 1 (and in Exhibit AEB-2), the range of results produced by the ROE estimation models is wide. 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. As a result, my ROE recommendation considers the range of results of the Constant Growth DCF model, as well as the results of the CAPM, ECAPM, and Bond Yield Plus Risk Premium analyses. My ROE recommendation also

⁴ Constant Growth DCF analysis - Average w/ Exclusions represents the DCF results excluding the results for individual companies that did not meet the minimum threshold of 7 percent.

1 considers OG&E's company-specific risk factors and current and prospective capital
2 market conditions.

3 **Q. What is your recommended ROE for OG&E?**

4 A. Based on the analytical results presented in Figure 1, as well as the level of regulatory,
5 business, and financial risk faced by OG&E relative to the proxy group, I believe a range
6 from 9.90 to 10.50 percent is reasonable. This recommendation reflects the range of results
7 for the proxy group companies, the relative risk of OG&E as compared to the proxy group,
8 and current capital market conditions. Within that range, an ROE of 10.20 percent is
9 reasonable.

10 **Q. Please summarize the analysis you conducted in determining that OG&E's requested**
11 **capital structure is reasonable and appropriate.**

12 A. Based on the analysis presented in Section VIII of my testimony, I conclude that OG&E's
13 proposed 53.37 percent common equity is reasonable. To determine if OG&E's requested
14 capital structure was reasonable, I reviewed the capital structures of the utility subsidiaries
15 of the proxy companies. As shown in Exhibit AEB-14, the results of that analysis
16 demonstrate that the average equity ratios for the utility operating companies of the proxy
17 group range from 46.97 percent to 60.85 percent, with an average of 53.21 percent.
18 Comparing the recommended equity ratio to the proxy group demonstrates that the
19 Company's requested equity ratio is below the average equity ratio for the utility operating
20 subsidiaries of the proxy group companies. Further, the Company's proposed equity ratio
21 is reasonable considering the negative effect of the Tax Cuts and Jobs Act ("TCJA") and
22 COVID-19 on the cash flows and credit metrics of regulated utilities.

III. REGULATORY GUIDELINES

1 **Q. Please describe the guiding principles to be used in establishing the cost of capital for**
2 **a regulated utility.**

3 A. The United States Supreme Court’s precedent-setting *Hope and Bluefield* cases established
4 the standards for determining the fairness or reasonableness of a utility’s allowed ROE.
5 Among the standards established by the Court in those cases are: (1) consistency with other
6 businesses having similar or comparable risks; (2) adequacy of the return to support credit
7 quality and access to capital; and (3) the principle that the result reached, as opposed to the
8 methodology employed, is the controlling factor in arriving at just and reasonable rates.⁵

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

11 A. Yes. In its Order in Cause No. PUD 200600285, the Commission cited the Oklahoma
12 Supreme Court (*Southwestern Public Service Company v. State of Oklahoma*, 637 P2d 92)
13 which stated, in relevant part:

14 “The constitutional safeguard afforded to a utility is summarized in
15 *Alabama Public Service Com. v. South Cent. Bell Tel. Co.*, (Ala., 348 So.2d
16 443) as follows: ‘The just compensation safeguarded to a utility by the 14th
17 Am. to the U.S. Const. is a reasonable return on the value of the property
18 used at the time that is being used for the public service, and rates not
19 sufficient to yield that return are confiscatory. The determination of a fair
20 rate of return is governed by the following legal principles: (1) it cannot be
21 developed by a rule of thumb calculation, but must be determined in the
22 exercise of a fair, enlightened and independent judgment in light of all
23 relevant facts; (2) it must be equal to that generally being earned by others
24 in the same general locality in business undertakings attended by
25 corresponding risks, and uncertainties; (3) it must be sufficient to insure the
26 investor’s confidence in the financial soundness of the utility enterprise and

⁵ *Hope*, 320 U.S. 591 (1944); *Bluefield*, 262 U.S. 679 (1923).

1 enough to maintain and support its credit so that it will be able to raise the
2 money necessary to improve and expand its service to the discharge of all
3 its public duties; (4) in determining the reasonableness of its rates it is
4 necessary to consider effect of the rates imposed in the light of the utility's
5 present situation and in light of its requirements and opportunities.”⁶

6 Based on these standards, the authorized ROE should provide the Company with a
7 fair and reasonable return and should provide access to capital on reasonable terms in a
8 variety of market conditions.

9 **Q. Why is it important for a utility to be allowed the opportunity to earn an ROE that is**
10 **adequate to attract capital at reasonable terms?**

11 A. An ROE that is adequate to attract capital at reasonable terms enables the Company to
12 continue provide safe, reliable electric service while maintaining its financial integrity. To
13 the extent the Company is provided the opportunity to earn its market-based cost of capital,
14 neither customers nor shareholders are disadvantaged. While it is important to provide
15 access to capital on reasonable terms during all market conditions, the importance of
16 financial strength becomes more apparent in periods of market distress or in extreme
17 circumstances such as the Extreme Winter Weather event, when utilities needed to access
18 the capital markets to continue to provide safe and reliable service.

19 **Q. Is a utility's ability to attract capital also affected by the ROEs that are authorized**
20 **for other utilities?**

21 A. Yes. OG&E competes directly for capital with other investments of similar risk, which
22 include other vertically integrated electric utilities. The ROE awarded to a utility sends an

⁶ Order No. 545168, Cause No. PUD 200600285, Application of Public Service Company of Oklahoma, an Oklahoma Corporation, for an Adjustment in its Rates and Charges for Electric Service in the State of Oklahoma, issued October 9, 2007, at 134.

1 important signal to investors regarding whether there is regulatory support for financial
2 integrity, dividends, growth, and fair compensation for business and financial risk. The
3 cost of capital represents an opportunity cost to investors. If higher returns are available
4 for other investments of comparable risk, investors have an incentive to direct their capital
5 to those investments. Thus, an authorized ROE that is not commensurate with authorized
6 ROEs for other vertically integrated electric utilities can inhibit OG&E's ability to attract
7 capital for investment in Oklahoma.

8 **Q. What are your conclusions regarding regulatory guidelines?**

9 A. The ratemaking process is premised on the principle that a utility must have the opportunity
10 to recover the return of, and the market-required return on, its invested capital. Because
11 utility operations are capital-intensive, regulatory decisions should enable the utility to
12 attract capital at reasonable terms under a variety of economic and financial market
13 conditions; doing so balances the long-term interests of the utility and its customers.

14 The financial community carefully monitors the current and expected financial
15 condition of utility companies and the regulatory frameworks in which they operate. In
16 that respect, the regulatory framework is one of the most important factors in both debt and
17 equity investors' assessments of risk. The Commission's order in this proceeding,
18 therefore, should establish rates that provide the Company with the opportunity to earn an
19 ROE that is: (1) adequate to attract capital at reasonable terms under a variety of economic
20 and financial market conditions; (2) sufficient to ensure good financial management and
21 firm integrity; and (3) commensurate with returns on investments in enterprises with
22 similar risk. Providing OG&E the opportunity to earn its market-based cost of capital

1 supports the financial integrity of the Company, which is in the interest of both customers
2 and shareholders.

3 **Q. Does the fact that the Company is owned by OGE Energy Corp., a publicly-traded**
4 **company, affect your analysis?**

5 A. No, it does not. In this proceeding, consistent with stand-alone ratemaking principles, it is
6 appropriate to establish the cost of equity for OG&E, not its publicly-traded parent OGE
7 Energy Corp. More importantly however, it is appropriate to establish a return on equity
8 and capital structure that provide OG&E the ability to attract capital on reasonable terms,
9 on a stand-alone basis, and within the OGE Energy Corp.'s system.

IV. CAPITAL MARKET CONDITIONS

10 **Q. Why is it important to analyze capital market conditions?**

11 A. The ROE estimation models rely on market data that are either specific to the proxy group,
12 in the case of the DCF model, or to the expectations of market risk, in the case of the
13 CAPM. The results of the ROE estimation models can be affected by prevailing market
14 conditions at the time the analysis is performed. While the ROE that is established in a
15 rate proceeding is intended to be forward-looking, the analyst uses current and projected
16 market data, specifically stock prices, dividends, growth rates and interest rates in the ROE
17 estimation models to estimate the required return for the subject company. Therefore, it is
18 important to evaluate how market conditions have affected the results of the models in the
19 evaluation of the appropriate weight to place on the results of the ROE estimation models.
20 For example, stock prices affect the dividend yield in the DCF model. If stock prices are

1 unsustainably high, the dividend yield in the DCF model may be unsustainably low, and
2 the result of the model will understate the cost of equity.

3 As discussed in the remainder of this section, analysts and regulatory commissions
4 have concluded that current market conditions have affected the results of the ROE
5 estimation models. As a result, it is important to consider the effect of these conditions on
6 the ROE estimation models when determining the appropriate range and recommended
7 ROE for a future period. If investors do not expect current market conditions to be
8 sustained in the future, it is possible that the ROE estimation models will not provide an
9 accurate estimate of investors' required return during that rate period. Therefore, it is very
10 important to consider projected market data to estimate the return for that forward-looking
11 period.

12 **Q. What factors are affecting the cost of equity for regulated utilities in the current and**
13 **prospective capital markets?**

14 A. The cost of equity for regulated utility companies is being affected by several factors in the
15 current and prospective capital markets, including: (1) the dramatic shifts in market
16 conditions during 2020, the economic recovery in 2021 and the expectations for 2022, and
17 the effect of these changes on the assumptions used in the ROE estimation models; and (2)
18 effects of federal tax reform on utility cash flows. In this section, I discuss each of these
19 factors and how it affects the models used to estimate the cost of equity for regulated
20 utilities.

1 **Q. Have state regulatory commissions considered market events and the utility's ability**
2 **to attract capital in determining the equity return?**

3 A. Yes. In a recent rate case for Consumers Energy Company, the Michigan Public Service
4 Commission ("Michigan PSC") noted that it is important to consider how a utility's access
5 to capital could be affected in the near-term as a result of market reactions to global events
6 like those that have occurred in the recent past.⁷ Specifically, the Michigan PSC noted
7 that:

8 [i]n setting the ROE at 9.90%, the Commission believes there is an
9 opportunity for the company to earn a fair return during this period of
10 atypical market conditions. This decision also reinforces the belief, as stated
11 in the Commission's March 29 order, "that customers do not benefit from a
12 lower ROE if it means the utility has difficulty accessing capital at attractive
13 terms and in a timely manner." These conditions still hold true based on the
14 evidence in the instant case. The fact that other utilities have been able to
15 access capital despite lower ROEs, as argued by many intervenors, is also a
16 relevant consideration. It is also important to consider how extreme market
17 reactions to global events, as have occurred in the recent past, may impact
18 how easily capital will be able to be accessed during the future test period
19 should an unforeseen market shock occur. The Commission will continue to
20 monitor a variety of market factors in future rate cases to gauge whether
21 volatility and uncertainty continue to be prevalent issues that merit more
22 consideration in setting the ROE.⁸

23 The Michigan PSC references "global events" and the overall effect the events could have
24 on the ability of a utility to access capital. Consistent with the Michigan PSC's views, it is
25 important to consider current market conditions and the impact of those conditions on the
26 access to and cost of capital, and to position utilities to be able to maintain access in rapidly
27 changing market conditions.

⁷ Michigan Public Service Commission Order, Cause No. U-20697, Consumers Energy Company, December 17, 2020, at 165.

⁸ *Id.*, at 43 (emphasis added).

A. Economic Recovery and Performance of the Utility Sector

1 **Q. Please summarize how current market conditions are affecting the investor-required**
2 **ROE.**

3 A. As is discussed in more detail in the remainder of this section of my testimony, recent and
4 projected market conditions demonstrate that the investor-required return on equity is
5 increasing. Specifically, I address that increasing yields on bonds, rising inflation and the
6 cyclical nature of investment in the utilities sector are creating upward pressure on the investor-
7 required return on equity.

8 **Q. Do recent economic projections indicate the expectation for a continued economic**
9 **recovery in 2022?**

10 A. Yes. The Federal Open Market Committee (“FOMC”) is composed of twelve members
11 including the Board of Governors of the Federal Reserve system and presidents of the
12 Federal Reserve Banks. The FOMC reviews economic and financial conditions, determines
13 the appropriate stance for monetary policy and assess the risks to its long-run goals of price
14 stability and economic growth. The FOMC issued its Summary of Economic Projections
15 in December 2021, where the FOMC’s median projection for GDP growth from Q4 2021
16 to Q4 2022 is 4.0 percent.⁹ The Congressional Budget Office (“CBO”) issued an update
17 to its outlook on economic conditions on July 1, 2021. In that report, the CBO projected
18 strong GDP growth for 2021 and beyond and significant strength in overall economic
19 conditions including:

⁹ Federal Open Market Committee, Summary of Economic Projections at 2 (Dec. 15, 2021).

- Real GDP growth of 7.4 percent in 2021 and 3.1 percent in 2022, which is a significant change from the negative 2.4 percent growth rate in 2020;
- Inflation indicators at or above the 2.0 percent threshold in 2021 and continuing through 2031;
- Labor force expected to be restored to pre-pandemic levels in 2022; and
- Interest rates on federal borrowing increasing through 2031.¹⁰

Q. These trends indicate strong economic recovery over the next year, with robust consumer spending expected. Please summarize the recent monetary policy of the Federal Reserve.

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

- Decreased the Federal Funds rate twice in March 2020, resulting in a target range of 0.00 percent to 0.25 percent;
- Increased its holdings of both Treasury and mortgaged-back securities;
- Started expansive programs to support credit to large employers – the Primary Market Corporate Credit Facility to provide liquidity for new issuances of corporate bonds; and the Secondary Market Corporate Credit Facility to provide liquidity for outstanding corporate debt issuances; and
- Supported the flow of credit to consumers and businesses through the Term Asset-Backed Securities Loan Facility.

In addition, Congress also passed the Coronavirus Aid, Relief, and Economic Security (“CARES”) Act in March 2020, the Consolidated Appropriations Act, 2021 in December 2020 and the American Rescue Plan Act in March 2021, which included \$2.2 trillion, \$900 billion and \$1.9 trillion, respectively, in fiscal stimulus aimed at also

¹⁰ Congressional Budget Office, An Update to the Budget and Economic Outlook 2021 to 2031, July 2021.

1 mitigating the economic effects of COVID-19. These expansive monetary and fiscal
2 programs mitigated the economic effects of the COVID-19 pandemic and are currently
3 providing additional support as the economy recovers from the COVID-19 recession.

4 **Q. Are there indications the Federal Reserve will start to slowly end some of the**
5 **accommodative policy tools that were used to support the economy during COVID-**
6 **19?**

7 A. Yes. Most recently at the December 15, 2021 meeting, in response to inflation exceeding
8 the Federal Reserve's target of 2 percent for a sustained period of time, the Federal Reserve
9 decided to increase the pace of its taper of bond purchases. Beginning in January 2022, the
10 Federal Reserve will reduce asset purchases of Treasuries by \$20 billion and mortgage-
11 backed securities by \$10 billion on a monthly basis.¹¹ This change is double the initial
12 plan outlined at the November 2, 2021 meeting which called for reducing asset purchases
13 of Treasuries by \$10 billion and mortgage-backed securities by \$5 billion on a monthly.¹²
14 Moreover, the Federal Reserve's FOMC is now forecasting three increases in the federal
15 funds rate by the end of 2022¹³ which is a substantial increase from the one increase that
16 was forecasted by the FOMC at the September 22, 2021 meeting.¹⁴

¹¹ Federal Reserve, Press Release, (Dec. 15, 2021).

¹² Federal Reserve, Press Release, (Nov. 3, 2021).

¹³ Federal Reserve, Summary of Economic Projections, (Dec. 15, 2021).

¹⁴ Federal Reserve, Summary of Economic Projections, (Sept. 22, 2021).

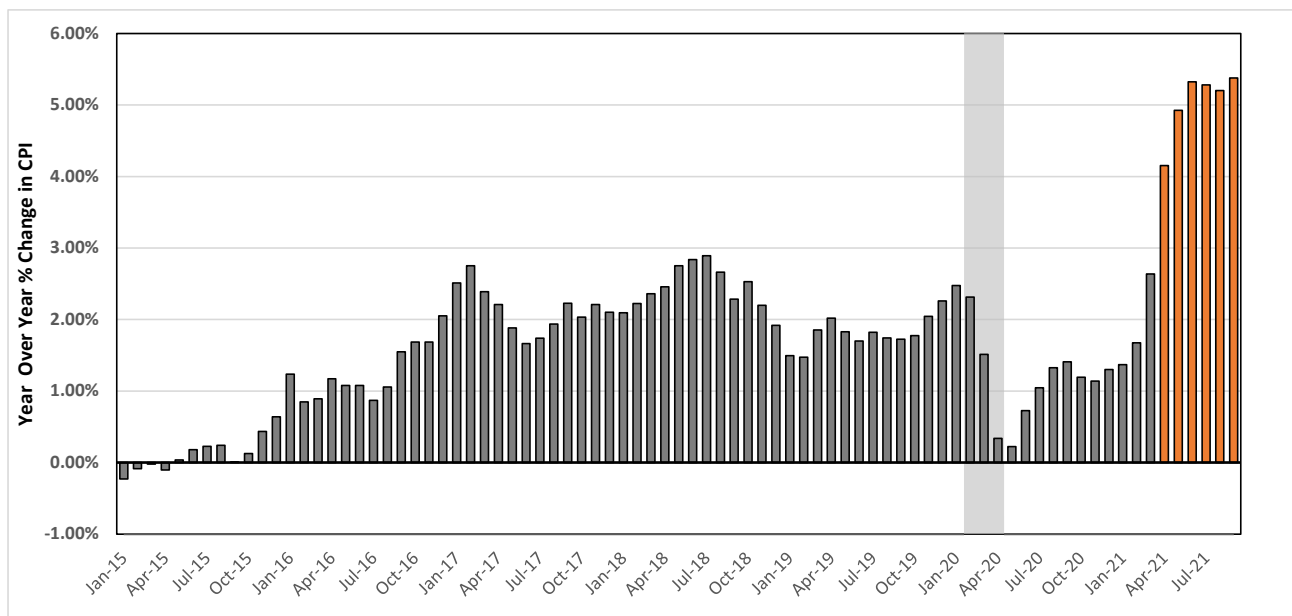
1 **Q. Why has the Federal Reserve decided to normalize monetary policy?**

2 A. The Federal Reserve has accelerated plans to normalize monetary policy in response to
3 increasing inflation. While the Federal Reserve initially viewed inflation as transitory, it has
4 been higher and more persistent than the target levels and is expected to continue in 2022.

5 **Q. How significant is the increase in inflation in 2021?**

6 A. Very significant. As shown in Figure 2, the YOY change in the Consumer Price Index (“CPI”)
7 published by the Bureau of Labor statistics has increased steadily in 2021 rising from 1.37
8 percent in January to 6.88 percent in November. The 6.88 percent YOY in the CPI in
9 November 2021 is the largest 12-month increase since 1982 and is significantly greater than
10 any level seen since January 2008.

Figure 2: Consumer Price Index – YOY Percent Change – January 2015 – September 2021¹⁵



1 **Q. What are investors' expectations for inflation over the near-term?**

2 A. Investors expect inflation to persist into 2022. For example, Goldman Sachs forecasts
3 consumer price inflation excluding food and energy costs to still be above 4 percent when the
4 Federal Reserve ends their tapering of bond purchases in 2022.¹⁶ Similarly, respondents to the
5 recent CNBC Fed Survey, indicated the CPI is expected to rise 3.5 percent in 2022 which is an
6 increase from the September Survey of 3.00 percent.¹⁷ Finally, Kiplinger recently noted the
7 following regarding inflation expectations over the near-term:

8 Inflation at the end of next year should be about 2.7%, down from 6.6% at
9 the end of 2021. It's expected that an easing of supply chain shortages next
10 year will bring some price relief, especially to sky-high motor vehicle
11 prices. But, these shortages are expected to only gradually resolve during
12 2022. Also, worker shortages may last longer than expected, keeping wage
13 growth high and forcing businesses to pass some of those costs on to
14 consumers. So, inflation should remain higher than its 1.7% average over
15 the past ten years.¹⁸

16 According to Kiplinger, the higher levels of inflation will likely result in the Federal
17 Reserve increasing the federal funds rate in 2022 instead of 2023 as originally planned.¹⁹

18 **Q. What effect will inflation have on long-term interest rates?**

19 A. Inflation and the Federal Reserve's normalization of monetary policy will likely result in
20 increases in long-term interest rates. Specifically, inflation reduces the purchasing power of
21 the future interest payments an investor expects to receive over the duration of the bond. This

¹⁶ Kennedy, Simon. "Goldman Now Sees Fed Hiking Rates in July as Inflation Lingers." Bloomberg.com, Bloomberg, 30 Oct. 2021, <https://www.bloomberg.com/news/articles/2021-10-30/goldman-now-sees-fed-hiking-rates-in-july-as-inflation-lingers>.

¹⁷ Liesman, Steve. "Investors Expect a Faster Pace for Fed Rate Hikes, CNBC Survey Shows." CNBC, CNBC, 2 Nov. 2021, <https://www.cnbc.com/2021/11/02/investors-expect-a-faster-pace-for-fed-rate-hikes-cnbc-survey-shows.html>.

¹⁸ Payne, David, "Inflation hits 30-year High," Kiplinger, November 11, 2021.

¹⁹ Ibid.

1 risk increases the longer the duration of the bond. As a result, if investors expect increased
2 levels of inflation, they will require higher yields to compensate for the increased risk of
3 inflation which means interest rates will increase.

4 **Q. What have equity analysts said about long-term government bond yields?**

5 A. Several equity analysts have noted that they expect economic conditions to continue to
6 improve and thus the yields on long-term government bonds to continue to increase through
7 the end of 2022. As shown in Figure 3, according to six different equity analysts, the yield
8 on the 10-year Treasury Bond is expected to range from 1.75 percent to 2.50 percent in
9 2022 which is 17 to 92 basis points greater than the current 30-day average yield on the
10 10-year Treasury Bond as of November 30, 2021, of 1.58 percent. Specifically, Morgan
11 Stanley recently noted the following regarding the expectation for long-term government
12 bond yields in 2022:

13 Continued strong growth in 2022, alongside receding but above-target
14 inflation, keeps the Fed patient, yet gradually moving toward rate hikes, and
15 keeps Treasury yields moving higher.²⁰

²⁰ “Factbox: Wall Street Forecasts for the U.S. Dollar and 10-Year Treasury Yield in 2022.” Reuters, Thomson Reuters, 18 Nov. 2021, <https://www.reuters.com/markets/us/wall-street-forecasts-us-dollar-10-year-treasury-yield-2022-2021-11-18/>.

Figure 3: Equity Analysts Forecast of the 10-year Treasury Yield²¹

Bank	10-year U.S. Treasury Yield	
	30-day Average as of November 30, 2021	2022 Forecast
Barclays	1.58%	1.75%
Morgan Stanley	1.58%	2.10%
Goldman Sachs	1.58%	2.00%
JP Morgan	1.58%	2.10%
Wells Fargo Investment Institute	1.58%	2.00% - 2.50%
Amundi	1.58%	1.80% - 2.00%

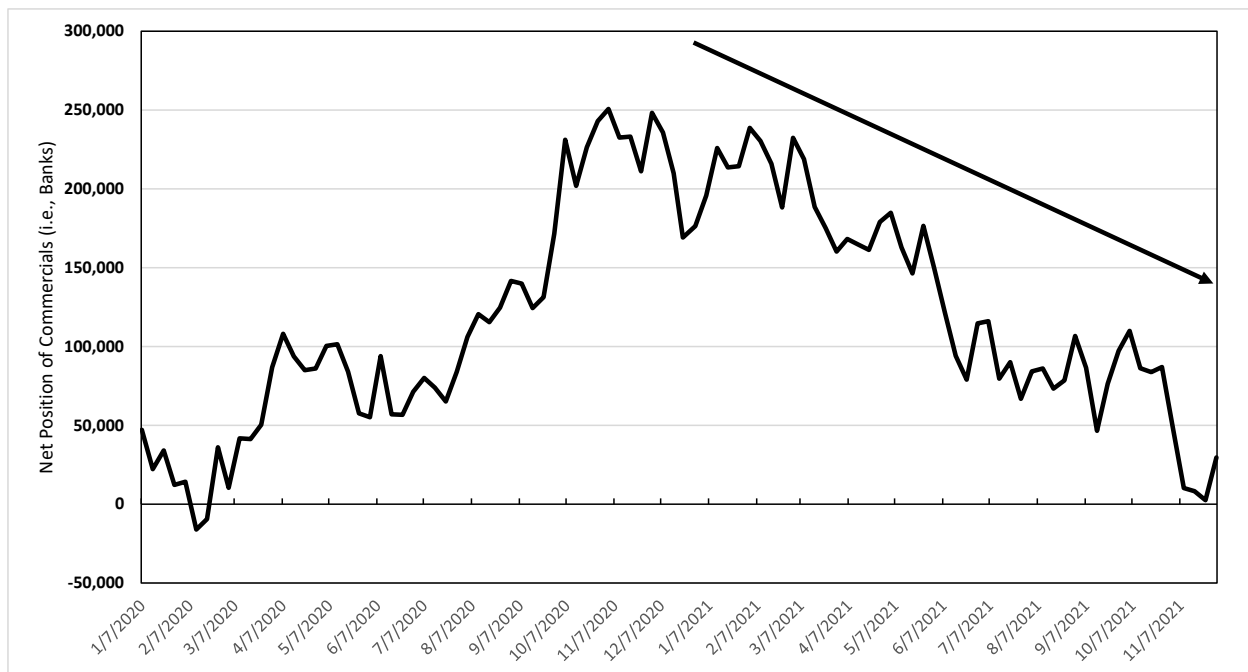
Q. Have you considered any additional indicators which may imply long-term interest rates are expected to increase?

A. Yes, I have. I considered the net position of commercials (i.e., banks) in U.S. Treasury Bond futures contracts as reported in the Commitment of Traders (“COT”) Report produced by the Commodity Futures Trading Commission (“CFTC”). A net position is defined as the total number of long positions in a futures contract minus the total number of short positions in a futures contract. A long position means that an investor agrees to purchase an asset in the future at a specified price today and therefore the investor profits if the price of the underlying asset increases. Conversely, short position is when an investor agrees to sell an asset at a time in the future at a specified price today and the investor profits if the price of the asset declines. Therefore, if banks are increasing the number of

²¹ “Factbox: Wall Street Forecasts for the U.S. Dollar and 10-Year Treasury Yield in 2022.” Reuters, Thomson Reuters, 18 Nov. 2021, <https://www.reuters.com/markets/us/wall-street-forecasts-us-dollar-10-year-treasury-yield-2022-2021-11-18/>.

1 short positions and thus have a declining net position, the banks are assuming that the price
2 of the asset will decline. As shown in Figure 4, the net position of banks in U.S. Treasury
3 Bonds has been decreasing since the end of 2020. Therefore, banks are forecasting a
4 decrease in the price of long-term government bonds and thus the yields (which are
5 inversely related to the price) to increase over the near-term.

Figure 2: Commitment of Traders Report – Net Position of Commercials (i.e., Banks) in U.S. Treasury Bond Futures Contracts²²



6 **Q. How do equity analysts expect the utilities sector to perform in an increasing interest**
7 **rate environment?**

8 **A.** Equity analysts project that utilities are expected to continue to underperform the broader
9 market as interest rates increase. For example, in a recent article, Barron's conducted its

²² Commitment of Traders Report, as of November 30, 2021 - <https://www.cftc.gov/MarketReports/CommitmentsofTraders/HistoricalCompressed/index.htm>

1 Big Money poll of professional investors regarding the outlook for the next twelve months.
2 Approximately 60 percent of respondents projected the yield on the 10-year Treasury Bond
3 will be 2.00 percent or greater at the end of the next twelve months which is an increase
4 from the current 30-day average 10-year Treasury Bond yield as of September 30, 2021 of
5 1.35 percent.²³ Furthermore, the professional investors surveyed by Barron's selected the
6 utility sector as the sector which will perform the worst over the next twelve months
7 indicating they are projecting that utilities will underperform the broader market in 2022.

8 Other equity analysts concur with this conclusion. Fidelity recently recommended
9 underweighting the utility sector and noted that "[w]eak fundamentals and high valuations
10 could be headwinds for utilities and real estate, especially if rates increase."²⁴ In its 2021
11 Midyear Outlook, Well Fargo classified the utility sector as "most unfavorable" as
12 economic growth continues to rebound.²⁵ Finally, Charles Schwab has classified the
13 utilities sector overall as "Underperform," noting negatives for the sector that include
14 "interest rates are expected to recover from recent decline" and "economic recovery makes
15 the sector less attractive, relative to other sectors".²⁶

²³ Jasinski, Nicholas. Stocks Are Still the Place to Be, Our Exclusive Big Money Poll Finds. Barron's, 16 Oct. 2021, <https://www.barrons.com/articles/stock-market-covid-economy-outlook-51634312012?mod=hpsubnav&tesla=y>.

²⁴ Fidelity, "Q4 2021 sector scorecard," October 27, 2021.

²⁵ Well Fargo Investment Institute, 2021 Midyear Outlook, June 2021.

²⁶ Charles Schwab, "Schwab Sector Insights: A view on 11 Equity Sectors," September 30, 2021.

1 **Q. How has the utility sector performed historically during periods where the yield curve**
2 **is steepening, and the economy is in the early stage of the business cycle?**

3 A. In a recent report, Fidelity noted that the utility sector has historically been one of the worst
4 performing sectors during the early phase of the business cycle with a geometric average
5 return of -10.5 percent.²⁷ This conclusion is further supported by studies conducted by
6 both Goldman Sachs and Deutsche Bank that examined the sensitivity of share prices of
7 different industries to changes in interest rates over the past five years. Both Goldman
8 Sachs and Deutsche Bank found that utilities had one of the strongest negative relationships
9 with bond yields (i.e., increases in bond yields resulted in the decline of utility share
10 prices).²⁸ This is important because if the utility sector underperforms over the near term,
11 and prices of utility stocks decline, then the DCF model, which relies on historical averages
12 of share prices, is likely to understate the cost of equity for the Company over the near term
13 or the period that Company's rates will be in effect.

14 **Q. Why do utilities historically underperform in the early stage of the business cycle?**

15 A. Utilities are considered a defensive sector and are therefore affected less by changes in the
16 business cycle relative to other market sectors since consumers need energy during all
17 phases of the business cycle. Therefore, utilities tend to perform well during periods of
18 uncertainty where the prospect of slowing economic growth increases. As Fidelity noted
19 historically utilities outperform the market in latter and recession phases of the business
20 cycle.²⁹ This relationship mostly held during the past few years as the share prices of

²⁷ Fidelity Investments, "The Business Cycle Approach to Equity Sector Investing," 2020.

²⁸ Lee, Justina. "Wall Street Is Rethinking the Treasury Threat to Big Tech Stocks." Bloomberg.com, 11 Mar. 2021, www.bloomberg.com/news/articles/2021-03-11/wall-street-is-rethinking-the-treasury-threat-to-big-tech-stocks.

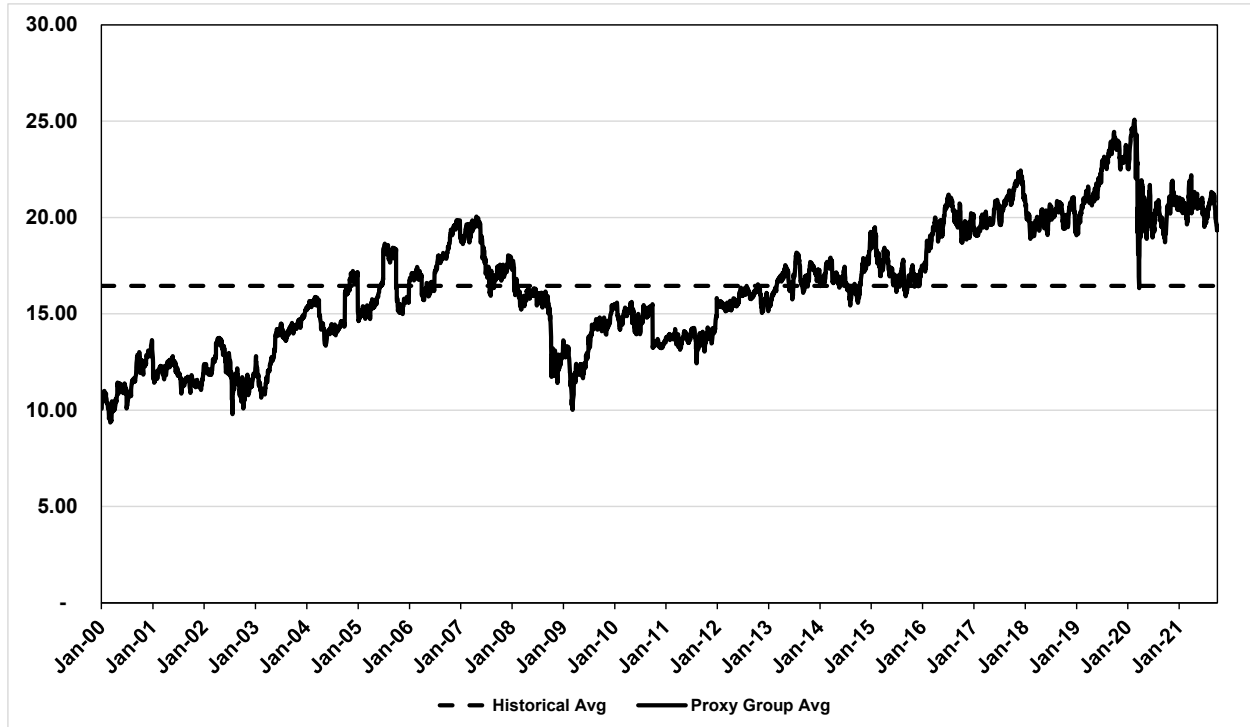
²⁹ Fidelity Investments, "The Business Cycle Approach to Equity Sector Investing," 2020.

1 utilities were bid up to unsustainable levels as investors responded to economic uncertainty
2 due to the trade war between the U.S. and China and ultimately the COVID-19 pandemic.

3 **Q. How do the recent valuations of utilities compare to historical averages?**

4 A. The utility sector's valuations remain above the long-term historical average. As shown in
5 Figure 5, the price-to-earnings ("P/E") ratio of the proxy group is currently approximately
6 19.34, or above the long-term average of the proxy group over this period of approximately
7 16.45. It is not reasonable to expect the proxy group utilities to maintain P/E ratios that are
8 above long-term averages over the long term.

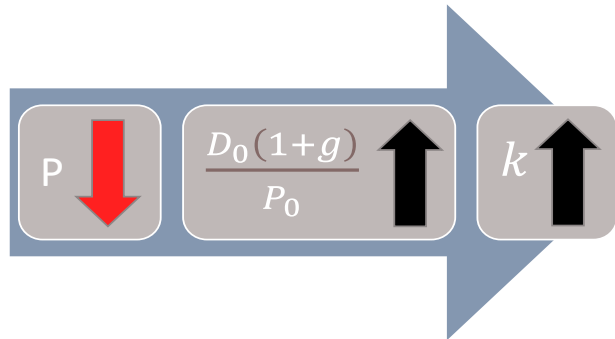
Figure 3: P/E Ratios of Proxy Group Relative to the Long-Term Average, January 2000 – September 2021³⁰



- 1 **Q. What is the effect of expected market conditions on the DCF model?**
- 2 A. If the utility sector underperforms over the near term as expected, and prices of utility
- 3 stocks decline, then the DCF model, which relies on historical averages of share prices, is
- 4 likely to understate the cost of equity. For example, Figure 6 below summarizes the effect
- 5 of a decline in share price on the dividend yield and thus the cost of equity estimated by
- 6 the Constant Growth DCF model.

³⁰ Bloomberg Professional.

Figure 4: The Effect of a decline in Stock Prices on the Constant Growth DCF model



A decline in stock prices will increase the dividend yields and thus the estimate of the ROE produced by the Constant Growth DCF model. Therefore, this expected change in market conditions supports consideration of the range of ROE results produced by the mean to mean-high DCF results since the mean DCF results would likely understate the cost of equity during the period that the Company's rates will be in effect. Moreover, prospective market conditions warrant consideration of other ROE estimation models such as the CAPM, ECAPM and Bond Yield Plus Risk Premium, which may better reflect expected market conditions. For example, two out of three inputs to the CAPM (*i.e.*, the market risk premium and risk-free rate) are forward-looking.

B. Effect of Tax Reform on the ROE and Capital Structure

Q. Please summarize the effect of Tax Reform on the ROE and Capital Structure

A. Tax reform resulted in a reduction in the cash flow metrics for utility companies as a result of the loss of bonus depreciation and the return of excess Accumulated Deferred Income Taxes ("ADIT"). The credit metrics reflect the utility's ability to cover their fixed income obligations. To the extent that these metrics deteriorate, and there is greater risk related to the coverage of fixed obligations, the investor-required return on equity will also increase. As is discussed in the remainder of this section, following the implementation of Tax

1 Reform credit rating agencies identified increased risk resulting from the deterioration of
2 credit metrics and proposed as a solution increasing the ROE and/or the equity ratios of
3 utilities to stabilize credit metrics.

4 **Q. Should the effect of tax reform be considered in determining the cost of equity for the**
5 **Company?**

6 A. Yes. The credit rating agencies have commented on the adverse effect of the TCJA on the
7 cash flows of regulated utilities.³¹ Specifically, the TCJA has reduced utility revenues due
8 to lower federal income taxes in the revenue requirement, the end of bonus depreciation,
9 and the requirement to return excess accumulated deferred income taxes. This change in
10 revenue reduced funds from operations metrics across the sector, and absent regulatory
11 mitigation strategies, has led to weaker credit metrics and negative ratings actions for some
12 utilities.³²

13 **Q. What has been the effect of the TCJA on utility financial risk?**

14 A. The TCJA reduced utilities' financial flexibility through the loss of bonus depreciation and
15 the return of excess Accumulated Deferred Income Taxes ("ADIT"). In 2018 when the
16 TCJA was passed, credit rating agencies initially revised the outlook on utilities.

17 **Q. Does tax reform continue to present challenges for utilities?**

18 A. Yes. The TCJA resulted in a permanent change in the cash flow metrics of utilities. Credit
19 rating agencies have recognized this change in metrics and have proposed that increasing

³¹ Standard & Poor's Ratings, "Industry Top Trends 2019, North America Regulated Utilities", November 8, 2018; FitchRatings, Special Report, What Investors Want to Know, "Tax Reform Impact on the U.S. Utilities, Power & Gas Sector", January 24, 2018.

³² *Ibid.*

1 ROEs and the use of thicker equity layers can improve credit metrics. Since 2018, Moody's
2 has downgraded the credit ratings of more than 30 utilities related in part to the TCJA
3 beginning in June 2018 and continuing into 2021.

4 **Q. Did the Company experience a downgrade related to cash flow metrics resulting from**
5 **tax reform?**

6 A. Yes. OG&E was downgraded twice by Moody's since the implementation of the TCJA in
7 December 2017. In July 2018, OG&E was downgraded from a rating of A1 to A2 and in
8 May 2019, OG&E was downgraded from a rating of A2 to A3. In both cases, the negative
9 cash flow effects of the passage of tax reform in December 2017 was cited as a reason for
10 the credit rating downgrade. In May 2019, Moody's noted:

11 "We expect OG&E's financial metrics to remain significantly below
12 historical levels due to higher debt levels and lagging cash flow from tax
13 reform" said Ryan Wobbrock, Vice President -- Senior Credit Officer,
14 "With cash flow to debt ratios now in the low-20% range, OG&E's financial
15 profile is more comparable to A3 integrated utility peers" added
16 Wobbrock.³³

³³ Moody's Investors Service, "Rating Action: Moody's downgrades Oklahoma Gas & Electric to A3 and affirms OGE Energy at Baa1; outlooks stable, May 31, 2019.

1 **Q. Have state regulatory commissions recognized that the TCJA has had an adverse**
2 **impact on utility cash flows?**

3 A. Yes. The Oregon Public Utilities Commission (“Oregon PUC”),³⁴ the Wyoming Public
4 Service Commission (“Wyoming PSC”)³⁵ and the Utah Public Service Commission (“Utah
5 PSC”)³⁶ have acknowledged the negative effect of the TCJA on the cash flow of utilities.

6 Further, in a December 2019 order for Georgia Power Company, the Georgia Public
7 Service Commission found it appropriate to authorize a higher equity ratio as a means to
8 address the negative impacts of the TCJA:

9 As pointed out by the Company, in April 2018, this Commission adjusted
10 the Company’s equity ratio upward from the 51%, which was previously
11 approved in the 2013 Rate Case, to 55% as part of the Tax Cuts and Jobs
12 Act settlement between the Company and Commission PIA Staff in Docket
13 No. 36989 (“Tax Reform Settlement”). The equity adjustment approved in
14 the Tax Reform Settlement was implemented to address the negative
15 implications of tax reform, provide support for maintaining the Company’s
16 credit profile, and allow the Company timely access to capital markets and
17 the ability to borrow at reasonable interest rates. Based on the evidence
18 presented, the Commission finds and concludes that the Settlement
19 Agreement’s proposed capital structure of 56% common equity level is just
20 and reasonable considering all the evidence presented and is necessary to
21 avoid a credit rating downgrade.³⁷

³⁴ See In the Matter of Avista Corporation, dba Avista Utilities, Application for Authorization to Issue 3,500,000 Shares of Common Stock, Docket UF 4308, Order No. 19-067 (Feb. 23, 2019); In the Matter of Avista Corporation, dba Avista Utilities, Application for Authorization to Issue and Sell \$600,000,000 of Debt Securities, UF 4313, Order No. 19-249 (July 30, 2019); In the Matter of Portland General Electric Company, Request for Authority to Extend the Maturity of an Existing \$500 Million Revolving Credit Agreement, Docket UF 4272(3), Order No. 19-025 (Jan. 23, 2019).

³⁵ In the Matter of Questar Gas Company dba Dominion Energy Wyoming's Application for Approval of Amended Stipulation Previously Approved in Docket No. 30010-150-GA-16, Docket No. 30010-180-GA-18 (Record No. 15138) (Aug. 20, 2019).

³⁶ Report and Order, Docket No. 19-057-02, Dominion Energy Utah, February 25, 2020, at 6.

³⁷ Georgia Public Service Commission Docket No. 42516, Short Order Adopting Settlement Agreement as Modified, December 17, 2019, at 7-8.

C. Conclusion

1 **Q. What are your conclusions regarding the effect of current market conditions on the**
2 **cost of equity for the Company?**

3 **A. The important conclusions regarding capital market conditions are:**

- 4 • As markets continue to rebound from the uncertainty and volatility that
5 characterized capital markets in 2020 and interest rates continue to increase from
6 the market lows in August 2020, it is reasonable that equity investors would require
7 a higher return on equity to compensate for the additional risk associated with
8 owning common stock. Likewise, if electric utilities continue to underperform the
9 broader market, as expected by analysts, this will indicate additional risk associated
10 with these investments.
- 11 • Investors' current expectations regarding the economy highlights the importance of
12 using forward-looking inputs in the models used to estimate the cost of equity.
13 Current utility valuations are still well above the long-term average. Because the
14 dividend yield is calculated as the dividend divided by the price, the current high
15 valuations result in low dividend yields for utilities, which means that DCF models
16 using recent historical data likely underestimate investors' required return over the
17 period that rates will be in effect.
- 18 • Further, expectations of higher interest rates and inflation affect the Company's
19 ability to earn its authorized ROE and increase the risk associated with the
20 Company's capital investment plan.
- 21 • Credit rating agencies have demonstrated concern about the cash flow metrics of
22 utilities, related to the negative effects of both current market conditions and the
23 TCJA, which increases investor risk expectations for utilities. Therefore, it is
24 increasingly important to consider a rate of return and capital structure that support
25 the Company's cash flow metrics to enable OG&E the ability to attract capital at
26 reasonable terms during the period that rates will be in effect.

1

V. PROXY GROUP SELECTION

2 **Q. Please provide a brief profile of OG&E.**

3 A. OG&E is an electric utility company that is a wholly-owned subsidiary of OGE Energy
4 Corp. The Company operates in Oklahoma and western Arkansas. In Oklahoma, the
5 Company provides electric utility service to approximately 867,389 residential,
6 commercial and industrial customers.³⁸ As of December 31, 2020, OG&E's net utility
7 electric plant in service in Oklahoma was approximately \$13,436.1 million.³⁹ In addition,
8 OG&E had total electric sales in 2020 of approximately 29 million MWh, made up of 33.76
9 percent residential, 21.72 percent commercial, 14.48 percent industrial, and 31.03 percent
10 other.^{40,41} OG&E currently has an investment grade long-term rating of A- (Outlook:
11 Negative) from S&P and A3 (Outlook: Negative) from Moody's.⁴²

12 **Q. Why have you used a group of proxy companies to estimate the cost of equity for**
13 **OG&E?**

14 A. In this proceeding, we focus on estimating the cost of equity for an electric utility company
15 that is not itself publicly traded. Because the cost of equity is a market-based concept and
16 because OG&E's operations do not make up the entirety of a publicly traded entity, it is
17 necessary to establish a group of companies that is both publicly traded and comparable to

³⁸ OG&E SEC form 10-K, p. 55.

³⁹ *Id.*, at p. 82.

⁴⁰ *Id.*, at p. 7.

⁴¹ *Id.*

⁴² S&P Global Market Intelligence, November 2, 2021.

1 the Company in certain fundamental business and financial respects to serve as its “proxy”
2 in the ROE estimation process.

3 Even if OG&E was a publicly traded entity, it is possible that transitory events could bias
4 its market value over a given period. A significant benefit of using a proxy group is that it
5 moderates the effects of unusual events that may be associated with any one company. The
6 proxy companies used in my analyses all possess a set of operating and risk characteristics
7 that are substantially comparable to the Company, and thus provide a reasonable basis to
8 derive and estimate the appropriate ROE for OG&E.

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

10 A. I began with the group of 36 companies that Value Line classifies as Electric Utilities and
11 applied the following screening criteria to select companies that:

- 12 • Pay consistent quarterly cash dividends, because companies that do not pay a
13 dividend cannot be analyzed using the Constant Growth DCF model;
- 14 • Have investment grade long-term issuer ratings from S&P and/or Moody’s;
- 15 • Are covered by at least two utility industry analysts;
- 16 • Have positive long-term earnings growth forecasts from at least two utility industry
17 equity analysts;
- 18 • Own regulated generation assets that are included in rate base;
- 19 • Have more than 5 percent of owned regulated generation capacity come from
20 regulated coal-fired power plants;
- 21 • Derive more than 40 percent of its megawatt-hour sales from its owned generation
22 facilities.

- 1 • Derive more than 60 percent of their total operating income from regulated
2 operations;
- 3 • Derive more than 60 percent of their total regulated operating income from
4 regulated electric operations; and
- 5 • We're not parties to a merger or transformative transaction during the analytical
6 periods relied on.

7 **Q. Did you include OGE Energy Corp. in your analysis?**

8 A. No. In order to avoid the circular logic that otherwise would occur, it is my practice to
9 exclude the subject company, or its parent holding company, from the proxy group.

10 **Q. Did you exclude any other companies from the proxy group?**

11 A. Yes. Similar to the reason that I exclude transformative transactions; because the stock
12 price can be affected by one-time events, I also excluded Pinnacle West Capital
13 Corporation from the proxy group. The stock price of Pinnacle West Capital Corporation
14 decreased approximately 24 percent over a two-month period from October through
15 November 2021 resulting from a negative regulatory decision for its largest operating
16 company, Arizona Public Service Company. Therefore, I have excluded this company
17 from the proxy group.

18 **Q. What is the composition of your proxy group?**

19 A. The screening criteria discussed above are shown in Exhibit AEB-3 and resulted in a proxy
20 group consisting of the companies shown in Figure 7 below.

Figure 5: Proxy Group

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avista Corporation	AVA
Duke Energy Corporation	DUK
Entergy Corporation	ETR
Evergy, Inc.	EVRG
IDACORP, Inc.	IDA
MGE Energy, Inc.	MGEE
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
Otter Tail Corporation	OTTR
Portland General Electric Company	POR
Southern Company	SO
Xcel Energy Inc.	XEL

VI. COST OF EQUITY ESTIMATION

1 **Q. Please briefly discuss the ROE in the context of the regulated rate of return (“ROR”).**

2 **A.** The ROE is the cost rate applied to the equity capital in the ROR. The ROR for a regulated
3 utility is the weighted average cost of capital, in which the cost rates of the individual
4 sources of capital are weighted by their respective book values. While the costs of debt
5 and preferred stock can be directly observed, the cost of equity is market-based and,
6 therefore, must be estimated based on observable market data.

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

2 A. The required ROE is estimated by using one or more analytical techniques that rely on
3 market-based data to quantify investor expectations regarding equity returns, adjusted for
4 certain incremental costs and risks. Informed judgment is then applied to determine where
5 the company's cost of equity falls within the range of results. The key consideration in
6 determining the cost of equity is to ensure that the methodologies employed reasonably
7 reflect investors' views of the financial markets in general, as well as the subject company
8 (in the context of the proxy group), in particular.

9 **Q. What methods did you use to determine OG&E's ROE?**

10 A. I considered the results of the Constant Growth DCF model, the CAPM, the ECAPM, and
11 a Bond Yield Plus Risk Premium analysis. As discussed in more detail below, a reasonable
12 ROE estimate appropriately considers alternative methodologies and the reasonableness of
13 their individual and collective results.

A. Importance of Multiple Analytical Approaches

14 **Q. Why is it important to use more than one analytical approach?**

15 A. Because the cost of equity is not directly observable, it must be estimated based on both
16 quantitative and qualitative information. When faced with the task of estimating the cost
17 of equity, analysts and investors are inclined to gather and evaluate as much relevant data
18 as reasonably can be analyzed. Several models have been developed to estimate the cost
19 of equity, and I use multiple approaches to estimate the cost of equity. As a practical
20 matter, however, all the models available for estimating the cost of equity are subject to

1 limiting assumptions or other methodological constraints. Consequently, many well-
2 regarded finance texts recommend using multiple approaches when estimating the cost of
3 equity. For example, Copeland, Koller, and Murrin⁴³ suggest using the CAPM and other
4 models, while Brigham and Gapenski⁴⁴ recommend the CAPM, DCF, and Bond Yield Plus
5 Risk Premium approaches.

6 **Q. Do current market conditions increase the importance of using more than one**
7 **analytical approach?**

8 A. Yes. Low interest rates and the effects of the investor “flight to quality” can be seen in
9 high utility share valuations, relative to historical levels and relative to the broader market.
10 Higher utility stock valuations produce lower dividend yields and result in lower cost of
11 equity estimates from a DCF analysis. Low interest rates also affect the CAPM in two
12 ways: (1) the risk-free rate is lower, and (2) because the market risk premium is a function
13 of interest rates, (i.e., it is the return on the broad stock market less the risk-free interest
14 rate), the risk premium should move higher when interest rates are lower. Therefore, it is
15 important to use multiple analytical approaches to moderate the impact that the current low
16 interest rate environment is having on the ROE estimates for the proxy group and, where
17 possible, consider using projected market data in the models to estimate the return for the
18 forward-looking period.

⁴³ Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd Ed. (New York: McKinsey & Company, Inc., 2000), at 214.

⁴⁴ Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed. (Orlando: Dryden Press, 1994), at 341.

1 **Q. Are you aware of any other regulatory commissions that have recognized the**
2 **importance of considering the results of multiple models?**

3 A. Yes, several regulatory commissions consider the results of multiple ROE estimation
4 methodologies such as the DCF, CAPM, ECAPM and Bond Yield Plus Risk Premium in
5 determining the authorized ROE, including the Minnesota Public Utilities Commission
6 (“Minnesota PUC”)⁴⁵, the Michigan PSC⁴⁶, the Iowa Utilities Board (“IUB”)⁴⁷, the
7 Washington Utilities and Transportation Commission (“Washington UTC”)⁴⁸ and the New
8 Jersey Board of Public Utilities (“NJBP”)⁴⁹. For example, the Washington UTC has
9 repeatedly emphasized that it “places value on each of the methodologies used to calculate
10 the cost of equity and does not find it appropriate to select a single method as being the
11 most accurate or instructive.”⁵⁰ The Washington UTC has also explained that “[f]inancial
12 circumstances are constantly shifting and changing, and we welcome a robust and diverse
13 record of evidence based on a variety of analytics and cost of capital methodologies.”⁵¹

14 Additionally, in its recent order for DTE Gas Company (“DTE Gas”) in Case No.
15 U-18999, the Michigan PSC considered the results of each of the models presented by the
16 ROE witnesses which included the DCF, CAPM, ECAPM and Bond Yield Plus Risk

⁴⁵ Docket No. G011/GR-17-563, Findings of Fact, Conclusions and Order, at 27; Docket No. E015/GR-16-664, Findings of Fact, Conclusions and Order, at 60-61

⁴⁶ Michigan Public Service Commission Order, DTE Gas Company, Case No. U-18999, September 13, 2018, at 45-47.

⁴⁷ Iowa Utilities Board, Iowa-American Water Company, RPU-2016-0002, Final Decision and Order issued February 27, 2017, at 35.

⁴⁸ *Wash. Utils. & Transp. Comm’n v. PacifiCorp*, Docket UE-130043, Order 05, n. 89 (Dec. 4, 2013); *Wash. Utils. & Transp. Comm’n v. PacifiCorp*, Docket UE-100749, Order 06, ¶ 91 (March 25, 2011).

⁴⁹ NJBP Docket No. ER12111052, OAL Docket No. PUC16310-12, Order Adopting Initial Decision with Modifications and Clarifications, March 18, 2015, at 71.

⁵⁰ *Wash. Utils. & Transp. Comm’n v. PacifiCorp*, Docket UE-130043, Order 05, n. 89 (Dec. 4, 2013).

⁵¹ *Wash. Utils. & Transp. Comm’n v. PacifiCorp*, Docket UE-100749, Order 06, ¶ 91 (March 25, 2011).

1 Premium in the determination of the authorized ROE.⁵² The Commission also considered
2 authorized ROEs in other states, increased volatility in capital markets and the company-
3 specific business risks of DTE Gas.

4 **Q. What are your conclusions about the results of the DCF and CAPM models?**

5 A. Recent market data that is used as the basis for the assumptions for both models have been
6 affected by market conditions. As a result, relying exclusively on historical assumptions
7 in these models, without considering whether these assumptions are consistent with
8 investors' future expectations, will underestimate the cost of equity that investors would
9 require over the period that the rates in this case are to be in effect. In this instance, relying
10 on the historically low dividend yields that are not expected to continue over the period
11 that the new rates will be in effect will underestimate the ROE for OG&E.

12 Furthermore, as discussed in Section IV above, long-term interest rates have increased
13 since August 2020 and this trend is expected to continue over the near-term as the economy
14 enters the recovery phase of the business cycle. Therefore, the use of current averages of
15 Treasury bond yields as the estimate of the risk-free rate in the CAPM is not appropriate
16 since recent market conditions are not expected to continue over the long-term. Instead,
17 analysts should rely on projected yields of Treasury Bonds in the CAPM. The projected
18 Treasury Bond yields results in CAPM estimates that are more reflective of the market
19 conditions that investors expect during the period that the Company's rates will be in effect.

⁵² Michigan Public Service Commission Order, DTE Gas Company, Case No. U-18999, September 13, 2018, at 45-47.

B. Constant Growth DCF Model

Q. Please describe the DCF approach.

A. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

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

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

$$k = \frac{D_0(1+g)}{P_0} + g \quad [2]$$

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

Q. What assumptions are required for the Constant Growth DCF model?

A. The Constant Growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions are violated, considered judgment and/or specific adjustments should be applied to the results.

1 **Q. What market data did you use to calculate the dividend yield in your Constant**
2 **Growth DCF model?**

3 A. The dividend yield in my Constant Growth DCF model is based on the proxy companies'
4 current annualized dividend and average closing stock prices over the 30-, 90-, and 180-
5 trading days ended September 30, 2021.

6 **Q. Why did you use 30-, 90-, and 180-day averaging periods?**

7 A. In my Constant Growth DCF model, I use an average of recent trading days to calculate
8 the term P_0 in the DCF model to ensure that the ROE is not skewed by anomalous events
9 that may affect stock prices on any given trading day. The averaging period should also
10 be reasonably representative of expected capital market conditions over the long term.
11 However, the averaging periods that I use rely on historical data that are not consistent with
12 the forward-looking market expectations. Therefore, the results of my Constant Growth
13 DCF model using historical data may underestimate the forward-looking cost of equity.
14 As a result, I place more weight on the mean to mean-high results produced by my Constant
15 Growth DCF model.

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

18 A. Yes, I did. Because utility companies tend to increase their quarterly dividends at different
19 times throughout the year, it is reasonable to assume that dividend increases will be evenly
20 distributed over calendar quarters. Given that assumption, it is reasonable to apply one-
21 half of the expected annual dividend growth rate for purposes of calculating the expected
22 dividend yield component of the DCF model. This adjustment ensures that the expected

1 first-year dividend yield is, on average, representative of the coming twelve-month period,
2 and does not overstate the aggregated dividends to be paid during that time.

3 **Q. Why is it important to select appropriate measures of long-term growth in applying**
4 **the DCF model?**

5 A. In its Constant Growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth
6 estimate in perpetuity. To reduce the long-term growth rate to a single measure, one must
7 assume that the payout ratio remains constant and that earnings per share, dividends per
8 share and book value per share all grow at the same constant rate. Over the long run,
9 however, dividend growth can only be sustained by earnings growth. Therefore, it is
10 important to incorporate a variety of sources of long-term earnings growth rates into the
11 Constant Growth DCF model.

12 **Q. Which sources of long-term earnings growth rates did you use?**

13 A. My Constant Growth DCF model incorporates three sources of long-term earnings growth
14 rates: (1) Zacks Investment Research; (2) Yahoo! Finance; and (3) Value Line Investment
15 Survey.

16 **Q. How did you calculate the range of results for the Constant Growth DCF Models?**

17 A. I calculated the low result for my DCF model using the minimum growth rate (*i.e.*, the
18 lowest of the Value Line, Yahoo! Finance, and Zacks earnings growth rates) for each of
19 the proxy group companies. Thus, the low result reflects the minimum DCF result for the
20 proxy group. I used a similar approach to calculate the high results, using the highest
21 growth rate for each proxy group company. The mean results were calculated using the
22 average growth rates from all sources.

1 **Q. Did you review the DCF results for individual companies in your proxy group?**

2 A. Yes, I did. It is important to review the DCF results of the individual companies included
3 in the proxy to ensure that the DCF results of each company provide a sufficient return
4 increment above the long-term debt costs to compensate investors for the added risk of an
5 equity investment.

6 **Q. How did you determine the low-end threshold that would be used to evaluate the DCF**
7 **results for the individual companies in your proxy group?**

8 A. The average credit rating for the companies in my proxy group is BBB+ from S&P and
9 Baa1 from Moody's. The average yield on Moody's Baa-rated utility bonds for the 30
10 trading days ending September 30, 2021 was 3.19 percent.⁵³ Therefore, for example, a 7.00
11 percent DCF result would only provide a risk premium of 381 basis points above Baa-rated
12 utility bonds. As a result, I have determined that a Constant Growth DCF result lower than
13 7.00 percent would not provide equity investors a sufficient risk premium above long-term
14 debt costs.

15 **Q. How did you address the DCF results for individual companies in your proxy group**
16 **that were below 7 percent?**

17 A. I developed two approaches to account for the DCF results for individual companies in my
18 proxy group that were below 7 percent. In the first approach, I excluded the DCF results
19 that were below 7 percent and then calculated the mean DCF result for the proxy group.
20 Since the mean can be affected by outlier results, it is important to exclude the individual
21 results for companies that would not provide a sufficient return requirement above long-

⁵³ Source: Bloomberg Professional.

term debt costs. In the second approach, I relied on the median DCF result for the proxy group as opposed to the mean and did not exclude any DCF results for individual companies. In general, the median is not affected to a large degree by the presence of outliers and thus can be applied when it is determined that a data may include outliers.

Q. What were the results of your Constant Growth DCF analyses?

A. Figure 8 (see also Exhibit AEB-4) summarizes the results of my DCF analyses. As shown in Figure 8, the median and mean DCF results range from 9.48 percent to 9.62 percent, and the median high and mean high results are in the range of 10.19 percent to 10.23 percent. While I also summarize the low DCF results, given the expected underperformance of utility stocks and thus the likelihood that the DCF model is understating the cost of equity, I do not believe it is appropriate to consider the low DCF results at this time.

Figure 6: Constant Growth Discounted Cash Flow Results

Constant Growth DCF - Median			
	Median Low	Median	Median High
30-Day Average	8.92%	9.58%	10.19%
90-Day Average	8.79%	9.48%	10.16%
180-Day Average	8.81%	9.52%	10.17%
Constant Growth DCF - Average w/ Exclusions			
	Mean Low	Mean	Mean High
30-Day Average	8.68%	9.52%	10.12%
90-Day Average	8.70%	9.54%	10.14%
180-Day Average	8.92%	9.62%	10.23%

Q. What are your conclusions about the results of the DCF models?

A. As discussed previously, one primary assumption of the Constant Growth DCF model is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. Since utility stocks are expected to underperform the broader market over the near-

1 term as interest rates increases, it is important to consider the results of the DCF models
2 with caution. As discussed in Section VI of my Direct Testimony, as interest rates increase,
3 investors have historically rotated out of this sector resulting in a decline in utility stock
4 prices. A decline in stock prices results in an increase in the dividend yield in the DCF
5 model, which results in a higher ROE. This means that the results of the current DCF
6 models are below where they would otherwise be under more normal market conditions.
7 Therefore, while I have given weight to the results of the Constant Growth DCF model,
8 my recommendation also gives weight to the results of other ROE estimation models.

C. CAPM Analysis

9 **Q. Please briefly describe the CAPM.**

10 A. The CAPM is a risk premium approach that estimates the cost of equity for a given security
11 as a function of a risk-free return plus a risk premium to compensate investors for the non-
12 diversifiable, systematic risk of that security. Systematic risk is the risk inherent in the
13 entire market or market segment—which cannot be diversified away using a portfolio of
14 assets. Unsystematic risk is the risk of a specific company that can, theoretically, be
15 mitigated through portfolio diversification.

16 The CAPM is defined by four components, each of which must theoretically be a
17 forward-looking estimate:

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

19 Where:

20 K_e = the required market ROE;

21 β = Beta coefficient of an individual security;

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

2 r_m = the required return on the market.

3 In this specification, the term $(r_m - r_f)$ represents the market risk premium.
4 According to the theory underlying the CAPM, because unsystematic risk can be
5 diversified away, investors should only be concerned with systematic or non-diversifiable
6 risk. Systematic risk is measured by Beta. Beta is a measure of the volatility of a security
7 as compared to the market as a whole. Beta is defined as:

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

8 The variance of the market return (i.e., Variance (r_m)) is a measure of the
9 uncertainty of the general market, and the covariance between the return on a specific
10 security and the general market (i.e., Covariance (r_e, r_m)) reflects the extent to which the
11 return on that security will respond to a given change in the general market return. Thus,
12 Beta represents the risk of the security relative to the general market.

13 **Q. What risk-free rate did you use in your CAPM analysis?**

14 A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day average
15 yield on 30-year U.S. Treasury bonds, which is 1.93 percent;⁵⁴ (2) the average projected
16 30-year U.S. Treasury bond yield for the first quarter of 2022 through the first quarter of
17 2023, which is 2.50 percent;⁵⁵ and (3) the average projected 30-year U.S. Treasury bond
18 yield for 2023 through 2027, which is 3.50 percent.⁵⁶

⁵⁴ Bloomberg Professional as of September 30, 2021.

⁵⁵ Blue Chip Financial Forecasts, Vol. 40, No. 10, October 1, 2021, at 2.

⁵⁶ Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14.

1 **Q. Would you place more weight on one of these scenarios?**

2 A. Yes. Based on current market conditions, I place more weight on the results of the
3 projected yields on the 30-year Treasury bonds. As discussed previously, the estimation
4 of the cost of equity in this case should be forward-looking because it is the return that
5 investors would receive over the future rate period. Therefore, the inputs and assumptions
6 used in the CAPM analysis should reflect the expectations of the market at that time. While
7 I have included the results of a CAPM analysis that relies on the current average risk-free
8 rate, this analysis fails to take into consideration the effect of the market's expectations for
9 interest rate increases on the cost of equity.

10 **Q. What Beta coefficients did you use in your CAPM analysis?**

11 A. As shown on Exhibit AEB-5, I used the Beta coefficients for the proxy group companies
12 as reported by Bloomberg and Value Line. The Beta coefficients reported by Bloomberg
13 were calculated using ten years of weekly returns relative to the S&P 500 Index. Value
14 Line's calculation is based on five years of weekly returns relative to the New York Stock
15 Exchange Composite Index.

16 Additionally, as shown in Exhibit AEB-5 and AEB-6, I also considered an
17 additional CAPM analysis which relies on the long-term average utility Beta coefficient
18 for the companies in my proxy group. The long-term average utility Beta coefficient was
19 calculated as an average of the Value Line Beta coefficients for the companies in my proxy
20 group from 2011 through 2020.

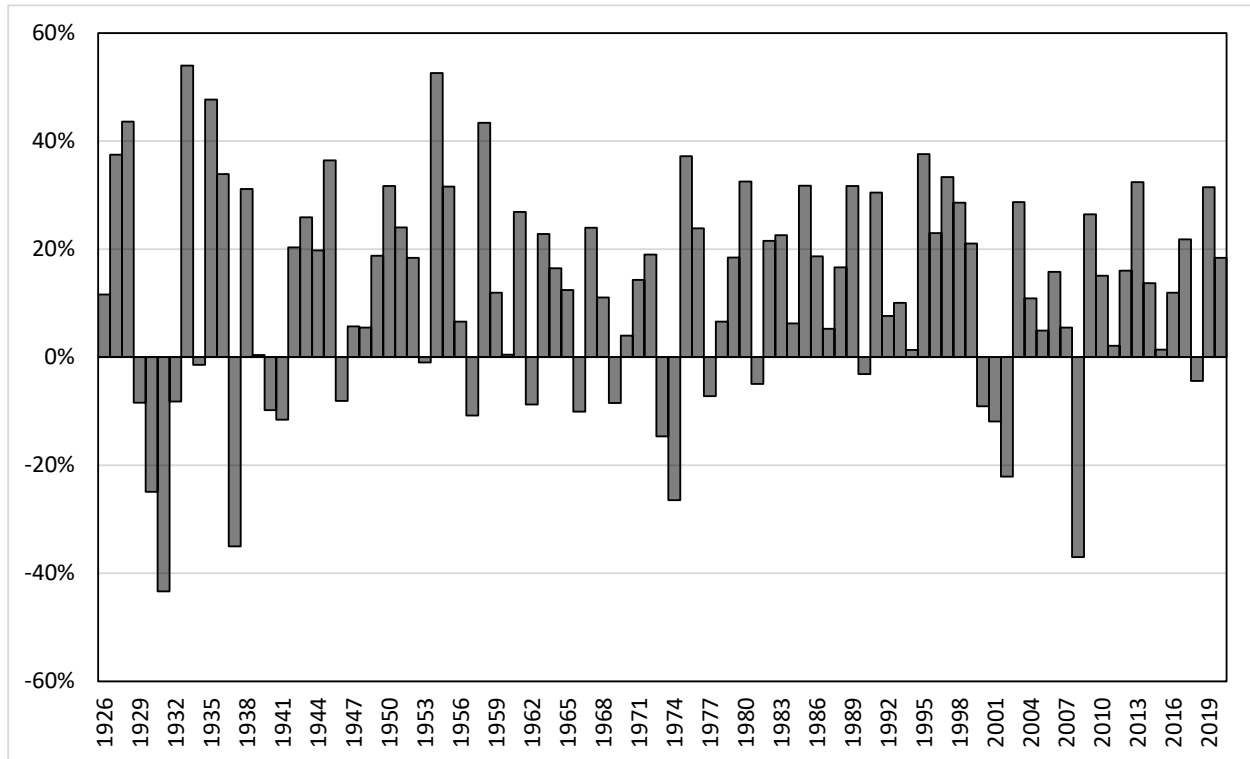
1 **Q. How did you estimate the market risk premium in the CAPM?**

2 A. As shown in Exhibit AEB-7, I estimated the Market Risk Premium (“MRP”) as the
3 difference between the implied expected equity market return and the risk-free rate. The
4 expected return on the S&P 500 Index is calculated using the Constant Growth DCF model
5 discussed earlier in my testimony for the companies in the S&P 500 Index. In my
6 calculation of the market return, I included companies in the S&P 500 that: 1) had either a
7 dividend yield or Value Line long-term earnings projection; and 2) had a Value Line long-
8 term earnings growth rate that was greater than 0 percent and less than or equal to 20
9 percent. Based on an estimated market capitalization-weighted dividend yield of 1.56
10 percent and a weighted long-term growth rate of 11.29 percent, the estimated required
11 market return for the S&P 500 Index is 12.94 percent.

12 **Q. How does the current expected market return of 12.94 percent compare to observed**
13 **historical market returns?**

14 A. Given the range of annual equity returns that have been observed over the past century
15 (shown in Figure 9), a current expected return of 12.94 percent is not unreasonable. In 49
16 out of the past 95 years (or approximately 52 percent of observations), the realized equity
17 return was at least 12.94 percent or greater.

Figure 7: Realized U.S. equity market returns (1926-2020) ⁵⁷



Q. Did you consider another form of the CAPM in your analysis?

A. Yes. I have also considered the results of an ECAPM or alternatively referred to as the Zero-Beta CAPM⁵⁸ in estimating the cost of equity for OG&E. The ECAPM calculates the product of the adjusted Beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium, without any effect from the Beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

⁵⁷ Depicts total annual returns on large company stocks, as reported in the 2021 Duff and Phelps SBBI Yearbook.

⁵⁸ See e.g., Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 189.

1
$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [5]$$

2 Where:

3 k_e = the required market ROE;

4 β = Adjusted Beta coefficient of an individual security;

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

6 r_m = the required return on the market as a whole.

7 In essence, the Empirical form of the CAPM addresses the tendency of the
8 “traditional” CAPM to underestimate the cost of equity for companies with low Beta
9 coefficients such as regulated utilities. In that regard, the ECAPM is not redundant to the
10 use of adjusted Betas; rather, it recognizes the results of academic research indicating that
11 the risk-return relationship is different (in essence, flatter) than estimated by the CAPM,
12 and that the CAPM underestimates the “alpha,” or the constant return term.⁵⁹

13 As with the CAPM, my application of the ECAPM uses the forward-looking market
14 risk premium estimates, the three yields on 30-year Treasury securities noted earlier as the
15 risk-free rate, and the Bloomberg, Value Line, and long-term average Beta coefficients.

16 **Q. What are the results of your CAPM analyses?**

17 A. As shown in Figure 10 (see also Exhibit AEB-5), my traditional CAPM analysis produces
18 a range of returns from 9.81 percent to 11.85 percent. The ECAPM analysis results range
19 from 10.59 percent to 12.12 percent.

⁵⁹ *Id.*, at 191.

Figure 8: CAPM Results

	Current Risk-Free Rate (1.93%)	Q1 2022 – Q1 2023 Projected Risk-Free Rate (2.50%)	2023-2027 Projected Risk-Free Rate (3.50%)
CAPM			
Value Line Beta	11.66%	11.73%	11.85%
Bloomberg Beta	10.75%	10.87%	11.07%
Long-term Avg. Beta	9.81%	9.97%	10.40%
ECAPM			
Value Line Beta	11.98%	12.03%	12.12%
Bloomberg Beta	11.30%	11.38%	11.53%
Long-term Avg. Beta	10.59%	10.71%	11.04%

D. Bond Yield Plus Risk Premium Analysis

Q. Please describe the Bond Yield Plus Risk Premium approach.

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as a bondholder. That is, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. In my analysis, I used actual authorized returns for electric utility companies as the historical measure of the cost of equity to determine the risk premium.

Q. Are there other considerations that should be addressed in conducting this analysis?

A. Yes, there are. It is important to recognize both academic literature and market evidence indicating that the equity risk premium (as used in this approach) is inversely related to the level of interest rates. That is, as interest rates increase, the equity risk premium decreases, and vice versa. Consequently, it is important to develop an analysis that: (1) reflects the

1 inverse relationship between interest rates and the equity risk premium; and (2) relies on
2 recent and expected market conditions. Such an analysis can be developed based on a
3 regression of the risk premium as a function of U.S. Treasury bond yields. If we let
4 authorized ROEs for electric utilities serve as the measure of required equity returns and
5 define the yield on the long-term U.S. Treasury bond as the relevant measure of interest
6 rates, the risk premium simply would be the difference between those two points.⁶⁰

7 **Q. Is the Bond Yield Plus Risk Premium analysis relevant to investors?**

8 A. Yes, it is. Investors are aware of ROE awards in other jurisdictions, and they consider
9 those awards as a benchmark for a reasonable level of equity returns for utilities of
10 comparable risk operating in other jurisdictions. Because my Bond Yield Plus Risk
11 Premium analysis is based on authorized ROEs for utility companies relative to
12 corresponding Treasury yields, it provides relevant information to assess the return
13 expectations of investors.

14 **Q. What did your Bond Yield Plus Risk Premium analysis reveal?**

15 A. As shown in Figure 11 below, from 1992 through September 2021, there was a strong
16 negative relationship between risk premia and interest rates. To estimate that relationship,
17 I conducted a regression analysis using the following equation:

18
$$RP = a + b(T) [6]$$

⁶⁰ See e.g., S. Keith Berry, Interest Rate Risk and Utility Risk Premia during 1982-93, Managerial and Decision Economics, Vol. 19, No. 2 (March, 1998), in which the author used a methodology similar to the regression approach described below, including using allowed ROEs as the relevant data source, and came to similar conclusions regarding the inverse relationship between risk premia and interest rates. See also Robert S. Harris, Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return, Financial Management, Spring 1986, at 66.

1 Where:

2 RP = Risk Premium (difference between allowed ROEs and the yield on 30-year U.S.
3 Treasury bonds)

4 a = intercept term

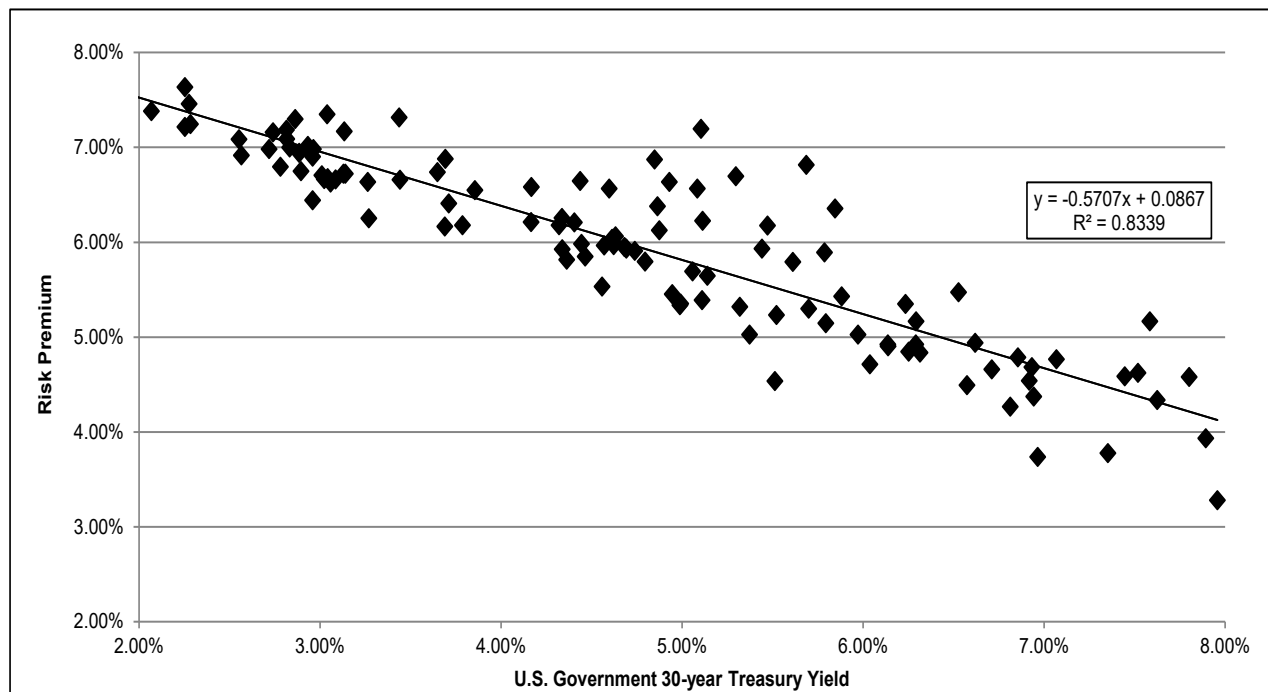
5 b = slope term

6 T = 30-year U.S. Treasury bond yield

7 Data regarding allowed ROEs were derived from 666 vertically integrated electric
8 utility rate cases from 1992 through September 2021 as reported by Regulatory Research
9 Associates (“RRA”).⁶¹ This equation’s coefficients were statistically significant at the
10 99.00 percent level.

⁶¹ This analysis began with a total of 1,321 electric utility cases, which were screened to eliminate limited issue rider cases, transmission cases, distribution only cases, and cases that did not specify an authorized ROE. After applying those screening criteria, the analysis was based on data for 666 cases.

Figure 9: Risk Premium Results



As shown on Exhibit AEB-8, based on the current 30-day average of the 30-year U.S. Treasury bond yield (i.e., 1.93 percent), the risk premium would be 7.57 percent, resulting in an estimated ROE of 9.49 percent. Based on the near-term (Q1 2022 – Q1 2023) projections of the 30-year U.S. Treasury bond yield (i.e., 2.50 percent), the risk premium would be 7.24 percent, resulting in an estimated ROE of 9.74 percent. Based on longer-term (2023 – 2027) projections of the 30-year U.S. Treasury bond yield (i.e., 3.50 percent), the risk premium would be 6.67 percent, resulting in an estimated ROE of 10.17 percent.

Q. How did the results of the Bond Yield Risk Premium inform your recommended ROE for OG&E?

A. I have considered the results of the Bond Yield Risk Premium analysis in setting my recommended ROE for OG&E. As noted above, investors consider the ROE award of a

1 company when assessing the risk of that company as compared to utilities of comparable
2 risk operating in other jurisdictions. The Bond Yield Plus Risk Premium analysis considers
3 this comparison by estimating the return expectations of investors based on the current and
4 past ROE awards of electric utilities across the U.S.

VII. REGULATORY AND BUSINESS RISKS

5 **Q. Do the DCF, CAPM and ECAPM results for the proxy group, taken alone, provide**
6 **an appropriate estimate of the cost of equity for OG&E?**

7 A. No. These results provide only a range of the appropriate estimate of the Company's cost
8 of equity. There are several additional factors that must be taken into consideration when
9 determining where the Company's cost of equity falls within the range of results. These
10 factors, which are discussed below, should be considered with respect to their overall effect
11 on the Company's risk profile.

E. Capital Expenditures

12 **Q. Please summarize the Company's capital expenditure requirements.**

13 A. The Company's current projections for 2021 through 2025 include approximately \$4.1
14 billion in capital investments over the next five years.⁶² The Company's capital investment
15 projections do not include the updates resulting from the October 2021 Integrated
16 Resources Plan nor do they include additional investments needed to address customer
17 growth and grid resiliency improvements in 2022 and beyond. Based on the Company's
18 net utility plant of approximately \$8.78 billion as of December 31, 2020,⁶³ the Company's

⁶² Data provided by OG&E.

⁶³ *Ibid.*

1 identified capital expenditures are approximately 47 percent of OG&E's net utility plant as
2 of December 31, 2020.

3 **Q. How is the Company's risk profile affected by its substantial capital expenditure**
4 **requirements?**

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

10 **Q. Do credit rating agencies recognize the risks associated with elevated levels of capital**
11 **expenditures?**

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

16 When applicable, a jurisdiction's willingness to support large capital
17 projects with cash during construction is an important aspect of our analysis.
18 This is especially true when the project represents a major addition to rate
19 base and entails long lead times and technological risks that make it
20 susceptible to construction delays. Broad support for all capital spending is
21 the most credit-sustaining. Support for only specific types of capital
22 spending, such as specific environmental projects or system integrity plans,
23 is less so, but still favorable for creditors. Allowance of a cash return on
24 construction work-in-progress or similar ratemaking methods historically
25 were extraordinary measures for use in unusual circumstances, but when
26 construction costs are rising, cash flow support could be crucial to maintain
27 credit quality through the spending program. Even more favorable are those

1 jurisdictions that present an opportunity for a higher return on capital
2 projects as an incentive to investors.⁶⁴

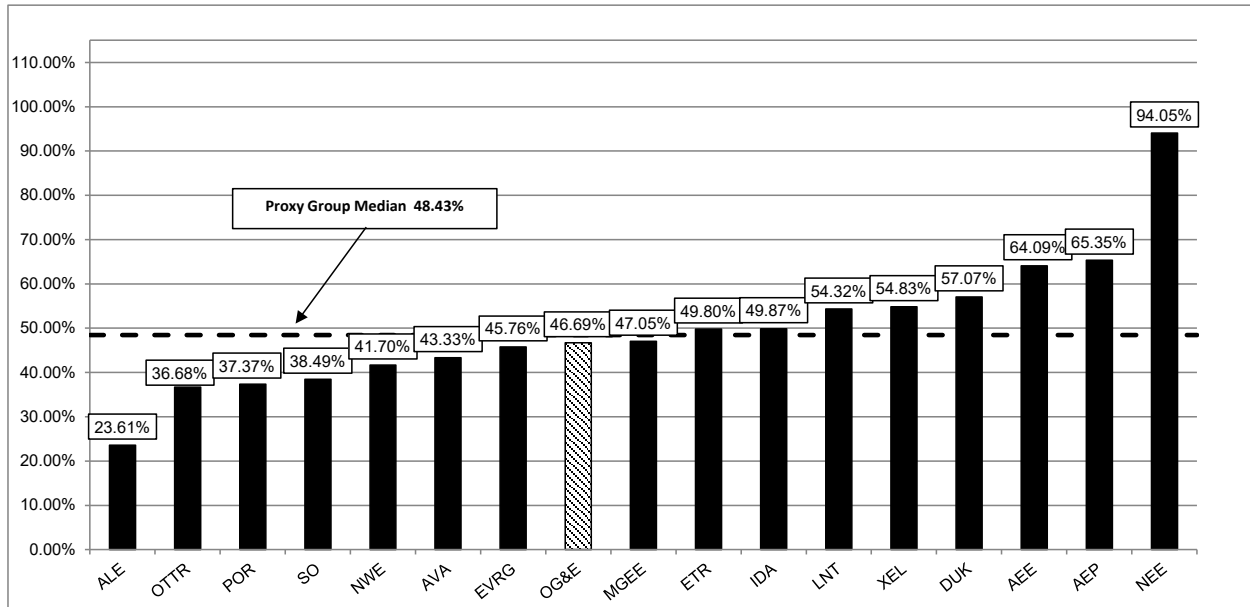
3 Therefore, to the extent that OG&E's rates do not continue to permit the recovery its capital
4 investments on a regular basis, the Company would face increased recovery risk and thus
5 increased pressure on its credit metrics.

6 **Q. How do OG&E's capital expenditure requirements compare to those of the proxy**
7 **group companies?**

8 A. As shown in Exhibit AEB-10, I calculated the ratio of expected capital expenditures to net
9 utility plant for OG&E and each of the companies in the proxy group by dividing each
10 company's projected capital expenditures for the period from 2022-2025 by its total net
11 utility plant as of December 31, 2020. As shown in Exhibit AEB-10 (see also Figure 12
12 below), OG&E's ratio of capital expenditures as a percentage of net utility plant is 46.69
13 percent, which is slightly below the median for the proxy group companies of 48.43
14 percent. However, 51.19 percent of the operating subsidiaries of the proxy group
15 companies have capital expenditure tracking mechanisms. OG&E does not have a similar
16 mechanism which results in greater overall risk for OG&E as compared with the proxy
17 group companies.

⁶⁴ S&P Global Ratings, "Assessing U.S. Investor-Owned Utility Regulatory Environments," August 10, 2016, at 7.

Figure 10: Comparison of Capital Expenditures – Proxy Group Companies



Q. Does OG&E have a comprehensive capital tracking mechanism to recover the costs associated with its capital expenditures plan between rate cases?

A. Currently, OG&E has a Grid Enhancement Mechanism (“GEM”) which allows the Company to recover a portion of the costs associated with grid enhancement capital expenditures that have been placed in service in 2020 and 2021.⁶⁵ However, it is important to note that the majority of the costs included in OG&E’s capital expenditures plan do not qualify for cost recovery through the GEM. In fact, the GEM is limited to \$7 million annually. Therefore, considering the mechanisms currently authorized for the Company, OG&E would still depend on rate case filings for the majority of its capital cost recovery.

⁶⁵ The Company also has a Southwest Power Pool Cost Tracker, however this tracker passes through the costs of third-party owned transmission projects.

1 **Q. How would the Company's proposed PBR affect the Company's ability to recover**
2 **capital expenditures between rate cases?**

3 A. The Company's proposed PBR would allow it to adjust rates annually if earnings reflecting
4 total cost of service, including incremental capital investment, are outside of the approved
5 ROE bandwidth of 50 basis points above or below the authorized ROE. Therefore, if the
6 variance is less than 50 basis points below or above the authorized ROE, there would be
7 no adjustment to OG&E's rates in the following year under the proposal. OG&E would
8 still carry the entire risk for instances where the earned ROE was below the authorized
9 ROE but not greater than 50 basis points below the authorized ROE. Further, the PBR is
10 still subject to full prudence review, therefore while the PBR sets a schedule for the timing
11 of reviewing investments, it does not guarantee recovery. As a result, the Company's
12 proposed PBR mitigates but does not eliminate the cost recovery risk associated with
13 OG&E's elevated capital expenditures plan.

14 **Q. Have you reviewed the capital cost recovery mechanism available to the companies**
15 **in your proxy group?**

16 A. Yes, I have. As shown in Exhibit AEB-11, approximately 50.59 percent of the operating
17 companies held by the proxy group recover costs through capital tracking mechanisms.
18 Further, approximately 17.65 percent of the proxy group companies have formula rate
19 plans, which allow for periodic adjustments to rates. Since a majority of the proxy group
20 companies have already implemented capital cost recovery mechanisms, OG&E would not
21 have less risk than the benchmark group if the Company's proposed PBR was approved.
22 However, to the extent that OG&E is not granted its proposed PBR in this rate case, the

1 Company's risk would be elevated relative to the proxy group due to the limited capital
2 cost recovery available to OG&E between rate cases through the GEM.

3 **Q. What are your conclusions regarding the effect of the Company's capital spending**
4 **requirements on its risk profile and cost of capital?**

5 A. The Company's capital expenditure requirements as a percentage of net utility plant are
6 significant and will continue over the next few years. Additionally, while OG&E does
7 have the GEM to recover qualifying capital costs and is proposing a PBR, the mechanisms
8 do not entirely mitigate the risk associated with OG&E's significant capital expenditure
9 plan. Moreover, a majority of the operating subsidiaries of the proxy companies have
10 either a comprehensive capital tracking mechanism to recover their projected capital
11 expenditures or operate under a PBR. As a result, if OG&E's proposed PBR is authorized,
12 the Company would have comparable risk to the proxy group. However, if the Company's
13 PBR proposal is not granted than the Company will have greater risk relative to the proxy
14 group companies which warrants an authorized ROE above the proxy group mean.

F. Regulatory Risk

15 **Q. Please explain how the regulatory environment affects investors' risk assessments.**

16 A. The ratemaking process is premised on the principle that, for investors and companies to
17 commit the capital needed to provide safe and reliable utility service, the subject utility
18 must have the opportunity to recover the return of, and the market-required return on,
19 invested capital. Regulatory authorities recognize that because utility operations are capital
20 intensive, regulatory decisions should enable the utility to attract capital at reasonable
21 terms; doing so balances the long-term interests of investors and customers. Utilities must

1 finance their operations and require the opportunity to earn a reasonable return on their
2 invested capital to maintain their financial profiles. OG&E is no exception. In that respect,
3 the regulatory environment is one of the most important factors considered in both debt
4 and equity investors' risk assessments.

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

14 Equity investors require that the authorized return be adequate to provide a risk-
15 comparable return on the equity portion of the utility's capital investments. Because equity
16 investors are the residual claimants on the utility's cash flows (which is to say that the
17 equity return is subordinate to interest payments), they are particularly concerned with the
18 strength of regulatory support and its effect on future cash flows.

19 **Q. Please explain how credit rating agencies consider regulatory risk in establishing a**
20 **company's credit rating.**

21 A. Both S&P and Moody's consider the overall regulatory framework in establishing credit
22 ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory

1 framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4)
2 financial strength, liquidity, and key financial metrics. Of these criteria, regulatory
3 framework, and the ability to recover costs and earn returns are each given a broad rating
4 factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent
5 weighting in the overall assessment of business and financial risk for regulated utilities.⁶⁶

6 S&P also identifies the regulatory framework as an important factor in credit ratings
7 for regulated utilities, stating: "One significant aspect of regulatory risk that influences
8 credit quality is the regulatory environment in the jurisdictions in which a utility
9 operates."⁶⁷ S&P identifies four specific factors that it uses to assess the credit implications
10 of the regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability;
11 (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory
12 independence and insulation.⁶⁸

13 **Q. How does the regulatory environment in which a utility operates affect its access to**
14 **and cost of capital?**

15 A. The regulatory environment can significantly affect both the access to, and cost of capital
16 in several ways. First, the proportion and cost of debt capital available to utility companies
17 are influenced by the rating agencies' assessment of the regulatory environment. As noted
18 by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly, the
19 regulatory environment and how the utility adapts to that environment are the most

⁶⁶ Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 4.

⁶⁷ Standard & Poor's Global Ratings, Ratings Direct, U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others, June 25, 2018, at 2.

⁶⁸ *Id.*, at 1.

1 important credit considerations.”⁶⁹ Moody’s further highlighted the relevance of a stable
2 and predictable regulatory environment to a utility’s credit quality, noting: “[b]roadly
3 speaking, the Regulatory Framework is the foundation for how all the decisions that affect
4 utilities are made (including the setting of rates), as well as the predictability and
5 consistency of decision-making provided by that foundation.”⁷⁰

6 **Q. Have you conducted any analysis of the regulatory framework in Oklahoma relative**
7 **to the jurisdictions in which the companies in your proxy group operate?**

8 A. Yes. I have evaluated the regulatory framework in Oklahoma considering two factors
9 which are important to ensuring OG&E maintains access to capital at reasonable terms. As
10 I will discuss in more detail below, the two factors are: 1) cost recovery mechanisms which
11 allow a utility to recover costs in a timely manner between rate cases and provide the utility
12 the opportunity to earn its authorized return; and 2) comparable return standard because an
13 awarded ROE that is significantly below the ROEs awarded to other utilities with
14 comparable risks can affect the ability of a utility to attract capital at reasonable terms.

15 **1. Cost Recovery Mechanisms**

16 **Q. Have you conducted any analysis to compare the cost recovery mechanisms of OG&E**
17 **to the cost recovery mechanisms approved in the jurisdictions in which the companies**
18 **in your proxy group operate?**

19 A. Yes. I selected four mechanisms that are important to provide a regulated utility an
20 opportunity to earn its authorized ROE. These are: 1) test year convention (i.e., forecast

⁶⁹ Moody’s Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 6.

⁷⁰ *Ibid.*

1 vs. historical); 2) method for determining rate base (i.e., average vs. year-end); 3) use of
2 revenue decoupling mechanisms or formula-based rates that mitigate volumetric risk; and
3 4) prevalence of capital cost recovery between rate cases. The results of this cost recovery
4 assessment are shown in Exhibit AEB-11 and are summarized below.

5 Test year convention: OG&E is relying on a historical test year as of September 30,
6 2021 with limited “known and measurable” changes occurring within six months
7 of the end of the test year. By contrast, 42 out of 85 (49.41 percent) of the operating
8 companies held by the proxy group provide service in jurisdictions that use either
9 a fully or partially forecasted test year. Forecast test years have been relied on for
10 several years and produce cost estimates that are more reflective of future costs
11 which results in more accurate recovery of incurred costs and mitigates the
12 regulatory lag associated with historical test years. As Lowry, Hovde, Getachew,
13 and Makos explain in their 2010 report, Forward Test Years for US Electric
14 Utilities:

15 This report provides an in depth discussion of the test year issue. It includes
16 the results of empirical research which explores why the unit costs of
17 electric IOUs are rising and shows that utilities operating under forward test
18 years realize higher returns on capital and have credit ratings that are
19 materially better than those of utilities operating under historical test years.
20 The research suggests that shifting to a future test year is a prime strategy
21 for rebuilding utility credit ratings as insurance against an uncertain
22 future.⁷¹

23 Rate Base: The Company’s rate base is determined using the year-end rate base
24 method which is consistent with the proxy group since 39 out of 85 (45.88 percent)

⁷¹ M.N. Lowry, D. Hovde, L. Getachew, and M. Makos, Forward Test Years for US Electric Utilities, prepared for Edison Electric Institute, August 2010, at 1.

1 of the operating companies provide service in jurisdictions where rate base is
2 determined using the year-end method.

3 Non-Volumetric Rate Design: OG&E does have partial protection against
4 volumetric risk in Oklahoma through an Energy Efficiency Program (“EEP”) Rider
5 which allows the Company to recover lost net revenue (“LNR”) as a result of
6 energy efficiency programs. Additionally, the Company is proposing a PBR which
7 would allow OG&E to adjust rates annually if earnings are outside of an approved
8 ROE bandwidth. Similarly, 48 out of 85 (56.47 percent) of the operating companies
9 held by the proxy group have non-volumetric rate design through either straight
10 fixed variable rate design, revenue decoupling mechanisms or formula rate plans
11 that allow them to break the link between customer usage and revenues.

12 Capital Cost Recovery: OG&E has a capital tracking mechanism (i.e., “GEM”) to
13 recover a limited amount of capital investment costs between rate cases.
14 Additionally, the Company’s proposed PBR would allow OG&E to recover
15 prudently-incurred, incremental capital investment on an annual basis. As
16 discussed above, approximately 50.59 percent of the operating companies held by
17 the proxy group have some form of capital cost recovery mechanism in place.
18 Further, approximately 17.65 percent have formula rate plans which allow for
19 periodic increases in rates if earnings are outside of an approved bandwidth.
20 Therefore, if the Company’s proposed PBR is granted, I conclude the Company is
21 comparable to the proxy group companies in the ability to recover capital costs.
22 However, the Company’s risk would increase relative to the proxy group if the
23 Company’s proposed PBR were not approved.

1 **2. Inflation**

2 **Q. How does inflation affect the Company's overall risk profile?**

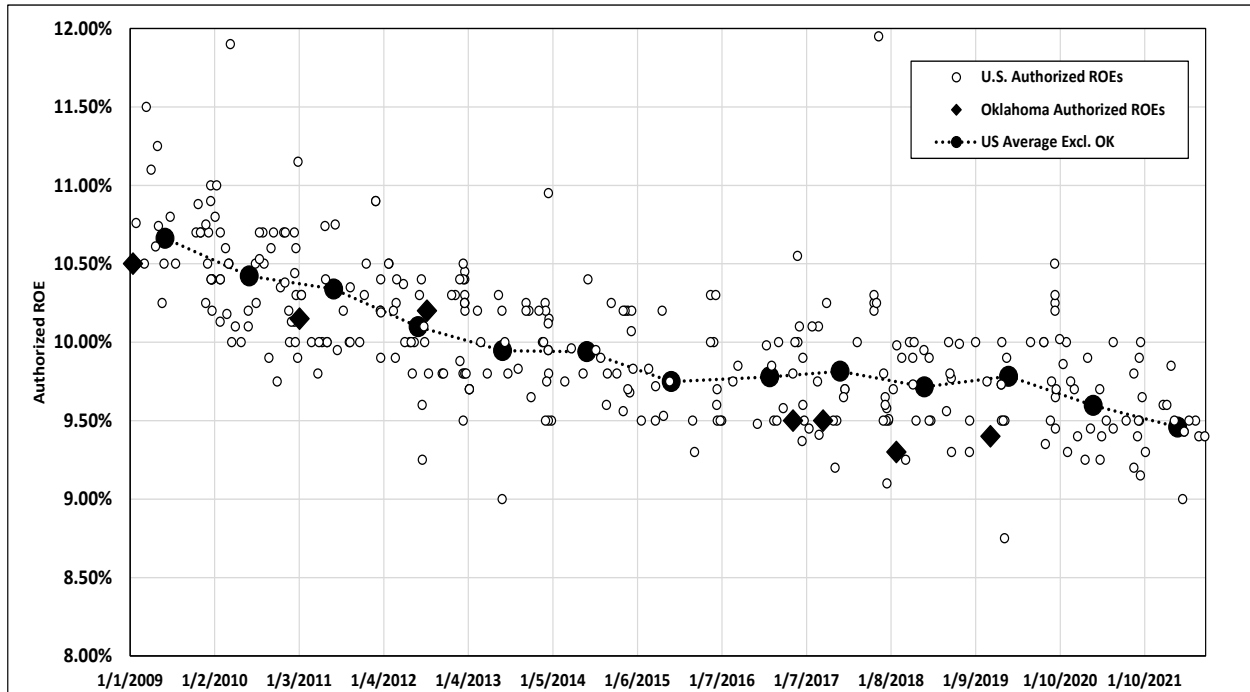
3 A. Inflation increases the overall operating risk of the company. Current levels of inflation
4 are considerably higher than the Federal Reserve's target of 2.0 percent. As of November
5 2021, the year over year change inflation was 6.88 percent. While some amount of inflation
6 can be offset through efficiencies and growth in operations, current levels are likely to
7 result in regulatory lag, as operations and maintenance expenses increase significantly
8 beyond the levels established in the test period for ratemaking purposes. Without the ability
9 to adjust for inflationary pressure, it is likely that higher than normal inflation will reduce
10 the likelihood that the Company will earn the authorized ROE that is determined in this
11 rate proceeding. To the extent that cash flow is affected by inflation, credit metrics will
12 also be stressed, potentially resulting in increased pressure on credit metrics.

13 **3. Authorized ROEs**

14 **Q. How do recent returns in Oklahoma compare to the authorized returns in other**
15 **jurisdictions?**

16 A. Figure 13 below shows the authorized returns for vertically integrated electric utilities in
17 other jurisdictions since January 2009, and the returns authorized in Oklahoma for electric
18 companies. While partially the result of settlement agreements approved by the
19 Commission, as shown in Figure 13, the authorized returns for electric companies in
20 Oklahoma have been below the average authorized ROE for vertically integrated electric
21 utilities in other jurisdictions over the past five years.

Figure 11: Comparison of Oklahoma and U.S. Authorized Electric Returns⁷²



Q. Should the Commission be concerned about authorizing equity returns that are at the low end of the range established by other state regulatory jurisdictions?

A. Yes. Placing OG&E at the low end of authorized ROEs outside Oklahoma over the longer term can negatively affect the Company's access to capital and the overall cost of capital. As I discuss below, the recent negative rate case determination, including a below average authorized ROE, for Arizona Public Service resulted in a 24 percent decline in the share price for Pinnacle West Capital, increasing the overall cost of equity for that company.

Second, as noted in Sections IV and VI, the economy is in the expansion phase of the business cycle; thus, interest rates are expected to increase, and utilities are expected to

⁷² S&P Capital IQ Pro. Includes only vertically integrated electric utility ROEs between January 1, 2009, and September 30, 2021. The chart excludes the authorized returns in Vermont since they are established based on a formulaic approach that is directly linked to interest rates and therefore is affected by market conditions and monetary policy.

1 underperform over the near-term. If utility stocks underperform over the near-term then
2 utility dividend yields will increase resulting in higher estimates of the ROE results
3 produced by the DCF model. Therefore, the results of the DCF model will underestimate
4 investors' expected ROE over the time period in which OG&E's rates will be in effect. As
5 a result, it is important that the Commission consider, the results of alternative methods
6 such as the forward looking CAPM, ECAPM, and Bond Yield Plus Risk Premium and the
7 returns that have been authorized by other electric utilities across the U.S.

8 **Q. Do credit rating agencies consider the authorized ROE in the overall risk assessment**
9 **of a utility?**

10 A. Yes, they do. To the extent that the returns in a jurisdiction are lower than the returns that
11 have been authorized more broadly, credit rating agencies will consider this in the overall
12 risk assessment of the regulatory jurisdiction in which the company operates. It is important
13 to consider credit ratings because they affect the overall cost of borrowing, and they act as
14 a signal to equity investors about the risk of investing in the equity of a company.
15 Therefore, lower credit ratings can affect both the cost of debt and equity. Examples of
16 recent credit rating agency responses include ALLETE, Inc. and Pinnacle West Capital
17 Corporation. Moody's downgraded ALLETE, Inc. from A3 to Baa1 primarily based on
18 the less than favorable outcome in Minnesota Power's last fully litigated rate case in
19 Minnesota which included what Moody's noted was a below average authorized ROE of
20 9.25 percent.⁷³ In addition, FitchRatings downgraded CenterPoint Energy Houston
21 Electric's ("CEHE") Long-Term Issuer Default rating from A- to BBB+ and revised the

⁷³ Moody's Investors Service, Credit Opinion: ALLETE, Inc. Update following downgrade, at 3 (April 3, 2019).

1 rating outlook from Stable to Negative following the approval of an unfavorable outcome
2 in a recent rate case in Texas.⁷⁴ Finally, FitchRatings recently downgraded and maintained
3 a negative outlook for Arizona Public Service Company (“APS”) and its parent, Pinnacle
4 West Capital Corporation, following the hearings conducted by the Arizona Corporation
5 Commission (“ACC”) in October 2021 regarding APS’ current rate case proceeding.⁷⁵
6 While the ACC had not issued a final order in APS’ rate case at the time, FitchRatings
7 noted that the developments at the hearing in October indicate a likely credit negative
8 outcome that will negatively affect the financial metrics of both APS and Pinnacle West
9 Capital Corporation. It is also important to note that Moody’s recently placed both APS
10 and Pinnacle West Capital Corporation on review for downgrade following the ACC
11 hearing in October.⁷⁶

12 **Q. How has the market responded to the return authorized in the APS proceeding?**

13 A. The market had a strong negative response to the ROE determination in the APS
14 proceeding. S&P Global Market Intelligence (Regulatory Research Associates) noted that
15 noted that this decision was “among the lowest ROEs RRA had encountered in its coverage
16 of vertically integrated electric utilities in the past 30 years”. Guggenheim Securities LLC,
17 an equity analyst that follows Pinnacle West Capital, the parent company of APS, informed
18 its clients that the “Arizona Corporation Commission is now confirmed to be the single

⁷⁴ FitchRatings, Fitch Downgrades CenterPoint Energy Houston Electric to BBB+; Affirms CNP; Outlooks Negative, February 19, 2020.

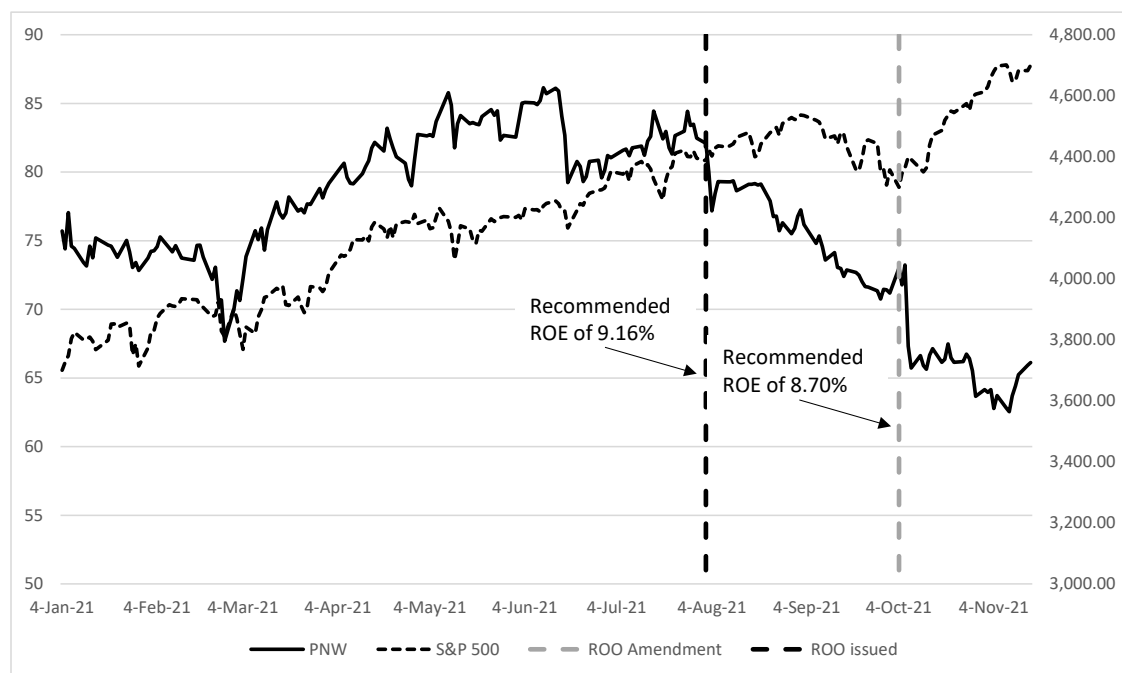
⁷⁵ FitchRatings, “Fitch Downgrades Pinnacle West Capital & Arizona Public Service to 'BBB+'; Outlooks Remain Negative,” October 12, 2021.

⁷⁶ Moody’s Investors Service, “Rating Actions: Moody’s places Pinnacle West and Arizona Public Service ratings on review for downgrade,” October 12, 2021.

1 most value destructive regulatory environment in the country as far as investor-owned
2 utilities are concerned”.

3 As shown in Figure 14 below, shares of Pinnacle West stock, the parent company of APS,
4 have experienced a significant decline since the Commission first introduced its proposal
5 to authorize an ROE that was well below the national average.

Figure 12: Pinnacle West Capital Stock Price vs. S&P 500 utilities.



6
7 **Q. How should the Commission use the information regarding authorized ROEs in other**
8 **jurisdictions in determining the ROE for OG&E?**

9 A. As discussed above, the companies in the proxy group operate in multiple jurisdictions
10 across the U.S. Since OG&E must compete directly for capital with investments of similar
11 risk, it is appropriate to review the authorized ROEs in other jurisdictions. The comparison
12 is important because investors are considering the authorized returns across the U.S. and
13 are likely to invest equity in those utilities with the highest returns.

1 **Q. Have you developed any additional analyses to evaluate the regulatory environment**
2 **in Oklahoma as compared to the jurisdictions in which the companies in your proxy**
3 **group operate?**

4 A. Yes. I have conducted two additional analyses to compare the regulatory framework of
5 Oklahoma to the jurisdictions in which the companies in the proxy group operate.
6 Specifically, I considered two different rankings: (1) the Regulatory Research Associates
7 (“RRA”) ranking of regulatory jurisdictions; and (2) S&P’s ranking of the credit
8 supportiveness of regulatory jurisdictions.

9 **Q. Please explain how you used the RRA ratings to compare the regulatory jurisdictions**
10 **of the proxy group companies with the Company’s regulatory jurisdiction.**

11 A. RRA develops their ranking based on their assessment of how investors perceive the
12 regulatory risk associated with ownership of utility securities in that jurisdiction,
13 specifically reflecting their assessment of the probable level and quality of earnings to be
14 realized by the State’s utilities as a result of regulatory, legislative, and court actions. RRA
15 assigns a ranking for each regulatory jurisdiction between “Above Average/1” to “Below
16 Average/3,” with nine total rankings between these categories. I applied a numeric ranking
17 system to the RRA rankings with “Above Average/1” assigned the highest ranking (“1”) and
18 “Below Average/3” assigned the lowest ranking (“9”). As shown in Exhibit AEB-12,
19 the Oklahoma regulatory environment is ranked as “Average/2,” while the proxy group is
20 ranked between “Average/1” and “Average/2”.

1 **Q. How did you conduct your analysis of the S&P Credit Supportiveness?**

2 A. S&P classifies the regulatory jurisdictions into five categories ranging from “Credit
3 Supportive” to “Most Credit Supportive” based on the level of credit supportiveness.
4 Similar to the RRA regulatory ranking analysis discussed above, I assigned a numerical
5 ranking to each jurisdiction ranked by S&P, from most credit supportive (“1”) to credit
6 supportive (“5”). As shown in Exhibit AEB-13, the proxy group is ranked between very
7 credit supportive and highly credit supportive while the Oklahoma regulatory jurisdiction
8 is only ranked as more credit supportive. Thus, Oklahoma is perceived as being below the
9 average for the proxy group.

10 **Q. What are your conclusions regarding the perceived risks related to the Oklahoma**
11 **regulatory environment?**

12 A. As discussed throughout this section of my testimony, both Moody’s and S&P have
13 identified the supportiveness of the regulatory environment as an important consideration
14 in developing their overall credit ratings for regulated utilities. Considering the regulatory
15 adjustment mechanisms, many of the companies in the proxy group have timely cost
16 recovery through forecasted test years, year-end rate base, cost recovery trackers and
17 revenue stabilization mechanisms (such as formula rate plans). Therefore, if the
18 Company’s PBR is approved, OG&E would have similar cost recovery risk as the proxy
19 group. Although, the Company’s proposed PBR would not fully mitigate either volumetric
20 risk or the cost recovery risk associated with the Company’s capital expenditures plan.
21 Additionally, authorized ROEs in Oklahoma have been below the average authorized
22 ROEs for vertically integrated electric utilities across the U.S. Moreover, the RRA
23 jurisdictional ranking and the S&P credit supportiveness ranking for Oklahoma indicates

1 greater risk than the average for the proxy group. Ultimately, I conclude that the Company
2 has slightly greater than average regulatory risk when compared to the proxy group
3 indicating that the authorized ROE for OG&E should be above the proxy group mean

4 Finally, while my analysis assumes that the Company's proposed PBR will be
5 approved, the business risk of OG&E would increase if the Commission does not approve
6 the Company's proposal. Thus, if the PBR is not approved then the authorized ROE for
7 OG&E should be placed at the high-end of my recommended ROE range of 9.90 percent
8 to 10.50 percent.

G. Flotation Cost

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

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

13 **Q. Why is it important to consider flotation costs in the allowed ROE?**

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

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

19 A. Flotation costs are part of the invested costs of the utility, which are properly reflected on
20 the balance sheet under "paid in capital." They are not current expenses, and, therefore,

1 are not reflected on the income statement. Rather, like investments in rate base or the
2 issuance costs of long-term debt, flotation costs are incurred over time. As a result, the
3 great majority of a utility's flotation cost is incurred prior to the test year but remains part
4 of the cost structure that exists during the test year and beyond, and as such, should be
5 recognized for ratemaking purposes. Therefore, it is irrelevant whether an issuance occurs
6 during the test year or is planned for the test year because failure to allow recovery of past
7 flotation costs may deny OG&E the opportunity to earn its required ROR in the future.

8 **Q. Please provide an example of why a flotation cost adjustment is necessary to**
9 **compensate investors for the capital they have invested.**

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

1 **Q. Is the date of OGE Energy Corp. last issued common equity important in the**
2 **determination of flotation costs?**

3 A. No. As shown in Exhibit AEB-9, OGE Energy Corp. closed on an equity issuance of
4 approximately \$115 million (for a total of 5.3 million shares of common stock) in August
5 2003. The vintage of the issuance, however, is not particularly important because the
6 investor suffers a shortfall in every year that he should have a reasonable opportunity to
7 earn a return on the full amount of capital that he has contributed. Returning to my earlier
8 example, the investor who contributed \$100 is entitled to a reasonable opportunity to earn
9 a return on \$100 not only in the first year after the investment, but in every subsequent year
10 in which he has the \$100 invested. Leaving aside depreciation, which is dealt with
11 separately, there is no basis to conclude that the investor is entitled to earn a return on \$100
12 in the first year after issuance, but thereafter is entitled to earn a return on only \$97. As
13 long as the \$100 is invested, the investor should have a reasonable opportunity to earn a
14 return on the entire amount.

15 **Q. Is the need to consider flotation costs recognized by the academic and financial**
16 **communities?**

17 A. Yes. The need to reimburse shareholders for the lost returns associated with equity issuance
18 costs is recognized by the academic and financial communities in the same spirit that
19 investors are reimbursed for the costs of issuing debt. This treatment is consistent with the
20 philosophy of a fair ROR. According to Dr. Shannon Pratt:

21 Flotation costs occur when new issues of stock or debt are sold to the public.
22 The firm usually incurs several kinds of flotation or transaction costs, which
23 reduce the actual proceeds received by the firm. Some of these are direct
24 out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and

1 prospectus preparation costs. Because of this reduction in proceeds, the
2 firm's required returns on these proceeds equate to a higher return to
3 compensate for the additional costs. Flotation costs can be accounted for
4 either by amortizing the cost, thus reducing the cash flow to discount, or by
5 incorporating the cost into the cost of capital. Because flotation costs are
6 not typically applied to operating cash flow, one must incorporate them into
7 the cost of capital.⁷⁷

8 **Q. How did you calculate the flotation costs for OG&E?**

9 A. My flotation cost calculation is based on the costs of issuing equity that were incurred by
10 OGE Energy Corp. in its most recent common equity issuance. Those issuance costs were
11 applied to my proxy group. Applying the actual issuance costs for OGE Energy Corp.
12 provided in Exhibit AEB-9, to the DCF analysis, the flotation costs are estimated to be 0.15
13 percent (i.e., 15 basis points).

14 **Q. Do your final results include an adjustment for flotation cost recovery?**

15 A. No. I did not make an explicit adjustment for flotation costs to any of my quantitative
16 analyses. Rather, I provide the above result for consideration in my recommended ROE
17 range, which reflects the range of results from my Constant Growth DCF, CAPM, ECAPM
18 and Bond Yield Plus Risk Premium analyses.

H. Increased Demand for Access to Capital

19 **Q. Are you aware of the trends in capital investment in the utilities sector?**

20 A. Yes. Over the last several years electric utility capital investment has increased
21 substantially, responding to the need to replace and upgrade existing aging infrastructure.
22 More recently, the trend of accelerated capital expenditures has expanded to include

⁷⁷ Shannon P. Pratt, Cost of Capital Estimation and Applications, Second Edition, at 220-221.

1 electric, natural gas and water utilities, driven by aging infrastructure, the need to
2 modernize infrastructure and the expanding role of environmental, social and governance
3 considerations in investment decisions. In particular, capital investment in electric utilities
4 is focused on hardening the infrastructure, expanding to include renewal resources, energy
5 efficiency, retirement of generation assets and the transition to decarbonization.

6 **Q. What is the magnitude of the investment in infrastructure that is planned for the**
7 **utilities segment?**

8 A. Standard & Poor's forecasts renewable energy investment to reach \$13.94 billion in 2021,
9 increasing 5 percent in 2022 to \$14.59 billion. In addition, the water utility segment is
10 projected to require \$385 billion to \$1.3 trillion over the next 20 years to expand and
11 modernize water, wastewater and storm water systems. Finally, natural gas utilities are
12 projected to invest \$20.9 billion to replace aging distribution system assets and to meet
13 federal and state level safety mandates.⁷⁸

14 **Q. How does the increased demand for capital in the industry affect a company's access**
15 **to capital?**

16 A. Given the magnitude of the capital investment programs, it is necessary for the regulatory
17 construct to provide strong financial support for regulated utilities to be able to access
18 capital on reasonable terms. Increased pressure on credit metrics resulting from significant
19 capital programs creates incremental risk to equity investors that should be addressed in
20 the authorized ROE. As I will discuss in more detail below, S&P expects utilities to

⁷⁸ S&P Global Market Intelligence, "The Big Picture: 2022 Electric, Natural Gas and Water Utilities Outlook: October 2021 at 4.

1 increase leverage to fund capital expenditure plans necessary to reduce greenhouse gas
2 emission and improve safety and reliability which will place continued pressure on cash
3 flows over the near-term.⁷⁹ In addition, increased demand for capital has the potential to
4 create additional competition for investment in the industry, placing increasing pressure on
5 returns.

6 **Q. Is this a company-specific risk?**

7 A. While the overall market pressure is created by the industry, the need to maintain the
8 financial strength of the utility to support the capital plan is a company-specific risk factor
9 that will likely affect the access to and cost of capital to achieve these large-scale
10 investments. Therefore, companies with stronger financial profiles will have greater access
11 to capital on more reasonable terms, which benefits customers.

12 **Q. What is your conclusion about the implication of market demand for capital on the**
13 **overall return for OG&E?**

14 A. It is important to recognize the need to maintain strong financial metrics to be able to access
15 capital on reasonable terms. Consistent with the *Hope* and *Bluefield* principles, it is
16 necessary that OG&E has access to capital on reasonable terms and that the return provided
17 is commensurate with the return on other investments of similar risk. This is particularly
18 important in a period of elevated capital investment in the company and in the market
19 overall, as companies continue to compete for capital to meet their investment initiatives.

⁷⁹ S&P Global Ratings, “North American Regulated Utilities’ Credit Quality Begins the Year on A Downward Path,” April 7, 2021.

I. February 2021 Winter Storm and Fuel Cost Recovery Risk

1 **Q. What are the important financial considerations resulting from the 2021 Winter**
2 **Storm Event?**

3 A. On February 7, 2021, an extreme weather event (“Extreme Weather Event”) resulted in
4 increased demand for and prices of spot market natural gas purchases for both end use gas
5 consumption and electric power generation. As a result of this event the Company’s energy
6 costs increased significantly, on short notice, requiring immediate access to capital markets
7 to finance supplies to maintain reliability.

8 **Q. What was the total of the increased costs incurred by OG&E during the Extreme**
9 **Winter Event between February 7-21, 2021?**

10 A. OG&E estimates that it spent approximately \$1 billion on a total company basis for natural
11 gas purchases and net SPP energy purchases during the period of February 7-21.⁸⁰ As
12 Company Witness Donald Rowlett noted in his testimony in Cause No. 202100072, this
13 total cost exceeds the Company’s entire fuel cost for 2020 which was \$516 million.⁸¹
14 Further, the Company obtained a \$1 billion credit commitment in order to pay the
15 Company’s bills associated with the Extreme Winter Event. This credit commitment
16 represented a 30 percent increase to the Company’s existing outstanding long-term debt of

⁸⁰ In the Matter of the Application of Oklahoma Gas and Electric Company for a Financing Order Pursuant to the February 2021 Regulated Utility Consumer Protection Act Approving Securitization of Costs Arising From the Winter Weather Event of February 2021, Cause No. 202100072, Oklahoma Corporation Commission, Direct Testimony of Donald R. Rowlett, June 18, 2021, at 12.

⁸¹ *Id.*, at 6.

1 \$3.5 billion as of December 31, 2020.⁸² The Company estimated that of the total
2 incremental cost associated with the Extreme Winter Event, \$838.6 million was specific to
3 OG&E's Oklahoma jurisdiction.⁸³

4 **Q. Has the Company recovered these costs?**

5 A. The Commission recently approved a Settlement Agreement established between the
6 Company and the parties in Cause No. PUD 202100072 to recover the majority of the costs
7 incurred due to the Extreme Winter Event using securitization as outlined in the Act.⁸⁴
8 The settlement agreement estimates a total cost of the Extreme Winter Event for the
9 Company's Oklahoma jurisdiction of \$748.9 million with the parties stipulating that \$739
10 million of the incurred costs should be deemed prudent by the Commission.⁸⁵ Further, the
11 settlement agreement stipulates that the total cost of the Extreme Winter Event to be
12 recovered inclusive of financing and securitization costs is \$760 million.

⁸² In the Matter of the Application of Oklahoma Gas and Electric Company for a Financing Order Pursuant to the February 2021 Regulated Utility Consumer Protection Act Approving Securitization of Costs Arising From the Winter Weather Event of February 2021, Cause No. 202100072, Oklahoma Corporation Commission, Direct Testimony of Charles B. Walworth, June 18, 2021, at 3.

⁸³ In the Matter of the Application of Oklahoma Gas and Electric Company for a Financing Order Pursuant to the February 2021 Regulated Utility Consumer Protection Act Approving Securitization of Costs Arising From the Winter Weather Event of February 2021, Cause No. 202100072, Oklahoma Corporation Commission, Direct Testimony of Donald R. Rowlett, June 18, 2021, at 12.

⁸⁴ Cause No. PUD 202100072, Order No. 722254, December 16, 2021, para 31.

⁸⁵ In the Matter of the Application of Oklahoma Gas and Electric Company for a Financing Order Pursuant to the February 2021 Regulated Utility Consumer Protection Act Approving Securitization of Costs Arising From the Winter Weather Event of February 2021, Cause No. 202100072, Oklahoma Corporation Commission, Settlement Agreement, October 8, 2021, at 1.

1 **Q. How was the Company's financial risk profile been affected by this event?**

2 A. On February 25, 2021, Moody's downgraded the outlook of OG&E and OGE Energy Corp
3 to negative due primarily to uncertainty surrounding the recovery period of the costs
4 incurred during the Extreme Winter Event. Specifically, Moody's noted:

5 The negative outlook on OGE's rating is consistent with that of its primary
6 subsidiary, OG&E, and reflects the increased regulatory uncertainty related
7 to the recovery timeline of the cost incurred to procure natural gas for
8 generation. If the timeframe of the cost recovery is several years, we expect
9 credit metrics to be pressured and fall below 19% for OG&E and 20% for
10 OGE on a sustained basis.⁸⁶

11 Similarly, on March 5, 2021, S&P also downgraded the outlook of OG&E and OGE
12 Energy Corp. to negative as a result of the increased energy costs associated with the
13 Extreme Winter Event. Specifically, S&P noted:

14 The rating agency's negative outlook on parent company OGE reflects its
15 expectation of "weaker financial measures directly associated" with
16 February's extreme winter weather, refinancing risk associated with an
17 expected 364-day, \$1 billion term loan to cover those costs, and uncertainty
18 regarding the recovery of fuel and purchased power costs. S&P Global
19 Ratings also cited execution risk associated with Energy Transfer LP
20 closing its previously announced all-equity acquisition of Enable
21 Midstream Partners, in which OGE owns a 25.5% limited partner interest
22 and 50% general partner interest.

23 Ratings' negative outlook on OG&E reflects the possibility that the
24 company's financial measures, including the ratio of funds from operations
25 to debt, could consistently weaken to below 15% over the next 12 months.⁸⁷

⁸⁶ Moody's Investor Service, Rating Action: Moody's changes outlook of OGE, OG&E to negative, February 25, 2021.

⁸⁷ S&P Capital IQ Pro, "S&P revises OGE Energy, utility subsidiary outlooks to negative on winter costs", March 5, 2021.

1 **Q. What are your conclusions regarding the importance of maintaining the financial**
2 **health of the Company?**

3 A. Financial circumstances resulting from events such as the Extreme Weather Event
4 demonstrate the importance of having access to capital on reasonable terms at all times.
5 This event was sudden and unexpected and required the financing of \$1 billion in short-
6 term debt which the Company has been required to continue to finance along with its
7 existing operations and the ongoing capital expenditure requirements needed to provide
8 reliable and safe service to customers. Without strong financial metrics, the Company may
9 not have had the necessary immediate access to capital or may have had to access capital
10 on unfavorable terms that would have increased costs to customers. Further, without
11 sufficient financial strength, the need to access \$1 billion to finance fuel could have
12 impaired the Company's normal required access to capital for ongoing operations. Further,
13 it is important to recognize that the rating agencies responded negatively, creating
14 additional risk for the Company in the debt markets. These facts demonstrate the need to
15 ensure that the outcomes of ratemaking decisions provide sufficient financial stability to
16 be able to carry these significant financial burdens, as they arise unexpectedly. The credit
17 rating agencies have historically looked to thicker equity ratios and higher ROEs as the
18 levers to ensure that the coverage ratios of the utilities have the necessary flexibility to
19 meet these types of extreme operating requirements.

VIII. CAPITAL STRUCTURE

1 **Q. Is the capital structure of the Company an important consideration in the**
2 **determination of the appropriate ROE?**

3 A. Yes, it is. Assuming other factors equal, a higher debt ratio increases the risk to investors.
4 For debt holders, higher debt ratios result in a greater portion of the available cash flow
5 being required to meet debt service, thereby increasing the risk associated with the
6 payments on debt. The result of increased risk is a higher interest rate. The incremental
7 risk of a higher debt ratio is more significant for common equity shareholders, who are the
8 residual claimants on the cash flow of the Company. Therefore, the greater the debt service
9 requirement, the less cash flow is available for common equity holders.

10 **Q. What is OG&E's proposed capital structure?**

11 A. The Company's proposal is to establish a capital structure consisting of 53.37 percent
12 common equity and 46.63 percent long-term debt.

13 **Q. Did you conduct any analysis to determine if the requested equity ratio was**
14 **reasonable?**

15 A. Yes, I did. I reviewed the Company's proposed capital structure and the capital structures
16 of the utility operating subsidiaries of the proxy companies. Because the ROE is set based
17 on the return that is derived from the risk-comparable proxy group, it is reasonable to look
18 to the proxy group average capital structure to benchmark the equity ratio for the Company.

1 **Q. Please discuss your analysis of the capital structures of the proxy group companies.**

2 A. I calculated the mean proportions of common equity, long-term debt, and preferred equity
3 over the most recent eight quarters⁸⁸ for each of the companies in my proxy group at the
4 operating subsidiary level. My analysis of the capital structures of the companies in the
5 proxy group is provided in Exhibit AEB-14. As shown in that Exhibit, the mean equity
6 ratio for the proxy group at the operating utility company level is 53.21 percent. The
7 average equity ratios for the utility operating companies held by the proxy group range
8 from a low of 46.97 percent to a high of 60.85 percent. OG&E's proposed equity ratio of
9 53.37 percent is well within the range of equity ratios for the utility operating subsidiaries
10 of the proxy group companies and is therefore reasonable.

11 **Q. Are there other factors to be considered in setting the Company's capital structure?**

12 A. Yes. The credit rating agencies' response to the TCJA must also be considered when
13 determining the equity ratio. As discussed previously in my testimony, all three rating
14 agencies have noted that the TCJA has negative implications for utility cash flows. S&P
15 and FitchRatings have specifically identified increasing the equity ratio as one approach to
16 ensure that utilities have sufficient cash flows following the tax cuts and the loss of bonus
17 depreciation. Furthermore, Moody's downwardly revised the rating outlook for the entire
18 utilities sector in June 2018 and (as discussed in Section IV of my Direct Testimony) has
19 continued to downgrade the ratings of utilities based in part on the negative effects of the
20 TCJA on cash flows.

⁸⁸ The source data for this analysis is the operating company data provided in FERC Form 1 reports. Due to the timing of those filings, my average capital structure analysis uses the quarterly capital structures reported for the proxy group companies for the period from the third quarter of 2019 through the second quarter of 2021.

1 Additionally, it is also important to consider the negative effects of COVID-19 on
2 the credit metrics of utilities. In April 2020, Standard & Poor's downwardly revised the
3 outlook on the entire North American utilities sector and noted that COVID-19 would
4 create incremental pressure on credit metrics and that a recession would lead to an
5 increasing number of credit rating downgrades and negative outlooks.⁸⁹

6 Finally, S&P has continued to maintain a negative outlook for the utility industry
7 in 2021 noting that so far in 2021 downgrades have outpaced upgrades with the median
8 rating of the industry approaching the BBB category which would be the first time that has
9 ever occurred.⁹⁰ S&P expects continued pressure on cash flows over the near-term as
10 utilities continue to increase leverage to fund capital expenditure plans necessary to reduce
11 greenhouse gas emission and improve safety and reliability.⁹¹ The credit ratings agencies'
12 continued concerns over the negative effects of the TCJA, COVID-19 and increased capital
13 expenditures, underscores the importance of maintaining adequate cash flow metrics for
14 the industry. This is also particularly important for OG&E since the Company was
15 downgraded twice by Moody's due to increased capital expenditures and the effect of the
16 TCJA on the Company's cash flows. Furthermore, as noted above, the Company recently
17 had its outlook downgraded by both Moody's and S&P due to the incremental fuel costs
18 incurred during the Extreme Winter Event and uncertainty regarding cost recovery.

⁸⁹ Standard & Poor's Ratings Direct, COVID-19: The Outlook for North American Regulated Utilities Turns Negative, April 2, 2020.

⁹⁰ S&P Global Ratings, "North American Regulated Utilities' Credit Quality Begins the Year on A Downward Path," April 7, 2021.

⁹¹ Ibid.

1 **Q. Is there a relationship between the equity ratio and the authorized ROE?**

2 A. Yes. The equity ratio is the primary indicator of financial risk for a regulated utility such
3 as OG&E. To the extent the equity ratio is reduced, it is necessary to increase the
4 authorized ROE to compensate investors for the greater financial risk associated with a
5 lower equity ratio.

6 **Q. Will the capital structure and ROE authorized in these proceedings affect the**
7 **Company's access to capital at reasonable rates?**

8 A. Yes. The level of earnings authorized by the Commission directly affects the Company's
9 ability to fund their operations with internally generated funds. Both bond investors and
10 rating agencies expect a significant portion of ongoing capital investments to be financed
11 with internally generated funds.

12 It also is important to realize that because a utility's investment horizon is very
13 long, investors require the assurance of a sufficiently high return to satisfy the long-run
14 financing requirements of the assets placed into service. Those assurances, which often
15 are measured by the relationship between internally generated cash flows and debt (or
16 interest expense), depend quite heavily on the capital structure. As a consequence, both
17 the ROE and capital structure are very important to debt and equity investors. Furthermore,
18 considering the capital market conditions discussed in Section IV, the authorized ROE and
19 capital structure take on even greater significance.

20 **Q. What is your conclusion regarding an appropriate equity ratio for OG&E?**

21 A. Considering the actual capital structures of the proxy group operating companies, I believe
22 that OG&E's proposed common equity ratio of 53.37 percent is reasonable. The proposed

1 equity ratio is well within the range established by the capital structures of the utility
2 operating subsidiaries of the proxy companies. In addition, based on the cash flow concerns
3 raised by credit rating agencies as a result of the TCJA, COVID-19 and increased capital
4 expenditures, it is reasonable to rely on a higher equity ratio than the Company may have
5 relied on in prior rate cases.

IX. CONCLUSIONS AND RECOMMENDATION

6 **Q. What is your conclusion regarding a fair ROE for OG&E?**

7 A. Figure 15 below provides a summary of my analytical results. Based on these results, the
8 qualitative analyses presented in my Direct Testimony, the business and financial risks of
9 OG&E compared to the proxy group, and the effects of Federal tax reform and COVID-19
10 on the cash flow metrics of utilities, it is my view that an ROE of 10.20 percent is
11 reasonable and would fairly balance the interests of customers and shareholders. This ROE
12 would enable the Company to maintain its financial integrity and therefore its ability to
13 attract capital at reasonable rates under a variety of economic and financial market
14 conditions, including the current environment where companies are competing for capital
15 to advance sizable investment programs while continuing to provide safe, reliable and
16 affordable electric utility service to customers in Oklahoma.

Figure 13: Summary of Analytical Results

<i>Constant Growth DCF - Median</i>			
	Median Low	Median	Median High
30-Day Average	8.92%	9.58%	10.19%
90-Day Average	8.79%	9.48%	10.16%
180-Day Average	8.81%	9.52%	10.17%
<i>Constant Growth DCF - Average w/ exclusions⁹²</i>			
	Mean Low	Mean	Mean High
30-Day Average	8.68%	9.52%	10.12%
90-Day Average	8.70%	9.54%	10.14%
180-Day Average	8.92%	9.62%	10.23%
<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%	11.73%	11.85%
Bloomberg Beta	10.75%	10.87%	11.07%
Long-term Avg. Beta	9.81%	9.97%	10.40%
<i>ECAPM</i>			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.98%	12.03%	12.12%
Bloomberg Beta	11.30%	11.38%	11.53%
Long-term Avg. Beta	10.59%	10.71%	11.04%
<i>Bond Yield Plus Risk Premium</i>			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Bond Yield Plus Risk Premium Results	9.49%	9.74%	10.17%

1

⁹² Constant Growth DCF analysis - Average w/ Exclusions represents the DCF results excluding the results for individual companies that did not meet the minimum threshold of 7 percent.

1 **Q. What is your conclusion with respect to OG&E's proposed capital structure?**

2 A. My conclusion is that OG&E's proposal to establish a capital structure consisting of 53.37
3 percent common equity, and 46.63 percent long-term debt is reasonable when compared to
4 the capital structures of the companies in the proxy group and taking in consideration the
5 effect of the TCJA, increased capital expenditures and COVID-19 on cash flows and
6 therefore should be adopted.

7 **Q. Does this conclude your Direct Testimony?**

8 A. Yes, it does.



ANN E. BULKLEY

Senior Vice President

Ms. Bulkley has more than two decades of management and economic consulting experience in the energy industry. Ms. Bulkley has extensive state and federal regulatory experience on both electric and natural gas issues including rate of return, cost of equity and capital structure issues. Ms. Bulkley 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. 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, Ms. Bulkley has experience in the areas of contract and business unit valuation, strategic alliances, market restructuring and regulatory and litigation support. Prior to joining Concentric, Ms. Bulkley held senior expertise-based consulting positions at several firms, including Reed Consulting Group and Navigant Consulting, Inc. where she specialized in valuation. Ms. Bulkley holds an M.A. in economics from Boston University and a B.A. in economics and finance from Simmons College. Ms. Bulkley is a Certified General Appraiser licensed in the Commonwealth of Massachusetts and the State of New Hampshire.

REPRESENTATIVE PROJECT EXPERIENCE

Regulatory Analysis and Ratemaking

Ms. Bulkley has provided a range of advisory services relating to regulatory policy analysis and many aspects of utility ratemaking. Specific services have included: 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; and many aspects of traditional utility ratemaking (e.g., rate design, rate base valuation).

Cost of Capital

Ms. Bulkley has 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

Ms. Bulkley has 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. Analyzed and evaluated rate application. Attended hearings and conducted



investigation of rate application for regulatory staff. Prepared, supported and defended recommendations for revenue requirements and rates for the company. Developed rates for gas utility for transportation program and ancillary services.

Valuation

Ms. Bulkley has 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. Ms. Bulkley's 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 several 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.
- Confidential Utility Client: Prepared valuation of fossil and nuclear generation assets for financing purposes for regulated utility client.
- 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, 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.
- Prepared fair value rate base analyses for Northern Indiana Public Service Company for several electric rate proceedings. Valuation approaches used in this project included income, cost and comparable sales approaches.



- 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 for and prepared appraisal reports of generation assets to be used in ad valorem tax disputes.
- 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 the State of 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

Ms. Bulkley has 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.



PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2002 – Present)

Senior Vice President

Vice President

Assistant Vice President

Project Manager

Navigant Consulting, Inc. (1995 – 2002)

Project Manager

Cahners Publishing Company (1995)

Economist

EDUCATION

Boston University

M.A., Economics, 1995

Simmons College

B.A., Economics and Finance, 1991

CERTIFICATIONS

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



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arizona Corporation Commission				
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				
San Jose Water Company	05/21	San Jose Water Company	A2105004	Return on Equity
Colorado Public Utilities Commission				
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



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Connecticut Public Utilities Regulatory Authority				
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
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				
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				
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				



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
North Shore Gas Company	02/21	North Shore Gas Company	No. 20-0810	Return on Equity
Indiana Utility Regulatory Commission				
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
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				
Iowa-American Water Company	08/20	Iowa-American Water Company	Docket No. RPU-2020-0001	Return on Equity
Kansas Corporation Commission				
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	11/18	Kentucky American Water Company	Docket No. 2018-00358	Return on Equity



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Maine Public Utilities Commission				
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	03/21	Michigan Gas Utilities Corporation	Case No. U-20718	Return on Equity
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				
CenterPoint Energy Resources	11/21	CenterPoint Energy Resources	D-G-008/GR-21-435	Return on Equity



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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
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	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.	06/20	Montana-Dakota Utilities Co.	D2020.06.076	Return on Equity
Montana-Dakota Utilities Co.	09/18	Montana-Dakota Utilities Co.	D2018.9.60	Return on Equity
New Hampshire - Board of Tax and Land Appeals				
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



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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				
Public Service Electric and Gas Company	10/20	Public Service Electric and Gas Company	E018101115	Return on Equity
New Jersey American Water Company, Inc.	12/19	New Jersey American Water Company, Inc.	WR19121516	Return on Equity
Public Service Electric and Gas Company	04/19	Public Service Electric and Gas Company	E018060629 G018060630	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				



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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
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				
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



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity
Oklahoma Corporation Commission				
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	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.	04/20	Pennsylvania-American Water Company	Docket No. R-2020-3019369 (water) Docket No. R-2020-3019371 (wastewater)	Return on Equity
American Water Works Company Inc.	04/17	Pennsylvania-American Water Company	Docket No. R-2017-2595853	Return on Equity
South Dakota Public Utilities Commission				
Northern States Power Company	06/14	Northern States Power Company	Docket No. EL14-058	Return on Equity
Texas Public Utility Commission				
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				
Cascade Natural Gas Corporation	06/20	Cascade Natural Gas Corporation	Docket No. UG-200568	Return on Equity



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
PacifiCorp d/b/a Pacific Power & Light	12/19	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-191024	Return on Equity
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	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 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	03/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-578-ER-20	Return on Equity
Montana-Dakota Utilities Co.	05/19	Montana-Dakota Utilities Co.	30013-351-GR-19	Return on Equity

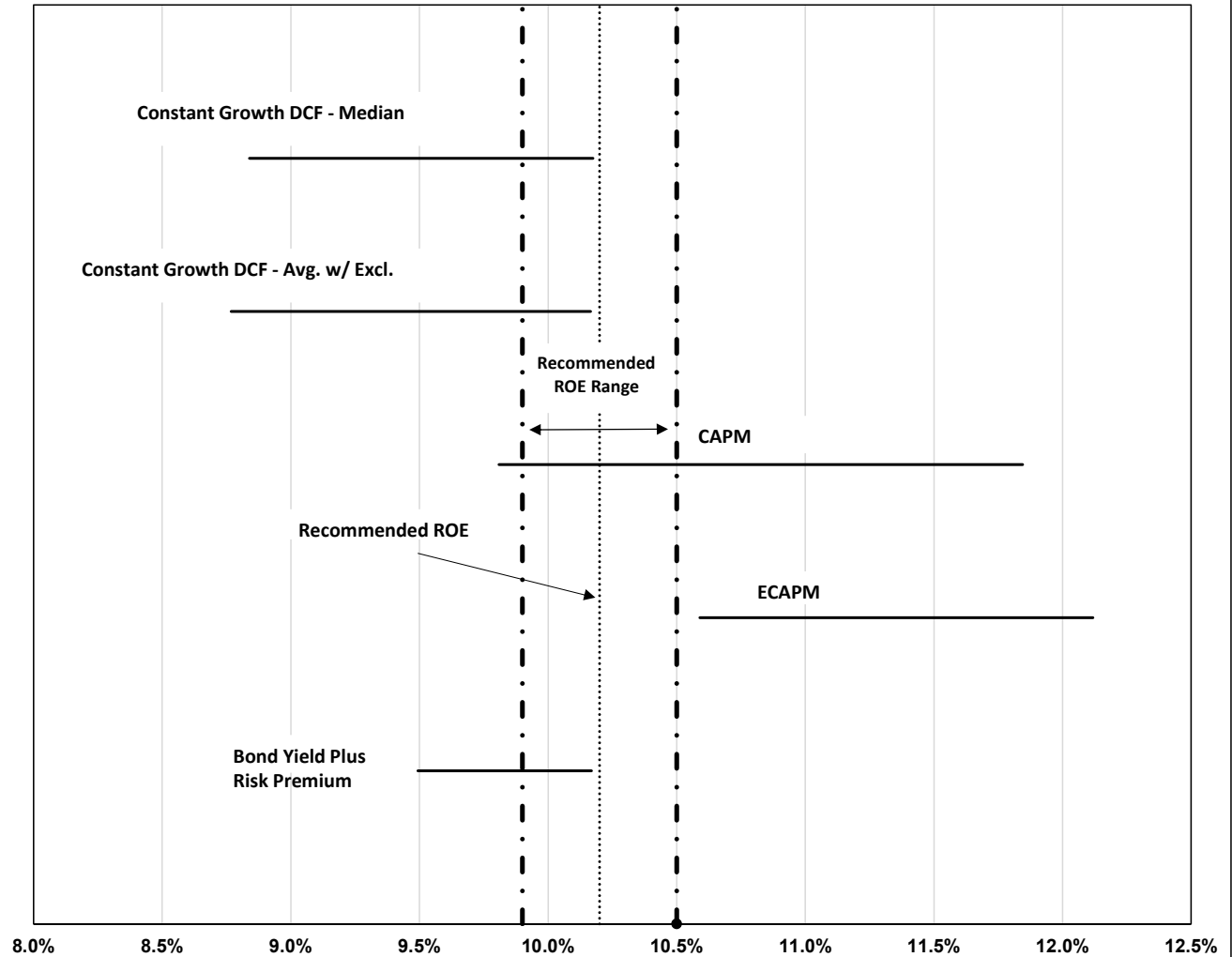
SUMMARY OF ROE ANALYSES RESULTS¹

Constant Growth DCF - Median						
	Median Low	Median	Median High			
30-Day Average	8.92%	9.58%	10.19%			
90-Day Average	8.79%	9.48%	10.16%			
180-Day Average	8.81%	9.52%	10.17%			
Constant Growth Average	8.84%	9.53%	10.17%			
Constant Growth DCF - Average w/ exclusions						
	Mean Low	Mean	Mean High			
30-Day Average	8.68%	9.52%	10.12%			
90-Day Average	8.70%	9.54%	10.14%			
180-Day Average	8.92%	9.62%	10.23%			
Constant Growth Average	8.77%	9.56%	10.17%			
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%	11.73%	11.85%			
Bloomberg Beta	10.75%	10.87%	11.07%			
Long-Term Avg. Beta	9.81%	9.97%	10.26%			
ECAPM						
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield			
Value Line Beta	11.98%	12.03%	12.12%			
Bloomberg Beta	11.30%	11.38%	11.53%			
Long-Term Avg. Beta	10.59%	10.71%	10.93%			
Treasury Yield Plus Risk Premium						
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield			
Risk Premium Analysis	9.49%	9.74%	10.17%			
Risk Premium Mean Result	9.80%					

	X	Y
Constant Growth DCF - Median	8.84%	5
	9.53%	5
	10.17%	5
Constant Growth DCF - Avg. W/ Excl.	8.77%	4
	9.56%	4
	10.17%	4
CAPM	9.81%	3
	11.85%	3
ECAPM	10.59%	2
	12.12%	2
Bond Yield Plus Risk Premium	9.49%	1
	10.17%	1
Recommended ROE Range	9.90%	0
	9.90%	7
Recommended ROE Range	10.50%	0
	10.50%	7
Recommended ROE	10.20%	0
	10.20%	7

Notes:

[1] Constant Growth DCF analysis - Average w/ Exclusions represents the DCF results excluding the results for individual companies that did not meet the minimum threshold of 7 percent.



PROXY GROUP SCREENING DATA AND RESULTS

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
			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	% Regulated Coal Generation Capacity > 5%	% Company- Owned Generation >40%	% Regulated Operating Income > 60%	% Regulated Electric Operating Income > 60%	Announced Merger
Company	Ticker	Dividends									
ALLETE, Inc.	ALE	Yes	BBB	Yes	Yes	Yes	49.92%	46.42%	88.66%	97.38%	No
Alliant Energy Corporation	LNT	Yes	A-	Yes	Yes	Yes	32.27%	69.07%	96.26%	90.75%	No
Ameren Corporation	AEE	Yes	BBB+	Yes	Yes	Yes	49.97%	76.86%	100.00%	86.49%	No
American Electric Power Company, Inc.	AEP	Yes	A-	Yes	Yes	Yes	51.92%	53.74%	97.16%	100.00%	No
Avista Corporation	AVA	Yes	BBB	Yes	Yes	Yes	10.41%	59.02%	100.00%	77.52%	No
Duke Energy Corporation	DUK	Yes	BBB+	Yes	Yes	Yes	27.95%	82.70%	99.36%	91.26%	No
Entergy Corporation	ETR	Yes	BBB+	Yes	Yes	Yes	13.07%	66.73%	100.00%	99.09%	No
Evergy, Inc.	EVRG	Yes	A-	Yes	Yes	Yes	50.00%	64.10%	100.00%	100.00%	No
IDACORP, Inc.	IDA	Yes	BBB	Yes	Yes	Yes	26.43%	71.93%	99.66%	100.00%	No
MGE Energy, Inc.	MGEE	Yes	AA-	Yes	Yes	Yes	38.32%	66.91%	71.13%	76.01%	No
NextEra Energy, Inc.	NEE	Yes	A-	Yes	Yes	Yes	8.56%	97.24%	75.63%	100.00%	No
NorthWestern Corporation	NWE	Yes	BBB	Yes	Yes	Yes	32.54%	57.89%	99.75%	83.44%	No
Otter Tail Corporation	OTTR	Yes	BBB	Yes	Yes	Yes	66.95%	56.26%	71.14%	100.00%	No
Portland General Electric Company	POR	Yes	BBB+	Yes	Yes	Yes	20.81%	62.41%	100.00%	100.00%	No
Southern Company	SO	Yes	A-	Yes	Yes	Yes	32.58%	78.45%	86.98%	82.21%	No
Xcel Energy Inc.	XEL	Yes	A-	Yes	Yes	Yes	32.85%	57.43%	100.00%	86.71%	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: S&P Capital IQ Pro

[8] Source: Form 10-Ks for 2020, 2019 & 2018

[9] Source: Form 10-Ks for 2020, 2019 & 2018

[10] SNL Financial News Releases

30-DAY CONSTANT GROWTH DCF

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	All Proxy Group			With Exclusions		
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.52	\$64.39	3.91%	4.02%	5.00%	5.67%	6.00%	5.56%	9.01%	9.58%	10.03%	9.01%	9.58%	10.03%
Alliant Energy Corporation	LNT	\$1.61	\$59.39	2.71%	2.79%	5.50%	5.80%	5.90%	5.73%	8.29%	8.52%	8.69%	8.29%	8.52%	8.69%
Ameren Corporation	AEE	\$2.20	\$85.94	2.56%	2.65%	6.50%	7.70%	7.30%	7.17%	9.14%	9.82%	10.36%	9.14%	9.82%	10.36%
American Electric Power Company, Inc.	AEP	\$2.96	\$87.05	3.40%	3.50%	6.50%	6.03%	5.70%	6.08%	9.20%	9.58%	10.01%	9.20%	9.58%	10.01%
Avista Corporation	AVA	\$1.69	\$40.93	4.13%	4.23%	3.00%	6.20%	5.10%	4.77%	7.19%	8.99%	10.46%	7.19%	8.99%	10.46%
Duke Energy Corporation	DUK	\$3.94	\$102.54	3.84%	3.96%	7.00%	5.45%	5.30%	5.92%	9.24%	9.87%	10.98%	9.24%	9.87%	10.98%
Entergy Corporation	ETR	\$3.80	\$109.82	3.46%	3.51%	3.00%	3.50%	1.40%	2.63%	4.88%	6.14%	7.02%			7.02%
Evergy, Inc.	EVRG	\$2.14	\$66.29	3.23%	3.33%	8.00%	5.70%	6.10%	6.60%	9.02%	9.93%	11.36%	9.02%	9.93%	11.36%
IDACORP, Inc.	IDA	\$2.84	\$105.32	2.70%	2.75%	4.00%	3.20%	3.90%	3.70%	5.94%	6.45%	6.75%			
MGE Energy, Inc.	MGEE	\$1.55	\$78.72	1.97%	2.02%	5.50%	5.60%	5.60%	5.57%	7.52%	7.59%	7.62%	7.52%	7.59%	7.62%
NextEra Energy, Inc.	NEE	\$1.54	\$83.29	1.85%	1.93%	10.50%	7.85%	8.30%	8.88%	9.77%	10.81%	12.45%	9.77%	10.81%	12.45%
NorthWestern Corporation	NWE	\$2.48	\$62.04	4.00%	4.08%	3.00%	4.50%	4.80%	4.10%	7.06%	8.18%	8.89%	7.06%	8.18%	8.89%
Otter Tail Corporation	OTTR	\$1.56	\$55.36	2.82%	2.92%	7.00%	9.00%	4.70%	6.90%	7.58%	9.82%	11.94%	7.58%	9.82%	11.94%
Portland General Electric Company	POR	\$1.72	\$50.02	3.44%	3.58%	8.50%	7.10%	8.60%	8.07%	10.66%	11.64%	12.19%	10.66%	11.64%	12.19%
Southern Company	SO	\$2.64	\$65.23	4.05%	4.16%	6.00%	6.50%	4.90%	5.80%	9.05%	9.96%	10.68%	9.05%	9.96%	10.68%
Xcel Energy Inc.	XEL	\$1.83	\$66.59	2.75%	2.83%	6.00%	6.30%	6.10%	6.13%	8.83%	8.97%	9.13%	8.83%	8.97%	9.13%
Mean				3.18%	3.27%	5.94%	6.01%	5.61%	5.85%	8.27%	9.12%	9.91%	8.68%	9.52%	10.12%
Median				3.31%	3.42%	6.00%	5.92%	5.65%	5.86%	8.92%	9.58%	10.19%	9.02%	9.70%	10.36%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 30-day average as of September 30, 2021

[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])

[12] - [14] Excludes companies with ROEs less than 7.00%.

90-DAY CONSTANT GROWTH DCF

Company		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	With Exclusions		
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.52	\$68.09	3.70%	3.80%	5.00%	5.67%	6.00%	5.56%	8.79%	9.36%	9.81%	8.79%	9.36%	9.81%
Alliant Energy Corporation	LNT	\$1.61	\$58.62	2.75%	2.83%	5.50%	5.80%	5.90%	5.73%	8.32%	8.56%	8.73%	8.32%	8.56%	8.73%
Ameren Corporation	AEE	\$2.20	\$84.88	2.59%	2.68%	6.50%	7.70%	7.30%	7.17%	9.18%	9.85%	10.39%	9.18%	9.85%	10.39%
American Electric Power Company, Inc.	AEP	\$2.96	\$86.52	3.42%	3.53%	6.50%	6.03%	5.70%	6.08%	9.22%	9.60%	10.03%	9.22%	9.60%	10.03%
Avista Corporation	AVA	\$1.69	\$42.64	3.96%	4.06%	3.00%	6.20%	5.10%	4.77%	7.02%	8.82%	10.29%	7.02%	8.82%	10.29%
Duke Energy Corporation	DUK	\$3.94	\$102.73	3.84%	3.95%	7.00%	5.45%	5.30%	5.92%	9.24%	9.87%	10.97%	9.24%	9.87%	10.97%
Entergy Corporation	ETR	\$3.80	\$106.46	3.57%	3.62%	3.00%	3.50%	1.40%	2.63%	4.99%	6.25%	7.13%			7.13%
Evergy, Inc.	EVRG	\$2.14	\$64.67	3.31%	3.42%	8.00%	5.70%	6.10%	6.60%	9.10%	10.02%	11.44%	9.10%	10.02%	11.44%
IDACORP, Inc.	IDA	\$2.84	\$102.95	2.76%	2.81%	4.00%	3.20%	3.90%	3.70%	6.00%	6.51%	6.81%			
MGE Energy, Inc.	MGEE	\$1.55	\$77.43	2.00%	2.06%	5.50%	5.60%	5.60%	5.57%	7.56%	7.62%	7.66%	7.56%	7.62%	7.66%
NextEra Energy, Inc.	NEE	\$1.54	\$78.52	1.96%	2.05%	10.50%	7.85%	8.30%	8.88%	9.89%	10.93%	12.56%	9.89%	10.93%	12.56%
NorthWestern Corporation	NWE	\$2.48	\$62.33	3.98%	4.06%	3.00%	4.50%	4.80%	4.10%	7.04%	8.16%	8.87%	7.04%	8.16%	8.87%
Otter Tail Corporation	OTTR	\$1.56	\$51.74	3.01%	3.12%	7.00%	9.00%	4.70%	6.90%	7.79%	10.02%	12.15%	7.79%	10.02%	12.15%
Portland General Electric Company	POR	\$1.72	\$48.96	3.51%	3.65%	8.50%	7.10%	8.60%	8.07%	10.74%	11.72%	12.26%	10.74%	11.72%	12.26%
Southern Company	SO	\$2.64	\$63.98	4.13%	4.25%	6.00%	6.50%	4.90%	5.80%	9.13%	10.05%	10.76%	9.13%	10.05%	10.76%
Xcel Energy Inc.	XEL	\$1.83	\$67.87	2.70%	2.78%	6.00%	6.30%	6.10%	6.13%	8.78%	8.91%	9.08%	8.78%	8.91%	9.08%
Mean				3.20%	3.29%	5.94%	6.01%	5.61%	5.85%	8.30%	9.14%	9.93%	8.70%	9.54%	10.14%
Median				3.37%	3.47%	6.00%	5.92%	5.65%	5.86%	8.79%	9.48%	10.16%	8.95%	9.73%	10.29%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 30-day average as of September 30, 2021

[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])

[12] - [14] Excludes companies with ROEs less than 7.00%.

180-DAY CONSTANT GROWTH DCF

Company		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	With Exclusions		
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.52	\$67.78	3.72%	3.82%	5.00%	5.67%	6.00%	5.56%	8.81%	9.38%	9.83%	8.81%	9.38%	9.83%
Alliant Energy Corporation	LNT	\$1.61	\$55.51	2.90%	2.98%	5.50%	5.80%	5.90%	5.73%	8.48%	8.72%	8.89%	8.48%	8.72%	8.89%
Ameren Corporation	AEE	\$2.20	\$81.67	2.69%	2.79%	6.50%	7.70%	7.30%	7.17%	9.28%	9.96%	10.50%	9.28%	9.96%	10.50%
American Electric Power Company, Inc.	AEP	\$2.96	\$84.94	3.48%	3.59%	6.50%	6.03%	5.70%	6.08%	9.28%	9.67%	10.10%	9.28%	9.67%	10.10%
Avista Corporation	AVA	\$1.69	\$43.11	3.92%	4.01%	3.00%	6.20%	5.10%	4.77%	6.98%	8.78%	10.24%		8.78%	10.24%
Duke Energy Corporation	DUK	\$3.94	\$98.90	3.98%	4.10%	7.00%	5.45%	5.30%	5.92%	9.39%	10.02%	11.12%	9.39%	10.02%	11.12%
Entergy Corporation	ETR	\$3.80	\$102.73	3.70%	3.75%	3.00%	3.50%	1.40%	2.63%	5.12%	6.38%	7.26%			7.26%
Evergy, Inc.	EVRG	\$2.14	\$61.59	3.47%	3.59%	8.00%	5.70%	6.10%	6.60%	9.27%	10.19%	11.61%	9.27%	10.19%	11.61%
IDACORP, Inc.	IDA	\$2.84	\$99.22	2.86%	2.92%	4.00%	3.20%	3.90%	3.70%	6.11%	6.62%	6.92%			
MGE Energy, Inc.	MGEE	\$1.55	\$73.71	2.10%	2.16%	5.50%	5.60%	5.60%	5.57%	7.66%	7.73%	7.76%	7.66%	7.73%	7.76%
NextEra Energy, Inc.	NEE	\$1.54	\$77.90	1.98%	2.06%	10.50%	7.85%	8.30%	8.88%	9.90%	10.95%	12.58%	9.90%	10.95%	12.58%
NorthWestern Corporation	NWE	\$2.48	\$62.36	3.98%	4.06%	3.00%	4.50%	4.80%	4.10%	7.04%	8.16%	8.87%	7.04%	8.16%	8.87%
Otter Tail Corporation	OTTR	\$1.56	\$48.20	3.24%	3.35%	7.00%	9.00%	4.70%	6.90%	8.01%	10.25%	12.38%	8.01%	10.25%	12.38%
Portland General Electric Company	POR	\$1.72	\$47.63	3.61%	3.76%	8.50%	7.10%	8.60%	8.07%	10.84%	11.82%	12.37%	10.84%	11.82%	12.37%
Southern Company	SO	\$2.64	\$62.88	4.20%	4.32%	6.00%	6.50%	4.90%	5.80%	9.20%	10.12%	10.83%	9.20%	10.12%	10.83%
Xcel Energy Inc.	XEL	\$1.83	\$66.91	2.73%	2.82%	6.00%	6.30%	6.10%	6.13%	8.82%	8.95%	9.12%	8.82%	8.95%	9.12%
Mean				3.29%	3.38%	5.94%	6.01%	5.61%	5.85%	8.39%	9.23%	10.02%	8.92%	9.62%	10.23%
Median				3.48%	3.59%	6.00%	5.92%	5.65%	5.86%	8.81%	9.52%	10.17%	9.20%	9.81%	10.24%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 30-day average as of September 30, 2021

[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])

[12] - [14] Excludes companies with ROEs less than 7.00%.

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

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

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

Company	Ticker	[1] Current 30-day average of 30-year U.S. Treasury bond yield	[2] Beta (β)	[3] Market Return (R_m)	[4] Market Risk Premium ($R_m - R_f$)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	1.93%	0.90	12.94%	11.01%	11.84%	12.11%
Alliant Energy Corporation	LNT	1.93%	0.85	12.94%	11.01%	11.28%	11.70%
Ameren Corporation	AEE	1.93%	0.85	12.94%	11.01%	11.28%	11.70%
American Electric Power Company, Inc.	AEP	1.93%	0.75	12.94%	11.01%	10.18%	10.87%
Avista Corporation	AVA	1.93%	0.95	12.94%	11.01%	12.39%	12.52%
Duke Energy Corporation	DUK	1.93%	0.90	12.94%	11.01%	11.84%	12.11%
Entergy Corporation	ETR	1.93%	0.95	12.94%	11.01%	12.39%	12.52%
Evergy, Inc.	EVERG	1.93%	0.95	12.94%	11.01%	12.39%	12.52%
IDACORP, Inc.	IDA	1.93%	0.85	12.94%	11.01%	11.28%	11.70%
MGE Energy, Inc.	MGEE	1.93%	0.75	12.94%	11.01%	10.18%	10.87%
NextEra Energy, Inc.	NEE	1.93%	0.95	12.94%	11.01%	12.39%	12.52%
NorthWestern Corporation	NWE	1.93%	0.95	12.94%	11.01%	12.39%	12.52%
Otter Tail Corporation	OTTR	1.93%	0.90	12.94%	11.01%	11.84%	12.11%
Portland General Electric Company	POR	1.93%	0.90	12.94%	11.01%	11.84%	12.11%
Southern Company	SO	1.93%	0.95	12.94%	11.01%	12.39%	12.52%
Xcel Energy Inc.	XEL	1.93%	0.80	12.94%	11.01%	10.73%	11.28%
Mean						11.66%	11.98%

Notes:

[1] Source: Bloomberg Professional, as of September 30, 2021

[2] Source: Value Line

[3] Source: Exhibit AEB-7

[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

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

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

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q1 2022 - Q1 2023)	[2] Beta (β)	[3] Market Return (R_m)	[4] Market Risk Premium ($R_m - R_f$)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	2.50%	0.90	12.94%	10.44%	11.89%	12.15%
Alliant Energy Corporation	LNT	2.50%	0.85	12.94%	10.44%	11.37%	11.76%
Ameren Corporation	AEE	2.50%	0.85	12.94%	10.44%	11.37%	11.76%
American Electric Power Company, Inc.	AEP	2.50%	0.75	12.94%	10.44%	10.33%	10.98%
Avista Corporation	AVA	2.50%	0.95	12.94%	10.44%	12.41%	12.54%
Duke Energy Corporation	DUK	2.50%	0.90	12.94%	10.44%	11.89%	12.15%
Entergy Corporation	ETR	2.50%	0.95	12.94%	10.44%	12.41%	12.54%
Evergy, Inc.	EVERG	2.50%	0.95	12.94%	10.44%	12.41%	12.54%
IDACORP, Inc.	IDA	2.50%	0.85	12.94%	10.44%	11.37%	11.76%
MGE Energy, Inc.	MGEE	2.50%	0.75	12.94%	10.44%	10.33%	10.98%
NextEra Energy, Inc.	NEE	2.50%	0.95	12.94%	10.44%	12.41%	12.54%
NorthWestern Corporation	NWE	2.50%	0.95	12.94%	10.44%	12.41%	12.54%
Otter Tail Corporation	OTTR	2.50%	0.90	12.94%	10.44%	11.89%	12.15%
Portland General Electric Company	POR	2.50%	0.90	12.94%	10.44%	11.89%	12.15%
Southern Company	SO	2.50%	0.95	12.94%	10.44%	12.41%	12.54%
Xcel Energy Inc.	XEL	2.50%	0.80	12.94%	10.44%	10.85%	11.37%
Mean						11.73%	12.03%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 10, October 1, 2021, at 2

[2] Source: Value Line

[3] Source: Exhibit AEB-7

[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

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

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.50%	0.90	12.94%	9.44%	11.99%	12.23%
Alliant Energy Corporation	LNT	3.50%	0.85	12.94%	9.44%	11.52%	11.87%
Ameren Corporation	AEE	3.50%	0.85	12.94%	9.44%	11.52%	11.87%
American Electric Power Company, Inc.	AEP	3.50%	0.75	12.94%	9.44%	10.58%	11.17%
Avista Corporation	AVA	3.50%	0.95	12.94%	9.44%	12.46%	12.58%
Duke Energy Corporation	DUK	3.50%	0.90	12.94%	9.44%	11.99%	12.23%
Entergy Corporation	ETR	3.50%	0.95	12.94%	9.44%	12.46%	12.58%
Evergy, Inc.	EVRG	3.50%	0.95	12.94%	9.44%	12.46%	12.58%
IDACORP, Inc.	IDA	3.50%	0.85	12.94%	9.44%	11.52%	11.87%
MGE Energy, Inc.	MGEE	3.50%	0.75	12.94%	9.44%	10.58%	11.17%
NextEra Energy, Inc.	NEE	3.50%	0.95	12.94%	9.44%	12.46%	12.58%
NorthWestern Corporation	NWE	3.50%	0.95	12.94%	9.44%	12.46%	12.58%
Otter Tail Corporation	OTTR	3.50%	0.90	12.94%	9.44%	11.99%	12.23%
Portland General Electric Company	POR	3.50%	0.90	12.94%	9.44%	11.99%	12.23%
Southern Company	SO	3.50%	0.95	12.94%	9.44%	12.46%	12.58%
Xcel Energy Inc.	XEL	3.50%	0.80	12.94%	9.44%	11.05%	11.52%
Mean						11.85%	12.12%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14

[2] Source: Value Line

[3] Source: Exhibit AEB-7

[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

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

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		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	1.93%	0.85	12.94%	11.01%	11.24%	11.67%
Alliant Energy Corporation	LNT	1.93%	0.80	12.94%	11.01%	10.73%	11.28%
Ameren Corporation	AEE	1.93%	0.75	12.94%	11.01%	10.23%	10.91%
American Electric Power Company, Inc.	AEP	1.93%	0.79	12.94%	11.01%	10.58%	11.17%
Avista Corporation	AVA	1.93%	0.79	12.94%	11.01%	10.60%	11.19%
Duke Energy Corporation	DUK	1.93%	0.73	12.94%	11.01%	9.94%	10.69%
Entergy Corporation	ETR	1.93%	0.86	12.94%	11.01%	11.39%	11.78%
Evergy, Inc.	EVRG	1.93%	0.80	12.94%	11.01%	10.72%	11.27%
IDACORP, Inc.	IDA	1.93%	0.84	12.94%	11.01%	11.14%	11.59%
MGE Energy, Inc.	MGEE	1.93%	0.70	12.94%	11.01%	9.62%	10.45%
NextEra Energy, Inc.	NEE	1.93%	0.79	12.94%	11.01%	10.57%	11.16%
NorthWestern Corporation	NWE	1.93%	0.93	12.94%	11.01%	12.11%	12.32%
Otter Tail Corporation	OTTR	1.93%	0.89	12.94%	11.01%	11.68%	11.99%
Portland General Electric Company	POR	1.93%	0.81	12.94%	11.01%	10.87%	11.39%
Southern Company	SO	1.93%	0.78	12.94%	11.01%	10.53%	11.13%
Xcel Energy Inc.	XEL	1.93%	0.74	12.94%	11.01%	10.10%	10.81%
Mean						10.75%	11.30%

Notes:

[1] Source: Bloomberg Professional, as of September 30, 2021

[2] Source: Bloomberg Professional, based on 10-year weekly returns

[3] Source: Exhibit AEB-7

[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

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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q1 2022 - Q1 2023)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	2.50%	0.85	12.94%	10.44%	11.33%	11.73%
Alliant Energy Corporation	LNT	2.50%	0.80	12.94%	10.44%	10.85%	11.37%
Ameren Corporation	AEE	2.50%	0.75	12.94%	10.44%	10.37%	11.01%
American Electric Power Company, Inc.	AEP	2.50%	0.79	12.94%	10.44%	10.70%	11.26%
Avista Corporation	AVA	2.50%	0.79	12.94%	10.44%	10.72%	11.28%
Duke Energy Corporation	DUK	2.50%	0.73	12.94%	10.44%	10.10%	10.81%
Entergy Corporation	ETR	2.50%	0.86	12.94%	10.44%	11.47%	11.84%
Evergy, Inc.	EVRG	2.50%	0.80	12.94%	10.44%	10.84%	11.36%
IDACORP, Inc.	IDA	2.50%	0.84	12.94%	10.44%	11.24%	11.66%
MGE Energy, Inc.	MGEE	2.50%	0.70	12.94%	10.44%	9.79%	10.58%
NextEra Energy, Inc.	NEE	2.50%	0.79	12.94%	10.44%	10.70%	11.26%
NorthWestern Corporation	NWE	2.50%	0.93	12.94%	10.44%	12.15%	12.35%
Otter Tail Corporation	OTTR	2.50%	0.89	12.94%	10.44%	11.74%	12.04%
Portland General Electric Company	POR	2.50%	0.81	12.94%	10.44%	10.98%	11.47%
Southern Company	SO	2.50%	0.78	12.94%	10.44%	10.66%	11.23%
Xcel Energy Inc.	XEL	2.50%	0.74	12.94%	10.44%	10.25%	10.92%
Mean						10.87%	11.38%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 10, October 1, 2021, at 2

[2] Source: Bloomberg Professional, based on 10-year weekly returns

[3] Source: Exhibit AEB-7

[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

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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.50%	0.85	12.94%	9.44%	11.49%	11.85%
Alliant Energy Corporation	LNT	3.50%	0.80	12.94%	9.44%	11.05%	11.52%
Ameren Corporation	AEE	3.50%	0.75	12.94%	9.44%	10.62%	11.20%
American Electric Power Company, Inc.	AEP	3.50%	0.79	12.94%	9.44%	10.91%	11.42%
Avista Corporation	AVA	3.50%	0.79	12.94%	9.44%	10.94%	11.44%
Duke Energy Corporation	DUK	3.50%	0.73	12.94%	9.44%	10.37%	11.01%
Entergy Corporation	ETR	3.50%	0.86	12.94%	9.44%	11.61%	11.94%
Evergy, Inc.	EVRG	3.50%	0.80	12.94%	9.44%	11.04%	11.51%
IDACORP, Inc.	IDA	3.50%	0.84	12.94%	9.44%	11.40%	11.78%
MGE Energy, Inc.	MGEE	3.50%	0.70	12.94%	9.44%	10.09%	10.80%
NextEra Energy, Inc.	NEE	3.50%	0.79	12.94%	9.44%	10.91%	11.42%
NorthWestern Corporation	NWE	3.50%	0.93	12.94%	9.44%	12.23%	12.41%
Otter Tail Corporation	OTTR	3.50%	0.89	12.94%	9.44%	11.86%	12.13%
Portland General Electric Company	POR	3.50%	0.81	12.94%	9.44%	11.17%	11.61%
Southern Company	SO	3.50%	0.78	12.94%	9.44%	10.87%	11.39%
Xcel Energy Inc.	XEL	3.50%	0.74	12.94%	9.44%	10.51%	11.12%
Mean						11.07%	11.53%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14

[2] Source: Bloomberg Professional, based on 10-year weekly returns

[3] Source: Exhibit AEB-7

[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

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

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		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	1.93%	0.75	12.94%	11.01%	10.13%	10.83%
Alliant Energy Corporation	LNT	1.93%	0.73	12.94%	11.01%	9.91%	10.67%
Ameren Corporation	AEE	1.93%	0.72	12.94%	11.01%	9.85%	10.62%
American Electric Power Company, Inc.	AEP	1.93%	0.66	12.94%	11.01%	9.19%	10.13%
Avista Corporation	AVA	1.93%	0.73	12.94%	11.01%	9.96%	10.71%
Duke Energy Corporation	DUK	1.93%	0.62	12.94%	11.01%	8.75%	9.80%
Entergy Corporation	ETR	1.93%	0.70	12.94%	11.01%	9.58%	10.42%
Evergy, Inc.	EVRG	1.93%	1.00	12.94%	11.01%	12.94%	12.94%
IDACORP, Inc.	IDA	1.93%	0.71	12.94%	11.01%	9.74%	10.54%
MGE Energy, Inc.	MGEE	1.93%	0.66	12.94%	11.01%	9.19%	10.13%
NextEra Energy, Inc.	NEE	1.93%	0.69	12.94%	11.01%	9.52%	10.38%
NorthWestern Corporation	NWE	1.93%	0.70	12.94%	11.01%	9.63%	10.46%
Otter Tail Corporation	OTTR	1.93%	0.86	12.94%	11.01%	11.34%	11.74%
Portland General Electric Company	POR	1.93%	0.73	12.94%	11.01%	9.96%	10.71%
Southern Company	SO	1.93%	0.58	12.94%	11.01%	8.31%	9.47%
Xcel Energy Inc.	XEL	1.93%	0.64	12.94%	11.01%	8.92%	9.92%
Mean						9.81%	10.59%

Notes:

[1] Source: Bloomberg Professional, as of September 30, 2021

[2] Source: Exhibit AEB-6

[3] Source: Exhibit AEB-7

[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

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

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Near-term projected 30-year U.S. Treasury bond yield (Q1 2022 - Q1 2023)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	2.50%	0.75	12.94%	10.44%	10.27%	10.94%
Alliant Energy Corporation	LNT	2.50%	0.73	12.94%	10.44%	10.07%	10.78%
Ameren Corporation	AEE	2.50%	0.72	12.94%	10.44%	10.01%	10.74%
American Electric Power Company, Inc.	AEP	2.50%	0.66	12.94%	10.44%	9.39%	10.27%
Avista Corporation	AVA	2.50%	0.73	12.94%	10.44%	10.12%	10.82%
Duke Energy Corporation	DUK	2.50%	0.62	12.94%	10.44%	8.97%	9.96%
Entergy Corporation	ETR	2.50%	0.70	12.94%	10.44%	9.75%	10.55%
Evergy, Inc.	EVRG	2.50%	1.00	12.94%	10.44%	12.94%	12.94%
IDACORP, Inc.	IDA	2.50%	0.71	12.94%	10.44%	9.91%	10.67%
MGE Energy, Inc.	MGEE	2.50%	0.66	12.94%	10.44%	9.39%	10.27%
NextEra Energy, Inc.	NEE	2.50%	0.69	12.94%	10.44%	9.70%	10.51%
NorthWestern Corporation	NWE	2.50%	0.70	12.94%	10.44%	9.81%	10.59%
Otter Tail Corporation	OTTR	2.50%	0.86	12.94%	10.44%	11.42%	11.80%
Portland General Electric Company	POR	2.50%	0.73	12.94%	10.44%	10.12%	10.82%
Southern Company	SO	2.50%	0.58	12.94%	10.44%	8.55%	9.65%
Xcel Energy Inc.	XEL	2.50%	0.64	12.94%	10.44%	9.13%	10.08%
Mean						9.97%	10.71%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 10, October 1, 2021, at 2

[2] Source: Exhibit AEB-6

[3] Source: Exhibit AEB-7

[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 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]	[2]	[3]	[4]	[5]	[6]
		Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.50%	0.75	12.94%	9.44%	10.53%	11.13%
Alliant Energy Corporation	LNT	3.50%	0.73	12.94%	9.44%	10.34%	10.99%
Ameren Corporation	AEE	3.50%	0.72	12.94%	9.44%	10.29%	10.95%
American Electric Power Company, Inc.	AEP	3.50%	0.66	12.94%	9.44%	9.73%	10.53%
Avista Corporation	AVA	3.50%	0.73	12.94%	9.44%	10.39%	11.03%
Duke Energy Corporation	DUK	3.50%	0.62	12.94%	9.44%	9.35%	10.25%
Entergy Corporation	ETR	3.50%	0.70	12.94%	9.44%	10.06%	10.78%
Evergy, Inc.	EVRG	3.50%	1.00	12.94%	9.44%	12.94%	12.94%
IDACORP, Inc.	IDA	3.50%	0.71	12.94%	9.44%	10.20%	10.88%
MGE Energy, Inc.	MGEE	3.50%	0.66	12.94%	9.44%	9.73%	10.53%
NextEra Energy, Inc.	NEE	3.50%	0.69	12.94%	9.44%	10.01%	10.74%
NorthWestern Corporation	NWE	3.50%	0.70	12.94%	9.44%	10.11%	10.81%
Otter Tail Corporation	OTTR	3.50%	0.86	12.94%	9.44%	11.57%	11.91%
Portland General Electric Company	POR	3.50%	0.73	12.94%	9.44%	10.39%	11.03%
Southern Company	SO	3.50%	0.58	12.94%	9.44%	8.97%	9.96%
Xcel Energy Inc.	XEL	3.50%	0.64	12.94%	9.44%	9.49%	10.35%
Mean						10.26%	10.93%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14

[2] Source: Exhibit AEB-6

[3] Source: Exhibit AEB-7

[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 - 2011 - 2020

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	Average
ALLETE, Inc.	ALE	0.70	0.70	0.75	0.80	0.80	0.75	0.80	0.65	0.65	0.85	0.75
Alliant Energy Corporation	LNT	0.75	0.70	0.75	0.80	0.80	0.70	0.70	0.60	0.60	0.85	0.73
Ameren Corporation	AEE	0.80	0.80	0.80	0.75	0.75	0.65	0.70	0.55	0.55	0.85	0.72
American Electric Power Company, Inc.	AEP	0.70	0.65	0.70	0.70	0.70	0.65	0.65	0.55	0.55	0.75	0.66
Avista Corporation	AVA	0.70	0.70	0.70	0.80	0.80	0.70	0.75	0.65	0.60	0.90	0.73
Duke Energy Corporation	DUK	0.65	0.60	0.65	0.60	0.65	0.60	0.60	0.50	0.50	0.85	0.62
Entergy Corporation	ETR	0.70	0.70	0.70	0.70	0.70	0.65	0.65	0.60	0.60	0.95	0.70
Evergy, Inc.	EVRG								NMF	NMF	1.00	1.00
IDACORP, Inc.	IDA	0.70	0.70	0.70	0.80	0.80	0.75	0.70	0.60	0.55	0.80	0.71
MGE Energy, Inc.	MGEE	0.60	0.60	0.65	0.70	0.75	0.70	0.75	0.60	0.55	0.70	0.66
NextEra Energy, Inc.	NEE	0.75	0.70	0.70	0.70	0.75	0.65	0.65	0.55	0.55	0.90	0.69
NorthWestern Corporation	NWE	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.60	0.60	0.90	0.70
Otter Tail Corporation	OTTR	0.90	0.90	0.95	0.90	0.85	0.85	0.90	0.75	0.70	0.85	0.86
Portland General Electric Company	POR	0.75	0.75	0.75	0.80	0.80	0.70	0.70	0.60	0.60	0.85	0.73
Southern Company	SO	0.55	0.55	0.55	0.55	0.60	0.55	0.55	0.50	0.50	0.90	0.58
Xcel Energy Inc.	XEL	0.65	0.65	0.65	0.70	0.65	0.60	0.60	0.55	0.50	0.80	0.64
Mean		0.71	0.69	0.71	0.73	0.74	0.68	0.69	0.59	0.57	0.86	0.72

Notes:

[1] Value Line, dated November 4, 2011, November 25, 2011, and December 23, 2011.

[2] Value Line, dated November 2, 2012, November 23, 2012, and December 21, 2012.

[3] Value Line, dated November 1, 2013, November 22, 2013, and December 20, 2013.

[4] Value Line, dated October 31, 2014, November 21, 2014, and December 19, 2014.

[5] Value Line, dated October 30, 2015, November 20, 2015, and December 18, 2015.

[6] Value Line, dated October 28, 2016, November 18, 2016, and December 16, 2016.

[7] Value Line, dated October 27, 2017, November 17, 2017, and December 15, 2017.

[8] Value Line, dated October 18, 2018, November 16, 2018, and December 14, 2018.

[9] Value Line, dated October 25, 2019, November 15, 2019, and December 13, 2019.

[10] Value Line, dated October 23, 2020, November 13, 2020, and December 11, 2020.

[11] Average ([1] - [10])

MARKET RISK PREMIUM DERIVED FROM ANALYSTS' LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.56%
[2] Estimated Weighted Average Long-Term Growth Rate	11.29%
[3] S&P 500 Estimated Required Market Return	12.94%

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Shares Outstg	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	334.52	93.85	31,394.23	0.10%	4.82%	0.01%	8.00%	0.01%
American Express Co	AXP	794.43	167.53	133,091.36	0.44%	1.03%	0.00%	8.50%	0.04%
Verizon Communications Inc	VZ	4,140.12	54.01	223,607.67	0.74%	4.74%	0.04%	3.50%	0.03%
Broadcom Inc	AVGO	411.62	484.93	199,604.95		2.97%		27.00%	
Boeing Co/The	BA	586.15	219.94	128,918.27		n/a		n/a	
Caterpillar Inc	CAT	547.47	191.97	105,098.01	0.35%	2.31%	0.01%	9.00%	0.03%
JPMorgan Chase & Co	JPM	2,988.16	163.69	489,131.09	1.62%	2.44%	0.04%	6.50%	0.11%
Chevron Corp	CVX	1,933.91	101.45	196,195.37		5.28%		23.50%	
Coca-Cola Co/The	KO	4,316.62	52.47	226,493.00	0.75%	3.20%	0.02%	7.00%	0.05%
AbbVie Inc	ABBV	1,767.18	107.87	190,625.28	0.63%	4.82%	0.03%	6.50%	0.04%
Walt Disney Co/The	DIS	1,817.13	169.17	307,403.37	1.02%	n/a		14.00%	0.14%
FleetCor Technologies Inc	FLT	82.60	261.27	21,581.95	0.07%	n/a		11.00%	0.01%
Extra Space Storage Inc	EXR	133.81	167.99	22,478.24	0.07%	2.98%	0.00%	5.00%	0.00%
Exxon Mobil Corp	XOM	4,233.56	58.82	249,018.18		5.92%		n/a	
Phillips 66	PSX	437.99	70.03	30,672.37	0.10%	5.14%	0.01%	20.00%	0.02%
General Electric Co	GE	1,097.66	103.03	113,092.22	0.37%	0.31%	0.00%	15.00%	0.06%
HP Inc	HPQ	1,152.52	27.36	31,532.92	0.10%	2.83%	0.00%	12.50%	0.01%
Home Depot Inc/The	HD	1,055.36	328.26	346,432.15	1.15%	2.01%	0.02%	8.50%	0.10%
Monolithic Power Systems Inc	MPWR	45.92	484.68	22,256.51		0.50%		20.50%	
International Business Machines Corp	IBM	896.32	138.93	124,525.74	0.41%	4.72%	0.02%	1.50%	0.01%
Johnson & Johnson	JNJ	2,632.48	161.50	425,145.84	1.41%	2.63%	0.04%	10.00%	0.14%
McDonald's Corp	MCD	746.80	241.11	180,060.71	0.60%	2.29%	0.01%	10.50%	0.06%
Merck & Co Inc	MRK	2,531.38	75.11	190,131.58	0.63%	3.46%	0.02%	7.50%	0.05%
3M Co	MMM	578.64	175.42	101,504.68	0.34%	3.37%	0.01%	4.50%	0.02%
American Water Works Co Inc	AWK	181.50	169.04	30,680.08	0.10%	1.43%	0.00%	8.50%	0.01%
Bank of America Corp	BAC	8,414.90	42.45	357,212.67	1.18%	1.98%	0.02%	6.00%	0.07%
Baker Hughes Co	BKR	828.49	24.73	20,488.48		2.91%		n/a	
Pfizer Inc	PFE	5,606.69	43.01	241,143.65	0.80%	3.63%	0.03%	8.00%	0.06%
Procter & Gamble Co/The	PG	2,428.32	139.80	339,478.58	1.12%	2.49%	0.03%	7.00%	0.08%
AT&T Inc	T	7,140.00	27.01	192,851.40	0.64%	7.70%	0.05%	2.50%	0.02%
Travelers Cos Inc/The	TRV	249.49	152.01	37,925.43	0.13%	2.32%	0.00%	8.00%	0.01%
Raytheon Technologies Corp	RTX	1,507.88	85.96	129,617.19	0.43%	2.37%	0.01%	1.00%	0.00%
Analog Devices Inc	ADI	537.41	167.48	90,005.59	0.30%	1.65%	0.00%	11.00%	0.03%
Walmart Inc	WMT	2,788.50	139.38	388,660.85	1.29%	1.58%	0.02%	7.50%	0.10%
Cisco Systems Inc/Delaware	CSCO	4,217.74	54.43	229,571.37	0.76%	2.72%	0.02%	7.00%	0.05%
Intel Corp	INTC	4,057.00	53.28	216,156.96	0.72%	2.61%	0.02%	7.00%	0.05%
General Motors Co	GM	1,451.72	52.71	76,520.37	0.25%	n/a		11.00%	0.03%
Microsoft Corp	MSFT	7,514.89	281.92	2,118,598.07	7.02%	0.88%	0.06%	17.00%	1.19%
Dollar General Corp	DG	233.31	212.14	49,494.38	0.16%	0.79%	0.00%	10.50%	0.02%
Cigna Corp	CI	340.11	200.16	68,076.02	0.23%	2.00%	0.00%	10.00%	0.02%
Kinder Morgan Inc	KMI	2,266.52	16.73	37,918.90	0.13%	6.46%	0.01%	19.00%	0.02%
Citigroup Inc	C	2,026.79	70.18	142,239.77	0.47%	2.91%	0.01%	5.00%	0.02%
American International Group Inc	AIG	855.20	54.89	46,942.04		2.33%		28.50%	
Altria Group Inc	MO	1,844.08	45.52	83,942.43	0.28%	7.91%	0.02%	6.00%	0.02%
HCA Healthcare Inc	HCA	320.14	242.72	77,704.87	0.26%	0.79%	0.00%	12.00%	0.03%
Under Armour Inc	UAA	188.65	20.18	3,806.86	0.01%	n/a		11.00%	0.00%
International Paper Co	IP	390.84	52.95	20,694.71	0.07%	3.87%	0.00%	12.00%	0.01%
Hewlett Packard Enterprise Co	HPE	1,308.05	14.25	18,639.71	0.06%	3.37%	0.00%	6.50%	0.00%
Abbott Laboratories	ABT	1,772.82	118.13	209,422.87	0.69%	1.52%	0.01%	11.50%	0.08%
Aflac Inc	AFL	670.74	52.13	34,965.73	0.12%	2.53%	0.00%	11.00%	0.01%
Air Products and Chemicals Inc	APD	221.37	256.11	56,693.79	0.19%	2.34%	0.00%	12.00%	0.02%
Royal Caribbean Cruises Ltd	RCL	254.69	88.95	22,655.03		n/a		n/a	
Hess Corp	HES	309.67	78.11	24,188.56		1.28%		n/a	
Archer-Daniels-Midland Co	ADM	559.37	60.01	33,567.55	0.11%	2.47%	0.00%	8.50%	0.01%
Automatic Data Processing Inc	ADP	422.72	199.92	84,510.78	0.28%	1.86%	0.01%	9.00%	0.03%
Verisk Analytics Inc	VRSK	161.35	200.27	32,313.56	0.11%	0.58%	0.00%	8.00%	0.01%
AutoZone Inc	AZO	21.55	1,697.99	36,583.19	0.12%	n/a		14.50%	0.02%
Avery Dennison Corp	AVY	82.88	207.21	17,174.19	0.06%	1.31%	0.00%	9.00%	0.01%
Enphase Energy Inc	ENPH	134.62	149.97	20,189.11		n/a		40.00%	
MSCI Inc	MSCI	82.44	608.34	50,152.77	0.17%	0.68%	0.00%	16.00%	0.03%
Ball Corp	BLL	326.61	89.97	29,385.10		0.89%		21.00%	
Ceridian HCM Holding Inc	CDAY	149.86	112.62	16,877.46		n/a		n/a	
Carrier Global Corp	CARR	867.70	51.76	44,912.20		0.93%		n/a	
Bank of New York Mellon Corp/The	BK	863.17	51.84	44,746.94	0.15%	2.62%	0.00%	5.00%	0.01%
Otis Worldwide Corp	OTIS	426.78	82.28	35,115.38		1.17%		n/a	
Baxter International Inc	BAX	499.91	80.43	40,207.76	0.13%	1.39%	0.00%	8.50%	0.01%
Becton Dickinson and Co	BDX	287.19	245.82	70,597.05	0.23%	1.35%	0.00%	7.50%	0.02%
Berkshire Hathaway Inc	BRK/B	1,325.37	272.94	361,747.31	1.20%	n/a		6.00%	0.07%
Best Buy Co Inc	BBY	245.96	105.71	26,000.85	0.09%	2.65%	0.00%	8.50%	0.01%
Boston Scientific Corp	BSX	1,423.85	43.39	61,780.98	0.20%	n/a		17.50%	0.04%
Bristol-Myers Squibb Co	BMJ	2,222.11	59.17	131,482.49	0.44%	3.31%	0.01%	12.50%	0.05%
Fortune Brands Home & Security Inc	FBHS	137.88	89.42	12,329.14	0.04%	1.16%	0.00%	11.00%	0.00%
Brown-Forman Corp	BF/B	309.72	67.01	20,754.07	0.07%	1.07%	0.00%	11.00%	0.01%
Cabot Oil & Gas Corp	COG	399.66	21.76	8,696.69	0.03%	2.02%	0.00%	14.50%	0.00%
Campbell Soup Co	CPB	301.52	41.81	12,606.47	0.04%	3.54%	0.00%	5.00%	0.00%
Kansas City Southern	KSU	90.98	270.64	24,622.02	0.08%	0.80%	0.00%	10.50%	0.01%
Hilton Worldwide Holdings Inc	HLT	278.69	132.11	36,817.21		n/a		n/a	
Carnival Corp	CCL	981.05	25.01	24,536.01		n/a		n/a	
Qorvo Inc	QRVO	111.14	167.19	18,581.83		n/a		27.00%	

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Shares Outstg	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Lumen Technologies Inc	LUMN	1,105.23	12.39	13,693.82	0.05%	8.07%	0.00%	2.50%	0.00%
UDR Inc	UDR	296.85	52.98	15,726.95	0.05%	2.74%	0.00%	6.00%	0.00%
Clorox Co/The	CLX	122.81	165.61	20,339.06	0.07%	2.80%	0.00%	5.00%	0.00%
Paycom Software Inc	PAYC	60.09	495.75	29,791.60	0.10%	n/a		19.50%	0.02%
CMS Energy Corp	CMS	289.65	59.73	17,301.03	0.06%	2.91%	0.00%	6.00%	0.00%
Newell Brands Inc	NWL	425.40	22.14	9,418.36		4.16%		n/a	
Colgate-Palmolive Co	CL	843.51	75.58	63,752.71	0.21%	2.38%	0.01%	4.50%	0.01%
Comerica Inc	CMA	133.92	80.50	10,780.88	0.04%	3.38%	0.00%	2.50%	0.00%
IPG Photonics Corp	IPGP	53.50	158.40	8,473.92	0.03%	n/a		17.00%	0.00%
Conagra Brands Inc	CAG	480.33	33.87	16,268.91	0.05%	3.69%	0.00%	5.00%	0.00%
Consolidated Edison Inc	ED	353.38	72.59	25,652.00	0.08%	4.27%	0.00%	4.00%	0.00%
Corning Inc	GLW	854.03	36.49	31,163.63	0.10%	2.63%	0.00%	20.00%	0.02%
Cummins Inc	CMI	143.61	224.56	32,248.39	0.11%	2.58%	0.00%	7.00%	0.01%
Caesars Entertainment Inc	CZR	213.43	112.28	23,963.92		n/a			
Danaher Corp	DHR	713.90	304.44	217,339.72	0.72%	0.28%	0.00%	18.00%	0.13%
Target Corp	TGT	488.04	228.77	111,648.68	0.37%	1.57%	0.01%	13.00%	0.05%
Deere & Co	DE	310.06	335.07	103,892.14	0.34%	1.25%	0.00%	17.00%	0.06%
Dominion Energy Inc	D	808.49	73.02	59,035.72	0.20%	3.45%	0.01%	12.00%	0.02%
Dover Corp	DOV	143.96	155.50	22,385.94	0.07%	1.29%	0.00%	7.00%	0.01%
Alliant Energy Corp	LNT	250.26	55.98	14,009.44	0.05%	2.88%	0.00%	5.50%	0.00%
Duke Energy Corp	DUK	769.00	97.59	75,046.71	0.25%	4.04%	0.01%	7.00%	0.02%
Regency Centers Corp	REG	169.87	67.33	11,437.62	0.04%	3.53%	0.00%	16.00%	0.01%
Eaton Corp PLC	ETN	398.60	149.31	59,514.97	0.20%	2.04%	0.00%	9.00%	0.02%
Ecolab Inc	ECL	286.09	208.62	59,683.47	0.20%	0.92%	0.00%	6.00%	0.01%
PerkinElmer Inc	PKI	112.11	173.29	19,428.24	0.06%	0.16%	0.00%	11.00%	0.01%
Emerson Electric Co	EMR	597.80	94.20	56,312.76	0.19%	2.14%	0.00%	10.50%	0.02%
EOG Resources Inc	EOG	583.86	80.27	46,866.44	0.16%	2.06%	0.00%	12.50%	0.02%
Aon PLC	AON	225.75	285.77	64,511.72	0.21%	0.71%	0.00%	7.00%	0.01%
Entergy Corp	ETR	200.96	99.31	19,956.84	0.07%	3.83%	0.00%	3.00%	0.00%
Equifax Inc	EFX	121.84	253.42	30,875.93	0.10%	0.62%	0.00%	10.50%	0.01%
IQVIA Holdings Inc	IQV	191.61	239.54	45,898.74	0.15%	n/a		14.00%	0.02%
Gartner Inc	IT	83.65	303.88	25,419.26	0.08%	n/a		18.50%	0.02%
FedEx Corp	FDX	265.65	219.29	58,254.39	0.19%	1.37%	0.00%	12.00%	0.02%
FMC Corp	FMC	128.70	91.56	11,783.68	0.04%	2.10%	0.00%	9.50%	0.00%
Brown & Brown Inc	BRO	281.61	55.45	15,615.11	0.05%	0.67%	0.00%	9.50%	0.00%
Ford Motor Co	F	3,923.91	14.16	55,562.59		n/a		47.50%	
NextEra Energy Inc	NEE	1,961.76	78.52	154,037.16	0.51%	1.96%	0.01%	10.50%	0.05%
Franklin Resources Inc	BEN	502.85	29.72	14,944.82	0.05%	3.77%	0.00%	11.50%	0.01%
Freeport-McMoRan Inc	FCX	1,468.06	32.53	47,756.12		0.92%		37.50%	
Gap Inc/The	GPS	376.11	22.70	8,537.58		2.11%		25.00%	
Dexcom Inc	DXCM	96.75	546.86	52,908.16		n/a		34.00%	
General Dynamics Corp	GD	279.54	196.03	54,798.42	0.18%	2.43%	0.00%	5.00%	0.01%
General Mills Inc	GIS	605.69	59.82	36,232.50	0.12%	3.41%	0.00%	3.00%	0.00%
Genuine Parts Co	GPC	143.21	121.23	17,361.59	0.06%	2.69%	0.00%	7.00%	0.00%
Atmos Energy Corp	ATO	130.79	88.20	11,535.77	0.04%	2.83%	0.00%	7.00%	0.00%
WW Grainger Inc	GWV	52.07	393.06	20,468.21	0.07%	1.65%	0.00%	5.50%	0.00%
Halliburton Co	HAL	890.50	21.62	19,252.59	0.06%	0.83%	0.00%	9.00%	0.01%
L3Harris Technologies Inc	LHX	200.94	220.24	44,255.91		1.85%		n/a	
Healthpeak Properties Inc	PEAK	538.97	33.48	18,044.65		3.58%		-12.00%	
Catalent Inc	CTLT	171.02	133.07	22,757.37		n/a		21.00%	
Fortive Corp	FTV	358.39	70.57	25,291.65	0.08%	0.40%	0.00%	6.00%	0.01%
Hershey Co/The	HSY	145.43	169.25	24,613.35	0.08%	2.13%	0.00%	5.50%	0.00%
Synchrony Financial	SYF	569.70	48.88	27,846.89	0.09%	1.80%	0.00%	4.50%	0.00%
Hormel Foods Corp	HRL	542.56	41.00	22,244.84	0.07%	2.39%	0.00%	9.00%	0.01%
Arthur J Gallagher & Co	AJG	206.75	148.65	30,733.39	0.10%	1.29%	0.00%	12.50%	0.01%
Mondelez International Inc	MDLZ	1,397.82	58.18	81,324.99	0.27%	2.41%	0.01%	8.00%	0.02%
CenterPoint Energy Inc	CNP	592.89	24.60	14,585.09	0.05%	2.76%	0.00%	9.50%	0.00%
Humana Inc	HUM	128.51	389.15	50,007.72	0.17%	0.72%	0.00%	12.00%	0.02%
Willis Towers Watson PLC	WLTW	129.04	232.46	29,997.10	0.10%	1.38%	0.00%	8.00%	0.01%
Illinois Tool Works Inc	ITW	314.97	206.63	65,081.84	0.22%	2.36%	0.01%	11.00%	0.02%
CDW Corp/DE	CDW	137.50	182.02	25,026.84	0.08%	0.88%	0.00%	10.00%	0.01%
Trane Technologies PLC	TT	237.61	172.65	41,023.19		1.37%		n/a	
Interpublic Group of Cos Inc/The	IPG	393.62	36.67	14,434.05	0.05%	2.95%	0.00%	12.00%	0.01%
International Flavors & Fragrances Inc	IFF	254.53	133.72	34,035.08	0.11%	2.36%	0.00%	7.50%	0.01%
Jacobs Engineering Group Inc	J	130.31	132.53	17,270.51	0.06%	0.63%	0.00%	15.00%	0.01%
Generac Holdings Inc	GNRC	63.12	408.67	25,795.66		n/a		23.50%	
NXP Semiconductors NV	NXPI	265.14	195.87	51,931.99	0.17%	1.15%	0.00%	11.00%	0.02%
Hanesbrands Inc	HBI	349.15	17.16	5,991.45	0.02%	3.50%	0.00%	6.50%	0.00%
Kellogg Co	K	340.88	63.92	21,788.99	0.07%	3.63%	0.00%	3.50%	0.00%
Broadridge Financial Solutions Inc	BR	116.17	166.64	19,358.24	0.06%	1.54%	0.00%	8.50%	0.01%
Kimberly-Clark Corp	KMB	336.76	132.44	44,600.76	0.15%	3.44%	0.01%	5.50%	0.01%
Kimco Realty Corp	KIM	612.89	20.75	12,717.47	0.04%	3.28%	0.00%	10.50%	0.00%
Oracle Corp	ORCL	2,733.69	87.13	238,186.06	0.79%	1.47%	0.01%	10.00%	0.08%
Kroger Co/The	KR	743.64	40.43	30,065.28	0.10%	2.08%	0.00%	5.00%	0.00%
Leggett & Platt Inc	LEG	133.30	44.84	5,977.13	0.02%	3.75%	0.00%	10.00%	0.00%
Lennar Corp	LEN	271.85	93.68	25,467.10	0.08%	1.07%	0.00%	12.00%	0.01%
Eli Lilly & Co	LLY	956.58	231.05	221,018.04	0.73%	1.47%	0.01%	11.00%	0.08%
Bath & Body Works Inc	BBWI	264.37	63.03	16,663.43		0.95%		23.50%	
Charter Communications Inc	CHTR	183.82	727.56	133,741.53		n/a		27.50%	
Lincoln National Corp	LNC	187.92	68.75	12,919.71	0.04%	2.44%	0.00%	9.00%	0.00%
Loews Corp	L	257.27	53.93	13,874.73	0.05%	0.46%	0.00%	12.50%	0.01%
Lowe's Cos Inc	LOW	692.43	202.86	140,466.96	0.47%	1.58%	0.01%	14.50%	0.07%
IDEX Corp	IEX	76.00	206.95	15,727.79	0.05%	1.04%	0.00%	8.00%	0.00%
Marsh & McLennan Cos Inc	MMC	506.63	151.43	76,718.38	0.25%	1.41%	0.00%	11.00%	0.03%
Masco Corp	MAS	247.16	55.55	13,729.90	0.05%	1.69%	0.00%	9.50%	0.00%
S&P Global Inc	SPGI	241.00	424.89	102,398.49	0.34%	0.72%	0.00%	10.50%	0.04%
Medtronic PLC	MDT	1,345.81	125.35	168,697.28	0.56%	2.01%	0.01%	9.00%	0.05%
Viatis Inc	VTRS	1,209.29	13.55	16,385.88		3.25%		n/a	
CVS Health Corp	CVS	1,319.58	84.86	111,979.13	0.37%	2.36%	0.01%	6.00%	0.02%
DuPont de Nemours Inc	DD	523.06	67.99	35,562.65		1.76%		n/a	

STANDARD AND POOR'S 500 INDEX

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Name	Ticker	Shares Outstg	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Micron Technology Inc	MU	1,125.75	70.98	79,906.02	0.26%	0.56%	0.00%	11.50%	0.03%
Motorola Solutions Inc	MSI	169.33	232.32	39,337.58	0.13%	1.22%	0.00%	7.00%	0.01%
Cboe Global Markets Inc	CBOE	106.62	123.86	13,206.32	0.04%	1.55%	0.00%	12.00%	0.01%
Laboratory Corp of America Holdings	LH	96.40	281.44	27,130.82	0.09%	n/a		5.50%	0.00%
Newmont Corp	NEM	799.13	54.30	43,392.54	0.14%	4.05%	0.01%	14.00%	0.02%
NIKE Inc	NKE	1,278.09	145.23	185,616.58		0.76%		24.00%	
NiSource Inc	NI	392.41	24.23	9,508.09	0.03%	3.63%	0.00%	9.50%	0.00%
Norfolk Southern Corp	NSC	246.97	239.25	59,088.05	0.20%	1.82%	0.00%	10.00%	0.02%
Principal Financial Group Inc	PFG	268.39	64.40	17,284.57	0.06%	3.91%	0.00%	5.50%	0.00%
Eversource Energy	ES	343.64	81.76	28,096.25	0.09%	2.95%	0.00%	6.50%	0.01%
Northrop Grumman Corp	NOC	160.11	360.15	57,663.26	0.19%	1.74%	0.00%	7.00%	0.01%
Wells Fargo & Co	WFC	4,106.41	46.41	190,578.53		1.72%		-0.50%	
Nucor Corp	NUE	293.70	98.49	28,926.02	0.10%	1.64%	0.00%	8.00%	0.01%
PVH Corp	PVH	71.05	102.79	7,303.44	0.02%	n/a		12.50%	0.00%
Occidental Petroleum Corp	OXY	933.74	29.58	27,619.88		0.14%		36.50%	
Omnicom Group Inc	OMC	214.41	72.46	15,536.00	0.05%	3.86%	0.00%	6.00%	0.00%
ONEOK Inc	OKE	445.66	57.99	25,843.88	0.09%	6.45%	0.01%	9.50%	0.01%
Raymond James Financial Inc	RJF	205.79	92.28	18,990.12	0.06%	1.13%	0.00%	6.50%	0.00%
Parker-Hannifin Corp	PH	128.56	279.62	35,947.11	0.12%	1.47%	0.00%	13.00%	0.02%
Rollins Inc	ROL	492.08	35.33	17,385.15	0.06%	0.91%	0.00%	11.50%	0.01%
PPL Corp	PPL	769.61	27.88	21,456.62		5.95%		-7.00%	
ConocoPhillips	COP	1,339.08	67.77	90,749.59	0.30%	2.72%	0.01%	13.50%	0.04%
PulteGroup Inc	PHM	259.52	45.92	11,917.34	0.04%	1.22%	0.00%	12.50%	0.00%
Pinnacle West Capital Corp	PNW	112.79	72.36	8,161.19	0.03%	4.59%	0.00%	5.00%	0.00%
PNC Financial Services Group Inc/The	PNC	424.99	195.64	83,145.63	0.28%	2.56%	0.01%	10.00%	0.03%
PPG Industries Inc	PPG	237.36	143.01	33,944.42	0.11%	1.65%	0.00%	3.00%	0.00%
Progressive Corp/The	PGR	585.30	90.39	52,905.27	0.18%	0.44%	0.00%	5.00%	0.01%
Public Service Enterprise Group Inc	PEG	505.58	60.90	30,789.64	0.10%	3.35%	0.00%	3.50%	0.00%
Robert Half International Inc	RHI	111.97	100.33	11,233.95	0.04%	1.52%	0.00%	7.50%	0.00%
Edison International	EIX	379.71	55.47	21,062.24		4.78%		n/a	
Schlumberger NV	SLB	1,398.43	29.64	41,449.55	0.14%	1.69%	0.00%	8.50%	0.01%
Charles Schwab Corp/The	SCHW	1,808.71	72.84	131,746.36	0.44%	0.99%	0.00%	7.00%	0.03%
Sherwin-Williams Co/The	SHW	263.30	279.73	73,653.47	0.24%	0.79%	0.00%	10.50%	0.03%
West Pharmaceutical Services Inc	WST	73.98	424.54	31,407.04	0.10%	0.16%	0.00%	17.00%	0.02%
J M Smucker Co/The	SJM	108.36	120.03	13,006.33	0.04%	3.30%	0.00%	4.00%	0.00%
Snap-on Inc	SNA	53.97	208.95	11,277.24	0.04%	2.35%	0.00%	4.50%	0.00%
AMETEK Inc	AME	231.21	124.01	28,671.86	0.09%	0.65%	0.00%	10.00%	0.01%
Southern Co/The	SO	1,059.66	61.97	65,667.19	0.22%	4.26%	0.01%	6.00%	0.01%
Truist Financial Corp	TFC	1,334.83	58.65	78,287.84	0.26%	3.27%	0.01%	7.00%	0.02%
Southwest Airlines Co	LUV	591.65	51.43	30,428.30		n/a		34.50%	
W R Berkley Corp	WRB	177.53	73.18	12,991.65	0.04%	0.71%	0.00%	14.50%	0.01%
Stanley Black & Decker Inc	SWK	162.96	175.31	28,568.87	0.09%	1.80%	0.00%	6.00%	0.01%
Public Storage	PSA	175.23	297.10	52,060.24	0.17%	2.69%	0.00%	2.50%	0.00%
Arista Networks Inc	ANET	76.72	343.64	26,363.03	0.09%	n/a		4.50%	0.00%
Sysco Corp	SY	512.08	78.50	40,198.44	0.13%	2.39%	0.00%	10.00%	0.01%
Corteva Inc	CTVA	734.42	42.08	30,904.44		1.33%		n/a	
Texas Instruments Inc	TXN	923.21	192.21	177,450.19	0.59%	2.39%	0.01%	9.00%	0.05%
Textron Inc	TXT	224.14	69.81	15,647.07	0.05%	0.11%	0.00%	8.00%	0.00%
Thermo Fisher Scientific Inc	TMO	393.42	571.33	224,772.08	0.74%	0.18%	0.00%	14.50%	0.11%
TJX Cos Inc/The	TJX	1,202.54	65.98	79,343.52	0.26%	1.58%	0.00%	12.00%	0.03%
Globe Life Inc	GL	101.72	89.03	9,056.22	0.03%	0.89%	0.00%	8.00%	0.00%
Johnson Controls International plc	JCI	712.22	68.08	48,488.21	0.16%	1.59%	0.00%	8.50%	0.01%
Ulta Beauty Inc	ULTA	54.36	360.92	19,618.89	0.06%	n/a		12.50%	0.01%
Union Pacific Corp	UNP	652.12	196.01	127,822.63	0.42%	2.18%	0.01%	10.00%	0.04%
Keysight Technologies Inc	KEYS	184.20	164.29	30,261.56	0.10%	n/a		17.00%	0.02%
UnitedHealth Group Inc	UNH	942.92	390.74	368,435.39	1.22%	1.48%	0.02%	12.00%	0.15%
Marathon Oil Corp	MRO	788.40	13.67	10,777.41		1.46%		69.00%	
Bio-Rad Laboratories Inc	BIO	24.70	745.95	18,427.95	0.06%	n/a		11.50%	0.01%
Ventas Inc	VTR	393.48	55.21	21,723.75	0.07%	3.26%	0.00%	4.50%	0.00%
VF Corp	VFC	392.64	66.99	26,302.89	0.09%	2.93%	0.00%	5.50%	0.00%
Vornado Realty Trust	VNO	191.56	42.01	8,047.48		5.05%		-19.00%	
Vulcan Materials Co	VMC	132.68	169.16	22,443.81	0.07%	0.87%	0.00%	10.00%	0.01%
Weyerhaeuser Co	WY	749.78	35.57	26,669.82		1.91%		22.00%	
Whirlpool Corp	WHR	62.70	203.86	12,782.63	0.04%	2.75%	0.00%	5.50%	0.00%
Williams Cos Inc/The	WMB	1,214.96	25.94	31,516.04	0.10%	6.32%	0.01%	10.50%	0.01%
WEC Energy Group Inc	WEC	315.44	88.20	27,821.37	0.09%	3.07%	0.00%	6.50%	0.01%
Adobe Inc	ADBE	475.80	575.72	273,927.58	0.91%	n/a		15.50%	0.14%
AES Corp/The	AES	666.36	22.83	15,213.00		2.64%		24.00%	
Amgen Inc	AMGN	567.85	212.65	120,753.73	0.40%	3.31%	0.01%	5.50%	0.02%
Apple Inc	AAPL	16,530.17	141.50	2,339,018.49	7.75%	0.62%	0.05%	17.00%	1.32%
Autodesk Inc	ADSK	219.85	285.17	62,694.62	0.21%	n/a		18.00%	0.04%
Cintas Corp	CTAS	104.01	380.66	39,592.07	0.13%	1.00%	0.00%	12.50%	0.02%
Comcast Corp	CMCSA	4,580.29	55.93	256,175.79	0.85%	1.79%	0.02%	11.00%	0.09%
Molson Coors Beverage Co	TAP	200.57	46.38	9,302.53		2.93%		41.00%	
KLA Corp	KLAC	151.99	334.51	50,843.18	0.17%	1.26%	0.00%	18.00%	0.03%
Marriott International Inc/MD	MAR	325.66	148.09	48,226.40	0.16%	n/a		17.50%	0.03%
McCormick & Co Inc/MD	MCK	249.35	81.03	20,204.99	0.07%	1.68%	0.00%	6.00%	0.00%
PACCAR Inc	PCAR	347.17	78.92	27,398.89	0.09%	1.72%	0.00%	5.50%	0.00%
Costco Wholesale Corp	COST	441.83	449.35	198,534.06	0.66%	0.70%	0.00%	10.50%	0.07%
First Republic Bank/CA	FRC	179.06	192.88	34,537.09	0.11%	0.46%	0.00%	13.50%	0.02%
Stryker Corp	SYK	377.10	263.72	99,447.76	0.33%	0.96%	0.00%	11.00%	0.04%
Tyson Foods Inc	TSN	294.82	78.94	23,272.78	0.08%	2.25%	0.00%	6.00%	0.00%
Lamb Weston Holdings Inc	LW	145.12	61.37	8,905.95	0.03%	1.53%	0.00%	2.50%	0.00%
Applied Materials Inc	AMAT	902.93	128.73	116,233.92	0.38%	0.75%	0.00%	16.50%	0.06%
American Airlines Group Inc	AAL	647.46	20.52	13,285.84		n/a			
Cardinal Health Inc	CAH	283.76	49.46	14,034.82	0.05%	3.97%	0.00%	12.00%	0.01%
Cerner Corp	CERN	295.59	70.52	20,844.72	0.07%	1.25%	0.00%	11.00%	0.01%
Cincinnati Financial Corp	CINF	161.18	114.22	18,410.32	0.06%	2.21%	0.00%	13.50%	0.01%
ViacomCBS Inc	VIAC	605.81	39.51	23,935.67	0.08%	2.43%	0.00%	7.00%	0.01%
DR Horton Inc	DHI	358.19	83.97	30,077.55	0.10%	0.95%	0.00%	15.50%	0.02%

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Name	Ticker	Shares Outstg	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Electronic Arts Inc	EA	284.58	142.25	40,481.79	0.13%	0.48%	0.00%	12.50%	0.02%
Expeditors International of Washington Inc	EXPD	169.89	119.13	20,239.11	0.07%	0.97%	0.00%	10.00%	0.01%
Fastenal Co	FAST	574.74	51.61	29,662.28	0.10%	2.17%	0.00%	9.00%	0.01%
M&T Bank Corp	MTB	128.68	149.34	19,216.77	0.06%	2.95%	0.00%	8.00%	0.01%
Xcel Energy Inc	XEL	538.44	62.50	33,652.31	0.11%	2.93%	0.00%	6.00%	0.01%
Fiserv Inc	FISV	662.21	108.50	71,849.24	0.24%	n/a		13.00%	0.03%
Fifth Third Bancorp	FITB	690.72	42.44	29,314.07	0.10%	2.83%	0.00%	8.00%	0.01%
Gilead Sciences Inc	GILD	1,253.81	69.85	87,578.56	0.29%	4.07%	0.01%	3.50%	0.01%
Hasbro Inc	HAS	137.68	89.22	12,284.08	0.04%	3.05%	0.00%	12.50%	0.01%
Huntington Bancshares Inc/OH	HBAN	1,476.56	15.46	22,827.57	0.08%	3.88%	0.00%	8.50%	0.01%
Welltower Inc	WELL	422.56	82.40	34,819.19		2.96%		-1.50%	
Biogen Inc	BIIB	149.03	282.99	42,174.85	0.14%	n/a		7.00%	0.01%
Northern Trust Corp	NTRS	208.40	107.81	22,467.06	0.07%	2.60%	0.00%	7.00%	0.01%
Packaging Corp of America	PKG	94.99	137.44	13,055.70	0.04%	2.91%	0.00%	5.00%	0.00%
Paychex Inc	PAYX	360.62	112.45	40,551.72	0.13%	2.35%	0.00%	7.00%	0.01%
People's United Financial Inc	PBCT	427.96	17.47	7,476.37	0.02%	4.18%	0.00%	4.00%	0.00%
QUALCOMM Inc	QCOM	1,128.00	128.98	145,489.44	0.48%	2.11%	0.01%	14.00%	0.07%
Roper Technologies Inc	ROP	105.42	446.13	47,032.81	0.16%	0.50%	0.00%	8.00%	0.01%
Ross Stores Inc	ROST	355.37	108.85	38,681.59	0.13%	1.05%	0.00%	7.50%	0.01%
IDEXX Laboratories Inc	IDXX	85.08	621.90	52,908.76	0.18%	n/a		14.50%	0.03%
Starbucks Corp	SBUX	1,179.10	110.31	130,066.52	0.43%	1.78%	0.01%	16.00%	0.07%
KeyCorp	KEY	956.37	21.62	20,676.72	0.07%	3.42%	0.00%	9.50%	0.01%
Fox Corp	FOXA	322.36	40.11	12,929.94		1.20%		n/a	
Fox Corp	FOX	250.15	37.12	9,285.68		1.29%		n/a	
State Street Corp	STT	365.63	84.72	30,975.92	0.10%	2.69%	0.00%	7.00%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	370.03	26.71	9,883.50		n/a		n/a	
US Bancorp	USB	1,482.65	59.44	88,128.66	0.29%	3.10%	0.01%	6.50%	0.02%
A O Smith Corp	AOS	133.20	61.07	8,134.40	0.03%	1.70%	0.00%	9.50%	0.00%
NortonLifeLock Inc	NLOK	581.74	25.30	14,717.92	0.05%	1.98%	0.00%	7.00%	0.00%
T Rowe Price Group Inc	TROW	226.94	196.70	44,638.51	0.15%	2.20%	0.00%	8.00%	0.01%
Waste Management Inc	WM	421.10	149.36	62,895.35	0.21%	1.54%	0.00%	7.50%	0.02%
Constellation Brands Inc	STZ	168.25	210.69	35,448.80	0.12%	1.44%	0.00%	7.00%	0.01%
Xilinx Inc	XLNX	247.47	150.99	37,365.19	0.12%	n/a		8.00%	0.01%
DENTSPLY SIRONA Inc	XRAY	218.55	58.05	12,686.89	0.04%	0.76%	0.00%	5.50%	0.00%
Zions Bancorp NA	ZION	162.07	61.89	10,030.51	0.03%	2.46%	0.00%	8.50%	0.00%
Alaska Air Group Inc	ALK	125.23	58.60	7,338.65		n/a		80.00%	
Invesco Ltd	IVZ	461.39	24.11	11,124.16	0.04%	2.82%	0.00%	15.00%	0.01%
Linde PLC	LIN	515.11	293.38	151,123.27		1.45%		n/a	
Intuit Inc	INTU	273.09	539.51	147,335.86	0.49%	0.50%	0.00%	16.00%	0.08%
Morgan Stanley	MS	1,824.56	97.31	177,548.03	0.59%	2.88%	0.02%	8.50%	0.05%
Microchip Technology Inc	MCHP	274.04	153.49	42,062.40	0.14%	1.14%	0.00%	10.50%	0.01%
Chubb Ltd	CB	431.57	173.48	74,868.94	0.25%	1.84%	0.00%	12.50%	0.03%
Hologic Inc	HOLX	253.49	73.81	18,709.88		n/a		25.00%	
Citizens Financial Group Inc	CFG	426.08	46.98	20,017.38	0.07%	3.32%	0.00%	8.50%	0.01%
O'Reilly Automotive Inc	ORLY	68.95	611.06	42,133.81	0.14%	n/a		11.00%	0.02%
Allstate Corp/The	ALL	295.68	127.31	37,643.15	0.12%	2.54%	0.00%	5.00%	0.01%
Equity Residential	EQR	374.46	80.92	30,301.06	0.10%	2.98%	0.00%	2.00%	0.00%
BorgWarner Inc	BWA	239.79	43.21	10,361.33	0.03%	1.57%	0.00%	9.50%	0.00%
Organon & Co	OGN	253.55	32.79	8,313.74		3.42%		n/a	
Host Hotels & Resorts Inc	HST	713.97	16.33	11,659.18	0.04%	n/a		10.00%	0.00%
Incyte Corp	INCY	220.84	68.78	15,189.03		n/a		58.50%	
Simon Property Group Inc	SPG	328.61	129.97	42,709.57	0.14%	4.62%	0.01%	1.50%	0.00%
Eastman Chemical Co	EMN	135.78	100.74	13,678.78	0.05%	2.74%	0.00%	10.50%	0.00%
Twitter Inc	TWTR	797.97	60.39	48,189.23		n/a		35.00%	
AvalonBay Communities Inc	AVB	139.62	221.64	30,944.71	0.10%	2.87%	0.00%	1.50%	0.00%
Prudential Financial Inc	PRU	386.00	105.20	40,607.20	0.13%	4.37%	0.01%	4.50%	0.01%
United Parcel Service Inc	UPS	728.29	182.10	132,621.61	0.44%	2.24%	0.01%	10.50%	0.05%
Walgreens Boots Alliance Inc	WBA	864.99	47.05	40,697.64	0.13%	4.06%	0.01%	6.00%	0.01%
STERIS PLC	STE	99.76	204.28	20,378.77	0.07%	0.84%	0.00%	10.00%	0.01%
McKesson Corp	MCK	154.68	199.38	30,839.10	0.10%	0.94%	0.00%	9.00%	0.01%
Lockheed Martin Corp	LMT	276.92	345.10	95,563.71	0.32%	3.25%	0.01%	7.50%	0.02%
AmerisourceBergen Corp	ABC	207.79	119.45	24,820.16	0.08%	1.47%	0.00%	6.50%	0.01%
Capital One Financial Corp	COF	446.11	161.97	72,257.08	0.24%	1.48%	0.00%	5.50%	0.01%
Waters Corp	WAT	61.36	357.30	21,925.00	0.07%	n/a		6.00%	0.00%
Dollar Tree Inc	DLTR	224.91	95.72	21,528.58	0.07%	n/a		9.50%	0.01%
Darden Restaurants Inc	DRI	130.32	151.47	19,739.57	0.07%	2.90%	0.00%	19.00%	0.01%
Match Group Inc	MTCH	276.81	156.99	43,456.56	0.14%	n/a		15.00%	0.02%
Domino's Pizza Inc	DPZ	36.85	476.96	17,577.88	0.06%	0.79%	0.00%	15.00%	0.01%
NVR Inc	NVR	3.56	4,794.08	17,086.10	0.06%	n/a		9.00%	0.01%
NetApp Inc	NTAP	223.63	89.76	20,072.94	0.07%	2.23%	0.00%	6.50%	0.00%
Citrix Systems Inc	CTXS	124.23	107.37	13,338.79	0.04%	1.38%	0.00%	8.50%	0.00%
DXC Technology Co	DXC	251.90	33.61	8,466.49	0.03%	n/a		6.50%	0.00%
Old Dominion Freight Line Inc	ODFL	115.81	285.98	33,119.34	0.11%	0.28%	0.00%	9.50%	0.01%
DaVita Inc	DVA	104.80	116.26	12,184.05	0.04%	n/a		16.00%	0.01%
Hartford Financial Services Group Inc/The	HIG	347.19	70.25	24,389.82	0.08%	1.99%	0.00%	8.50%	0.01%
Iron Mountain Inc	IRM	289.46	43.45	12,577.04	0.04%	5.69%	0.00%	8.00%	0.00%
Estee Lauder Cos Inc/The	EL	232.91	299.93	69,857.30	0.23%	0.71%	0.00%	11.50%	0.03%
Cadence Design Systems Inc	CDNS	276.78	151.44	41,915.56	0.14%	n/a		9.50%	0.01%
Tyler Technologies Inc	TYL	40.84	458.65	18,732.64	0.06%	n/a		12.50%	0.01%
Universal Health Services Inc	UHS	75.87	138.37	10,498.69	0.03%	0.58%	0.00%	11.00%	0.00%
Skyworks Solutions Inc	SKWS	165.15	164.78	27,212.59	0.09%	1.36%	0.00%	13.50%	0.01%
Quest Diagnostics Inc	DGX	122.18	145.31	17,754.12	0.06%	1.71%	0.00%	7.50%	0.00%
Activision Blizzard Inc	ATVI	777.71	77.39	60,186.82	0.20%	0.61%	0.00%	13.00%	0.03%
Rockwell Automation Inc	ROK	116.03	294.04	34,116.29	0.11%	1.46%	0.00%	7.50%	0.01%
Kraft Heinz Co/The	KHC	1,223.39	36.82	45,045.11	0.15%	4.35%	0.01%	1.50%	0.00%
American Tower Corp	AMT	455.14	265.41	120,798.97	0.40%	1.97%	0.01%	9.50%	0.04%
Regeneron Pharmaceuticals Inc	REGN	105.11	605.18	63,608.05	0.21%	n/a		12.50%	0.03%
Amazon.com Inc	AMZN	506.44	3,285.04	1,663,678.94		n/a		30.00%	
Jack Henry & Associates Inc	JKHY	74.01	164.06	12,142.74	0.04%	1.12%	0.00%	9.50%	0.00%
Ralph Lauren Corp	RL	48.63	111.04	5,399.65	0.02%	2.48%	0.00%	6.00%	0.00%

STANDARD AND POOR'S 500 INDEX

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Name	Ticker	Shares Outstg	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Boston Properties Inc	BPX	156.17	108.35	16,920.91		3.62%		-2.00%	
Amphenol Corp	APH	598.19	73.23	43,805.09	0.15%	0.79%	0.00%	10.50%	0.02%
Howmet Aerospace Inc	HWM	428.91	31.20	13,382.05	0.04%	0.26%	0.00%	12.00%	0.01%
Pioneer Natural Resources Co	PXD	243.96	166.51	40,621.61	0.13%	1.35%	0.00%	20.00%	0.03%
Valero Energy Corp	VLO	408.82	70.57	28,850.64	0.10%	5.55%	0.01%	13.00%	0.01%
Synopsys Inc	SNPS	152.50	299.41	45,660.92	0.15%	n/a		12.50%	0.02%
Western Union Co/The	WU	406.35	20.22	8,216.36	0.03%	4.65%	0.00%	6.00%	0.00%
Etsy Inc	ETSY	126.58	207.96	26,322.95		n/a		30.00%	
CH Robinson Worldwide Inc	CHRW	131.71	87.00	11,458.94	0.04%	2.34%	0.00%	8.00%	0.00%
Accenture PLC	ACN	634.14	319.92	202,873.11	0.67%	1.21%	0.01%	10.00%	0.07%
TransDigm Group Inc	TDG	55.11	624.57	34,421.30	0.11%	n/a		11.00%	0.01%
Yum! Brands Inc	YUM	295.65	122.31	36,160.58	0.12%	1.64%	0.00%	10.50%	0.01%
Prologis Inc	PLD	739.75	125.43	92,786.22	0.31%	2.01%	0.01%	8.50%	0.03%
FirstEnergy Corp	FE	544.19	35.62	19,384.19	0.06%	4.38%	0.00%	11.50%	0.01%
VeriSign Inc	VRSN	111.87	205.01	22,935.29	0.08%	n/a		8.50%	0.01%
Quanta Services Inc	PWR	139.15	113.82	15,838.28	0.05%	0.21%	0.00%	12.50%	0.01%
Henry Schein Inc	HSIC	139.69	76.16	10,639.02	0.04%	n/a		6.50%	0.00%
Ameren Corp	AEE	255.41	81.00	20,688.21	0.07%	2.72%	0.00%	6.50%	0.00%
ANSYS Inc	ANSS	87.25	340.45	29,705.28	0.10%	n/a		8.00%	0.01%
NVIDIA Corp	NVDA	2,500.00	207.16	517,900.00	1.71%	0.08%	0.00%	17.00%	0.29%
Sealed Air Corp	SEE	149.89	54.79	8,212.64	0.03%	1.46%	0.00%	13.50%	0.00%
Cognizant Technology Solutions Corp	CTSH	525.60	74.21	39,004.55	0.13%	1.29%	0.00%	6.50%	0.01%
SVB Financial Group	SIVB	56.76	646.88	36,714.97	0.12%	n/a		8.00%	0.01%
Intuitive Surgical Inc	ISRG	118.90	994.15	118,203.44	0.39%	n/a		15.00%	0.06%
Take-Two Interactive Software Inc	TTWO	116.52	154.07	17,951.93	0.06%	n/a		12.00%	0.01%
Republic Services Inc	RSG	318.37	120.06	38,222.90	0.13%	1.53%	0.00%	7.50%	0.01%
eBay Inc	EBAY	650.06	69.67	45,289.40	0.15%	1.03%	0.00%	16.50%	0.02%
Goldman Sachs Group Inc/The	GS	337.10	378.03	127,432.78	0.42%	2.12%	0.00%	7.00%	0.03%
SBA Communications Corp	SBAC	109.55	330.57	36,214.94	0.07%	0.70%		45.00%	
Sempra Energy	SRE	315.07	126.50	39,856.48	0.13%	3.48%	0.00%	10.00%	0.01%
Moody's Corp	MCO	186.20	355.11	66,121.48	0.22%	0.70%	0.00%	8.50%	0.02%
Booking Holdings Inc	BKNG	41.06	2,373.87	97,471.10	0.32%	n/a		14.00%	0.05%
F5 Networks Inc	FFIV	60.31	198.78	11,988.82	0.04%	n/a		7.00%	0.00%
Akamai Technologies Inc	AKAM	162.83	104.59	17,030.39	0.06%	n/a		9.50%	0.01%
Charles River Laboratories International Inc	CRL	50.40	412.67	20,797.33	0.07%	n/a		7.00%	0.00%
MarketAxess Holdings Inc	MKTX	38.00	420.69	15,986.22	0.05%	0.63%	0.00%	14.00%	0.01%
Devon Energy Corp	DVN	677.00	35.51	24,040.27	0.08%	1.24%	0.00%	20.00%	0.02%
Alphabet Inc	GOOGL	301.09	2,673.52	804,956.77		n/a		n/a	
Bio-Techne Corp	TECH	39.24	484.57	19,013.56	0.06%	0.26%	0.00%	13.00%	0.01%
Teleflex Inc	TFX	46.80	376.55	17,622.92	0.06%	0.36%	0.00%	14.50%	0.01%
Netflix Inc	NFLX	442.60	610.34	270,134.04		n/a		23.50%	
Allegion plc	ALLE	89.70	132.18	11,856.02	0.04%	1.09%	0.00%	9.50%	0.00%
Agilent Technologies Inc	A	302.72	157.53	47,687.95	0.16%	0.49%	0.00%	11.50%	0.02%
Anthem Inc	ANTM	243.82	372.80	90,894.23	0.30%	1.21%	0.00%	13.00%	0.04%
Trimble Inc	TRMB	251.62	82.25	20,695.75	0.07%	n/a		14.00%	0.01%
CME Group Inc	CME	359.14	193.38	69,449.53	0.23%	1.86%	0.00%	8.50%	0.02%
Juniper Networks Inc	JNPR	325.15	27.52	8,948.18	0.03%	2.91%	0.00%	7.00%	0.00%
BlackRock Inc	BLK	152.20	838.66	127,640.70	0.42%	1.97%	0.01%	9.50%	0.04%
DTE Energy Co	DTE	193.75	111.71	21,644.04	0.07%	2.95%	0.00%	2.00%	0.00%
Nasdaq Inc	NDAQ	167.20	193.02	32,273.72	0.11%	1.12%	0.00%	6.50%	0.01%
Celanese Corp	CE	111.12	150.64	16,738.36	0.06%	1.81%	0.00%	6.50%	0.00%
Philip Morris International Inc	PM	1,558.54	94.79	147,734.10	0.49%	5.27%	0.03%	6.50%	0.03%
salesforce.com Inc	CRM	979.00	271.22	265,524.38	0.88%	n/a		20.00%	0.18%
Ingersoll Rand Inc	IR	420.16	50.41	21,180.01		n/a		n/a	
Huntington Ingalls Industries Inc	HII	40.14	193.06	7,749.62	0.03%	2.36%	0.00%	7.00%	0.00%
MetLife Inc	MET	856.90	61.73	52,896.25	0.18%	3.11%	0.01%	6.50%	0.01%
Under Armour Inc	UA	245.18	17.52	4,295.61		n/a		n/a	
Tapestry Inc	TPR	278.32	37.02	10,303.41	0.03%	2.70%	0.00%	1.50%	0.00%
CSX Corp	CSX	2,254.50	29.74	67,048.71	0.22%	1.26%	0.00%	11.50%	0.03%
Edwards Lifesciences Corp	EW	623.33	113.21	70,566.96	0.23%	n/a		13.00%	0.03%
Ameriprise Financial Inc	AMP	113.75	264.12	30,042.59	0.10%	1.71%	0.00%	13.50%	0.01%
Zebra Technologies Corp	ZBRA	53.40	515.42	27,524.97	0.09%	n/a		12.50%	0.01%
Zimmer Biomet Holdings Inc	ZBH	208.84	146.36	30,565.82	0.10%	0.66%	0.00%	8.50%	0.01%
CBRE Group Inc	CBRE	335.74	97.36	32,687.26	0.11%	n/a		10.50%	0.01%
Mastercard Inc	MA	978.83	347.68	340,319.27	1.13%	0.51%	0.01%	12.50%	0.14%
CarMax Inc	KMX	162.94	127.96	20,849.16	0.07%	n/a		12.50%	0.01%
Intercontinental Exchange Inc	ICE	563.16	114.82	64,661.46	0.21%	1.15%	0.00%	8.00%	0.02%
Fidelity National Information Services Inc	FIS	617.69	121.68	75,160.64		1.28%		28.00%	
Chipotle Mexican Grill Inc	CMG	28.10	1,817.52	51,063.22		n/a		22.00%	
Wynn Resorts Ltd	WYNN	115.67	84.75	9,803.20		n/a		27.00%	
Live Nation Entertainment Inc	LYV	221.42	91.13	20,178.37		n/a		n/a	
Assurant Inc	AIZ	58.81	157.75	9,277.91	0.03%	1.67%	0.00%	11.50%	0.00%
NRG Energy Inc	NRG	244.78	40.83	9,994.24		3.18%		-1.50%	
Regions Financial Corp	RF	954.54	21.31	20,341.23	0.07%	3.19%	0.00%	9.50%	0.01%
Monster Beverage Corp	MNST	528.89	88.83	46,980.94	0.16%	n/a		11.50%	0.02%
Mosaic Co/The	MOS	379.90	35.72	13,569.92		0.84%		33.50%	
Expedia Group Inc	EXPE	145.30	163.90	23,814.01		n/a		n/a	
Evergy Inc	EVER	226.99	62.20	14,118.96	0.05%	3.44%	0.00%	8.00%	0.00%
Discovery Inc	DISCA	169.09	25.38	4,291.43	0.01%	n/a		13.50%	0.00%
CF Industries Holdings Inc	CF	215.10	55.82	12,006.88	0.04%	2.15%	0.00%	19.50%	0.01%
Leidos Holdings Inc	LDOS	141.57	96.13	13,608.64	0.05%	1.50%	0.00%	9.00%	0.00%
APA Corp	APA	378.02	21.43	8,101.01		1.17%		72.50%	
Alphabet Inc	GOOG	320.17	2,665.31	853,346.97		n/a		21.00%	
TE Connectivity Ltd	TEL	328.00	137.22	45,007.75	0.15%	1.46%	0.00%	9.00%	0.01%
Cooper Cos Inc/The	COO	49.30	413.31	20,377.84	0.07%	0.01%	0.00%	14.50%	0.01%
Discover Financial Services	DFS	299.47	122.85	36,789.64	0.12%	1.63%	0.00%	16.00%	0.02%
Visa Inc	V	1,687.64	222.75	375,922.48	1.24%	0.57%	0.01%	12.00%	0.15%
Mid-America Apartment Communities Inc	MAA	116.02	186.75	21,666.74	0.07%	2.20%	0.00%	9.00%	0.01%
Xylem Inc/NY	XYL	180.16	123.68	22,282.56	0.07%	0.91%	0.00%	10.50%	0.01%
Marathon Petroleum Corp	MPC	638.20	61.81	39,447.27		3.75%		n/a	

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Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Tractor Supply Co	TSCO	114.34	202.61	23,166.02	0.08%	1.03%	0.00%	11.00%	0.01%
Advanced Micro Devices Inc	AMD	1,212.97	102.90	124,814.10		n/a		29.00%	
ResMed Inc	RMD	145.68	263.55	38,394.23	0.13%	0.64%	0.00%	8.50%	0.01%
Mettler-Toledo International Inc	MTD	23.12	1,377.36	31,840.43	0.11%	n/a		12.00%	0.01%
Copart Inc	CPRT	237.10	138.72	32,890.65	0.11%	n/a		10.00%	0.01%
Albemarle Corp	ALB	116.95	218.97	25,608.54	0.08%	0.71%	0.00%	6.50%	0.01%
Fortinet Inc	FTNT	163.32	292.04	47,695.97	0.16%	n/a		20.00%	0.03%
Moderna Inc	MRNA	403.65	384.86	155,347.20		n/a		n/a	
Essex Property Trust Inc	ESS	65.04	319.74	20,794.29		2.61%		-0.50%	
Realty Income Corp	O	389.39	64.86	25,255.71	0.08%	4.37%	0.00%	6.00%	0.01%
Westrock Co	WRK	267.01	49.83	13,304.91	0.04%	1.93%	0.00%	8.00%	0.00%
IHS Markit Ltd	INFO	398.84	116.62	46,512.84	0.15%	0.69%	0.00%	10.50%	0.02%
Westinghouse Air Brake Technologies Corp	WAB	189.03	86.21	16,296.62	0.05%	0.56%	0.00%	9.50%	0.01%
Pool Corp	POOL	40.10	434.41	17,420.28	0.06%	0.74%	0.00%	15.00%	0.01%
Western Digital Corp	WDC	308.75	56.44	17,425.74	0.06%	n/a		1.00%	0.00%
PepsiCo Inc	PEP	1,382.12	150.41	207,883.92	0.69%	2.86%	0.02%	6.50%	0.04%
Diamondback Energy Inc	FANG	181.05	94.67	17,140.38		1.90%		n/a	
ServiceNow Inc	NOW	198.10	622.27	123,271.69		n/a		44.50%	
Church & Dwight Co Inc	CHD	245.54	82.57	20,274.49	0.07%	1.22%	0.00%	8.00%	0.01%
Duke Realty Corp	DRE	378.34	47.87	18,111.14		2.13%		-1.00%	
Federal Realty Investment Trust	FRT	77.77	117.99	9,175.85	0.03%	3.63%	0.00%	1.00%	0.00%
MGM Resorts International	MGM	481.88	43.15	20,793.12		0.02%		25.00%	
American Electric Power Co Inc	AEP	500.25	81.18	40,610.38	0.13%	3.65%	0.00%	6.50%	0.01%
PTC Inc	PTC	117.38	119.79	14,061.19		n/a		n/a	
JB Hunt Transport Services Inc	JBHT	105.20	167.22	17,590.88	0.06%	0.72%	0.00%	8.00%	0.00%
Lam Research Corp	LRCX	140.80	569.15	80,138.03	0.27%	1.05%	0.00%	17.50%	0.05%
Mohawk Industries Inc	MHK	69.03	177.40	12,245.74	0.04%	n/a		10.50%	0.00%
Pentair PLC	PNR	165.86	72.63	12,046.63	0.04%	1.10%	0.00%	11.00%	0.00%
Vertex Pharmaceuticals Inc	VRTX	259.43	181.39	47,057.64	0.16%	n/a		17.00%	0.03%
Amcor PLC	AMCR	1,535.04	11.59	17,791.13	0.06%	4.06%	0.00%	15.00%	0.01%
Facebook Inc	FB	2,383.81	339.39	809,041.95	2.68%	n/a		18.50%	0.50%
T-Mobile US Inc	TMUS	1,247.97	127.76	159,440.14	0.53%	n/a		8.50%	0.04%
United Rentals Inc	URI	72.39	350.93	25,403.82	0.08%	n/a		10.50%	0.01%
ABIOMED Inc	ABMD	45.38	325.52	14,772.10	0.05%	n/a		9.50%	0.00%
Honeywell International Inc	HON	690.40	212.28	146,557.90	0.49%	1.75%	0.01%	9.50%	0.05%
Alexandria Real Estate Equities Inc	ARE	152.36	191.07	29,112.00	0.10%	2.34%	0.00%	12.00%	0.01%
Delta Air Lines Inc	DAL	639.92	42.61	27,266.78		n/a		49.00%	
Seagate Technology Holdings PLC	STX	225.97	82.52	18,647.21	0.06%	3.25%	0.00%	4.00%	0.00%
United Airlines Holdings Inc	UAL	323.61	47.57	15,394.18		n/a		n/a	
News Corp	NWS	199.63	23.23	4,637.40		0.86%		n/a	
Centene Corp	CNC	583.04	62.31	36,329.47	0.12%	n/a		9.50%	0.01%
Martin Marietta Materials Inc	MLM	62.38	341.68	21,312.97	0.07%	0.71%	0.00%	7.00%	0.00%
Teradyne Inc	TER	164.97	109.17	18,010.10	0.06%	0.37%	0.00%	13.50%	0.01%
PayPal Holdings Inc	PYPL	1,175.03	260.21	305,755.08	1.01%	n/a		16.00%	0.16%
Tesla Inc	TSLA	1,001.77	775.48	776,850.27		n/a		n/a	
DISH Network Corp	DISH	289.45	43.46	12,579.67	0.04%	n/a		2.50%	0.00%
Dow Inc	DOW	745.23	57.56	42,895.15		4.86%		n/a	
Penn National Gaming Inc	PENN	156.79	72.46	11,360.93		n/a		30.00%	
Everest Re Group Ltd	RE	39.87	250.78	9,999.35	0.03%	2.47%	0.00%	10.50%	0.00%
Teledyne Technologies Inc	TDY	46.61	429.58	20,021.44	0.07%	n/a		14.50%	0.01%
News Corp	NWSA	391.21	23.53	9,205.22		0.85%		n/a	
Exelon Corp	EXC	976.76	48.34	47,216.58	0.16%	3.17%	0.00%	5.50%	0.01%
Global Payments Inc	GPX	293.75	157.58	46,288.81	0.15%	0.63%	0.00%	16.50%	0.03%
Crown Castle International Corp	CCI	432.20	173.32	74,908.21	0.25%	3.07%	0.01%	8.50%	0.02%
Aptiv PLC	APTIV	270.51	148.97	40,297.58	0.13%	n/a		15.50%	0.02%
Advance Auto Parts Inc	AAP	63.00	208.89	13,160.28	0.04%	1.91%	0.00%	11.00%	0.00%
Align Technology Inc	ALGN	79.01	665.43	52,576.96	0.17%	n/a		17.00%	0.03%
Illumina Inc	ILMN	156.50	405.61	63,477.97	0.21%	n/a		14.00%	0.03%
LKQ Corp	LKQ	293.88	50.32	14,787.79	0.05%	n/a		12.00%	0.01%
Nielsen Holdings PLC	NLSN	358.80	19.19	6,885.37		1.25%		n/a	
Garmin Ltd	GRMN	192.32	155.46	29,898.38	0.10%	1.72%	0.00%	10.00%	0.01%
Zoetis Inc	ZTS	473.94	194.14	92,011.49	0.30%	0.52%	0.00%	11.00%	0.03%
Equinix Inc	EQIX	89.75	790.13	70,914.17	0.23%	1.45%	0.00%	17.00%	0.04%
Digital Realty Trust Inc	DLR	289.97	144.45	41,886.74	0.14%	3.21%	0.00%	8.00%	0.01%
Las Vegas Sands Corp	LVS	763.99	36.60	27,962.03	0.09%	n/a		17.50%	0.02%
Discovery Inc	DISCK	330.15	24.27	8,012.64		n/a		n/a	

Notes:

[1] Equals sum of Col. [9]

[2] Equals sum of Col. [11]

[3] Equals $([1] \times (1 + (0.5 \times [2]))) \div [2]$

[4] Source: Bloomberg Professional as of September 30, 2021

[5] Source: Bloomberg Professional as of September 30, 2021

[6] Equals [4] x [5]

[7] Equals weight in S&P 500 based on market capitalization [6] if Growth Rate >0% and ≤20%

[8] Source: Bloomberg Professional, as of September 30, 2021

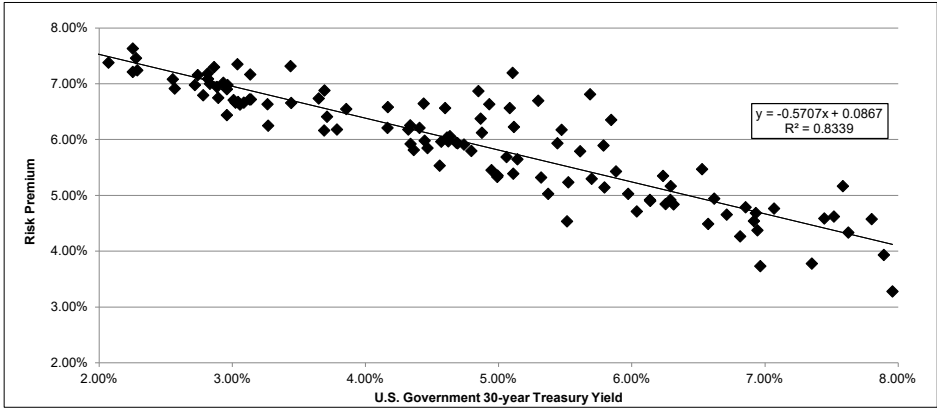
[9] Equals [7] x [8]

[10] Source: Value Line, as of September 30, 2021

[11] Equals [7] x [10]

Bond Yield Plus Risk Premium
Vertically Integrated Electric Utilities

	[1]	[2]	[3]
Average			
Authorized VI	U.S. Govt. 30-		
Electric ROE	year Treasury	Risk Premium	
1992.1	12.38%	7.80%	4.58%
1992.2	11.83%	7.89%	3.93%
1992.3	12.03%	7.45%	4.59%
1992.4	12.14%	7.52%	4.62%
1993.1	11.84%	7.07%	4.77%
1993.2	11.64%	6.86%	4.79%
1993.3	11.15%	6.31%	4.84%
1993.4	11.04%	6.14%	4.90%
1994.1	11.07%	6.57%	4.49%
1994.2	11.13%	7.35%	3.78%
1994.3	12.75%	7.58%	5.17%
1994.4	11.24%	7.96%	3.28%
1995.1	11.96%	7.63%	4.34%
1995.2	11.32%	6.94%	4.37%
1995.3	11.37%	6.71%	4.66%
1995.4	11.58%	6.23%	5.35%
1996.1	11.46%	6.29%	5.17%
1996.2	11.46%	6.92%	4.54%
1996.3	10.70%	6.96%	3.74%
1996.4	11.56%	6.62%	4.94%
1997.1	11.08%	6.81%	4.27%
1997.2	11.62%	6.93%	4.68%
1997.3	12.00%	6.53%	5.47%
1997.4	11.06%	6.14%	4.92%
1998.1	11.31%	5.88%	5.43%
1998.2	12.20%	5.85%	6.35%
1998.3	11.65%	5.47%	6.18%
1998.4	12.30%	5.10%	7.20%
1999.1	10.40%	5.37%	5.03%
1999.2	10.94%	5.79%	5.15%
1999.3	10.75%	6.04%	4.71%
1999.4	11.10%	6.25%	4.85%
2000.1	11.21%	6.29%	4.92%
2000.2	11.00%	5.97%	5.03%
2000.3	11.68%	5.79%	5.89%
2000.4	12.50%	5.69%	6.81%
2001.1	11.38%	5.44%	5.93%
2001.2	11.00%	5.70%	5.30%
2001.3	10.76%	5.52%	5.23%
2001.4	11.99%	5.30%	6.70%
2002.1	10.05%	5.51%	4.54%
2002.2	11.41%	5.61%	5.79%
2002.3	11.65%	5.08%	6.57%
2002.4	11.57%	4.93%	6.64%
2003.1	11.72%	4.85%	6.87%
2003.2	11.16%	4.60%	6.56%
2003.3	10.50%	5.11%	5.39%
2003.4	11.34%	5.11%	6.23%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.91320
R Square	0.83394
Adjusted R Square	0.83252
Standard Error	0.00422
Observations	119

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.010447	0.010447	587.548521	0.000000
Residual	117	0.002080	0.000018		
Total	118	0.012527			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0867	0.001155	75.03	0.0000	0.0844	0.0890	0.0844	0.0890
U.S. Govt. 30-year Treasury	(0.5707)	0.023545	(24.24)	0.0000	(0.6174)	(0.5241)	(0.6174)	(0.5241)

	[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]	1.93%	7.57%	9.49%
Blue Chip Near-Term Projected Forecast (Q1 2022 - Q1 2023) [5]	2.50%	7.24%	9.74%
Blue Chip Long-Term Projected Forecast (2023-2027) [6]	3.50%	6.67%	10.17%
AVERAGE			9.80%

Bond Yield Plus Risk Premium
Vertically Integrated Electric Utilities

	[1]	[2]	[3]
	Average		
	Authorized VI	U.S. Govt. 30-	
	Electric ROE	year Treasury	Risk Premium
2004.1	11.00%	4.88%	6.12%
2004.2	10.64%	5.32%	5.32%
2004.3	10.75%	5.06%	5.69%
2004.4	11.24%	4.86%	6.38%
2005.1	10.63%	4.69%	5.93%
2005.2	10.31%	4.47%	5.85%
2005.3	11.08%	4.44%	6.65%
2005.4	10.63%	4.68%	5.95%
2006.1	10.70%	4.63%	6.06%
2006.2	10.79%	5.14%	5.65%
2006.3	10.35%	4.99%	5.35%
2006.4	10.65%	4.74%	5.91%
2007.1	10.59%	4.80%	5.80%
2007.2	10.33%	4.99%	5.34%
2007.3	10.40%	4.95%	5.45%
2007.4	10.65%	4.61%	6.04%
2008.1	10.62%	4.41%	6.21%
2008.2	10.54%	4.57%	5.97%
2008.3	10.43%	4.44%	5.98%
2008.4	10.39%	3.65%	6.74%
2009.1	10.75%	3.44%	7.31%
2009.2	10.75%	4.17%	6.58%
2009.3	10.50%	4.32%	6.18%
2009.4	10.59%	4.34%	6.26%
2010.1	10.59%	4.62%	5.97%
2010.2	10.18%	4.36%	5.82%
2010.3	10.40%	3.86%	6.55%
2010.4	10.38%	4.17%	6.21%
2011.1	10.09%	4.56%	5.53%
2011.2	10.26%	4.34%	5.92%
2011.3	10.57%	3.69%	6.88%
2011.4	10.39%	3.04%	7.35%
2012.1	10.30%	3.14%	7.17%
2012.2	9.95%	2.93%	7.02%
2012.3	9.90%	2.74%	7.16%
2012.4	10.16%	2.86%	7.30%
2013.1	9.85%	3.13%	6.72%
2013.2	9.86%	3.14%	6.72%
2013.3	10.12%	3.71%	6.41%
2013.4	9.97%	3.79%	6.18%
2014.1	9.86%	3.69%	6.17%
2014.2	10.10%	3.44%	6.66%
2014.3	9.90%	3.26%	6.64%
2014.4	9.94%	2.96%	6.98%
2015.1	9.64%	2.55%	7.08%
2015.2	9.83%	2.88%	6.94%
2015.3	9.40%	2.96%	6.44%
2015.4	9.86%	2.96%	6.90%
2016.1	9.70%	2.72%	6.98%

Notes:

[1] Source: Regulatory Research Associates, rate cases through September 30, 2021

[2] Source: Bloomberg Professional, quarterly bond yields are the average of each trading day in the quarter

[3] Equals Column [1] – Column [2]

[4] Source: Bloomberg Professional, 30-day average as of September 30, 2021

[5] Source: Blue Chip Financial Forecasts, Vol. 40, No. 10, October 1, 2021, at 2

[6] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14

[7] See notes [4], [5] & [6]

[8] Equals $0.086666 + (-0.570723 \times \text{Column [7]})$

[9] Equals Column [7] + Column [8]

Bond Yield Plus Risk Premium

Vertically Integrated Electric Utilities

	[1]	[2]	[3]
Average			
Authorized VI	U.S. Govt. 30-		
Electric ROE	year Treasury	Risk Premium	
2016.2	9.48%	2.57%	6.91%
2016.3	9.74%	2.28%	7.46%
2016.4	9.83%	2.83%	7.00%
2017.1	9.72%	3.04%	6.67%
2017.2	9.64%	2.90%	6.75%
2017.3	10.00%	2.82%	7.18%
2017.4	9.91%	2.82%	7.09%
2018.1	9.69%	3.02%	6.66%
2018.2	9.75%	3.09%	6.66%
2018.3	9.69%	3.06%	6.63%
2018.4	9.52%	3.27%	6.25%
2019.1	9.72%	3.01%	6.71%
2019.2	9.58%	2.78%	6.79%
2019.3	9.53%	2.29%	7.24%
2019.4	9.89%	2.25%	7.63%
2020.1	9.72%	1.89%	7.83%
2020.2	9.58%	1.38%	8.20%
2020.3	9.30%	1.37%	7.93%
2020.4	9.56%	1.62%	7.94%
2021.1	9.45%	2.07%	7.38%
2021.2	9.47%	2.25%	7.21%
2021.3	9.27%	1.93%	7.34%
AVERAGE	10.65%	4.62%	6.03%
MEDIAN	10.59%	4.63%	6.18%

FLOTATION COST ADJUSTMENT

Company	Date [i]	Shares Issued (000)	Offering Price	Under-writing Discount [ii]	Offering Expense (\$000)	Net Proceeds Per Share	Total Flotation Costs (\$000)	Equity Issue Before Costs (\$000)	Net Proceeds (\$000)	Flotation Cost Percentage
Oklahoma Gas & Electric	8/21/2003	5,324	\$ 21.60	\$ 0.7900	\$ 325	\$ 20.75	\$ 4,531	\$ 115,000	\$ 110,469	3.94%
							\$ 4,531	\$ 115,000	\$ 110,469	3.94%

Notes:

[i] Offering Completion Date

[ii] Underwriting discount was 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 0.9606, 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:

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

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
						Expected Dividend	Value Line	Yahoo!	Zacks	Average		ROE
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Dividend Adjusted for Flotation Costs	Earnings Growth	Finance Earnings Growth	Earnings Growth	Earnings Growth	ROE	Adjusted for Flotation Costs
ALLETE, Inc.	ALE	\$2.52	\$64.39	3.91%	4.02%	4.19%	5.00%	5.67%	6.00%	5.56%	9.58%	9.74%
Alliant Energy Corporation	LNT	\$1.61	\$59.39	2.71%	2.79%	2.90%	5.50%	5.80%	5.90%	5.73%	8.52%	8.64%
Ameren Corporation	AEE	\$2.20	\$85.94	2.56%	2.65%	2.76%	6.50%	7.70%	7.30%	7.17%	9.82%	9.93%
American Electric Power Company, Inc.	AEP	\$2.96	\$87.05	3.40%	3.50%	3.65%	6.50%	6.03%	5.70%	6.08%	9.58%	9.72%
Avista Corporation	AVA	\$1.69	\$40.93	4.13%	4.23%	4.40%	3.00%	6.20%	5.10%	4.77%	8.99%	9.17%
Duke Energy Corporation	DUK	\$3.94	\$102.54	3.84%	3.96%	4.12%	7.00%	5.45%	5.30%	5.92%	9.87%	10.03%
Entergy Corporation	ETR	\$3.80	\$109.82	3.46%	3.51%	3.65%	3.00%	3.50%	1.40%	2.63%	6.14%	6.28%
Evergy, Inc.	EVRG	\$2.14	\$66.29	3.23%	3.33%	3.47%	8.00%	5.70%	6.10%	6.60%	9.93%	10.07%
IDACORP, Inc.	IDA	\$2.84	\$105.32	2.70%	2.75%	2.86%	4.00%	3.20%	3.90%	3.70%	6.45%	6.56%
MGE Energy, Inc.	MGEE	\$1.55	\$78.72	1.97%	2.02%	2.11%	5.50%	5.60%	5.60%	5.57%	7.59%	7.67%
NextEra Energy, Inc.	NEE	\$1.54	\$83.29	1.85%	1.93%	2.01%	10.50%	7.85%	8.30%	8.88%	10.81%	10.89%
NorthWestern Corporation	NWE	\$2.48	\$62.04	4.00%	4.08%	4.25%	3.00%	4.50%	4.80%	4.10%	8.18%	8.35%
Otter Tail Corporation	OTTR	\$1.56	\$55.36	2.82%	2.92%	3.03%	7.00%	9.00%	4.70%	6.90%	9.82%	9.93%
Portland General Electric Company	POR	\$1.72	\$50.02	3.44%	3.58%	3.72%	8.50%	7.10%	8.60%	8.07%	11.64%	11.79%
Southern Company	SO	\$2.64	\$65.23	4.05%	4.16%	4.34%	6.00%	6.50%	4.90%	5.80%	9.96%	10.14%
Xcel Energy Inc.	XEL	\$1.83	\$66.59	2.75%	2.83%	2.95%	6.00%	6.30%	6.10%	6.13%	8.97%	9.08%
Median											9.58%	9.73%
Flotation Cost Adjustment												0.15%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 30-day average as of September 30, 2021

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Equals [4] / (1 - Flotation Cost)

[6] Source: Value Line

[7] Source: Yahoo! Finance

[8] Source: Zacks

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

[10] Equals [4] + [9]

[11] Equals [5] + [9]

[12] Equals Average ([11]) - Average ([10])

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

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2020	2022	2023	2024	2025	2026	2022-26 Cap. Ex. / 2020 Net Plant
ALLETE, Inc.	ALE							
Capital Spending per Share			\$3.70	\$4.10	\$4.50	\$4.50	\$4.50	
Common Shares Outstanding			52.75	53.38	54.00	54.00	54.00	
Capital Expenditures			\$195.2	\$218.8	\$243.0	\$243.0	\$243.0	23.61%
Net Plant		\$4,840.8						
Alliant Energy Corporation	LNT							
Capital Spending per Share			\$6.60	\$6.30	\$6.00	\$6.00	\$6.00	
Common Shares Outstanding			251.00	251.75	252.50	252.50	252.50	
Capital Expenditures			\$1,656.6	\$1,586.0	\$1,515.0	\$1,515.0	\$1,515.0	54.32%
Net Plant		\$14,336.0						
Ameren Corporation	AEE							
Capital Spending per Share			\$11.80	\$12.28	\$12.75	\$12.75	\$12.75	
Common Shares Outstanding			265.00	272.50	280.00	280.00	280.00	
Capital Expenditures			\$3,127.0	\$3,344.9	\$3,570.0	\$3,570.0	\$3,570.0	64.09%
Net Plant		\$26,807.0						
American Electric Power Company, Inc.	AEP							
Capital Spending per Share			\$15.60	\$15.43	\$15.25	\$15.25	\$15.25	
Common Shares Outstanding			530.00	540.00	550.00	550.00	550.00	
Capital Expenditures			\$8,268.0	\$8,329.5	\$8,387.5	\$8,387.5	\$8,387.5	65.35%
Net Plant		\$63,902.0						
Avista Corporation	AVA							
Capital Spending per Share			\$6.05	\$5.90	\$5.75	\$5.75	\$5.75	
Common Shares Outstanding			72.00	73.50	75.00	75.00	75.00	
Capital Expenditures			\$435.6	\$433.7	\$431.3	\$431.3	\$431.3	43.33%
Net Plant		\$4,991.6						
Duke Energy Corporation	DUK							
Capital Spending per Share			\$16.60	\$16.05	\$15.50	\$15.50	\$15.50	
Common Shares Outstanding			770.00	770.00	770.00	770.00	770.00	
Capital Expenditures			\$12,782.0	\$12,358.5	\$11,935.0	\$11,935.0	\$11,935.0	57.07%
Net Plant		\$106,782.0						
Entergy Corporation	ETR							
Capital Spending per Share			\$17.35	\$18.30	\$19.25	\$19.25	\$19.25	
Common Shares Outstanding			\$205.00	206.50	208.00	208.00	208.00	
Capital Expenditures			\$3,556.8	\$3,779.0	\$4,004.0	\$4,004.0	\$4,004.0	49.80%
Net Plant		\$38,853.0						
Eversys, Inc.	EVRG							
Capital Spending per Share			\$8.00	\$8.00	\$8.00	\$8.00	\$8.00	
Common Shares Outstanding			\$230.00	230.00	230.00	230.00	230.00	
Capital Expenditures			\$1,840.0	\$1,840.0	\$1,840.0	\$1,840.0	\$1,840.0	45.76%
Net Plant		\$20,106.0						
IDACORP, Inc.	IDA							
Capital Spending per Share			\$7.70	\$8.85	\$10.00	\$10.00	\$10.00	
Common Shares Outstanding			50.45	50.45	50.45	50.45	50.45	
Capital Expenditures			\$388.5	\$446.5	\$504.5	\$504.5	\$504.5	49.87%
Net Plant		\$4,709.5						
MGE Energy, Inc.	MGEE							
Capital Spending per Share			\$4.85	\$4.68	\$4.50	\$4.50	\$4.50	
Common Shares Outstanding			\$36.16	36.16	36.16	36.16	36.16	
Capital Expenditures			\$175.4	\$169.0	\$162.7	\$162.7	\$162.7	47.05%
Net Plant		\$1,769.4						
NextEra Energy, Inc.	NEE							
Capital Spending per Share			\$7.60	\$8.30	\$9.00	\$9.00	\$9.00	
Common Shares Outstanding			1,980	2,003	2,025	2,025.00	2,025.00	
Capital Expenditures			\$15,048.0	\$16,620.8	\$18,225.0	\$18,225.0	\$18,225.0	94.05%
Net Plant		\$91,803.0						
NorthWestern Corporation	NWE							
Capital Spending per Share			\$8.50	\$7.88	\$7.25	\$7.25	\$7.25	
Common Shares Outstanding			53.50	54.00	54.50	54.50	54.50	
Capital Expenditures			\$454.8	\$425.3	\$395.1	\$395.1	\$395.1	41.70%
Net Plant		\$4,952.9						

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

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2020	2022	2023	2024	2025	2026	2022-26 Cap. Ex. / 2020 Net Plant
Otter Tail Corporation	OTTR							
Capital Spending per Share			\$5.55	\$4.15	\$2.75	\$2.75	\$2.75	
Common Shares Outstanding			\$41.70	41.85	42.00	42.00	42.00	
Capital Expenditures			\$231.4	\$173.7	\$115.5	\$115.5	\$115.5	36.68%
Net Plant		\$2,049.3						
Portland General Electric Company	POR							
Capital Spending per Share			\$6.30	\$6.28	\$6.25	\$6.25	\$6.25	
Common Shares Outstanding			89.80	89.90	90.00	90.00	90.00	
Capital Expenditures			\$565.7	\$564.1	\$562.5	\$562.5	\$562.5	37.37%
Net Plant		\$7,539.0						
Southern Company	SO							
Capital Spending per Share			\$6.35	\$6.18	\$6.00	\$6.00	\$6.00	
Common Shares Outstanding			1,105	1,105.00	1,105	1,105.00	1,105.00	
Capital Expenditures			\$7,016.8	\$6,823.4	\$6,630.0	\$6,630.0	\$6,630.0	38.49%
Net Plant		\$87,634.0						
Xcel Energy Inc.	XEL							
Capital Spending per Share			\$8.70	\$8.60	\$8.50	\$8.50	\$8.50	
Common Shares Outstanding			544	548.50	553	553	553	
Capital Expenditures			\$4,732.8	\$4,717.1	\$4,700.5	\$4,700.5	\$4,700.5	54.83%
Net Plant		\$42,950.0						
Oklahoma Gas & Electric	OG&E							
Capital Expenditures [8]			\$820.0	\$820.0	\$820.0	\$820.0	\$820.0	46.69%
Net Electric Plant in Service [9]		\$8,781.05						
			OG&E CapEx Total (2022-2026)					\$4,100.0
			OG&E CapEx Annual Average					\$820.0
			Proxy Group Median					48.4%
			OG&E as % Proxy Group Median					0.96

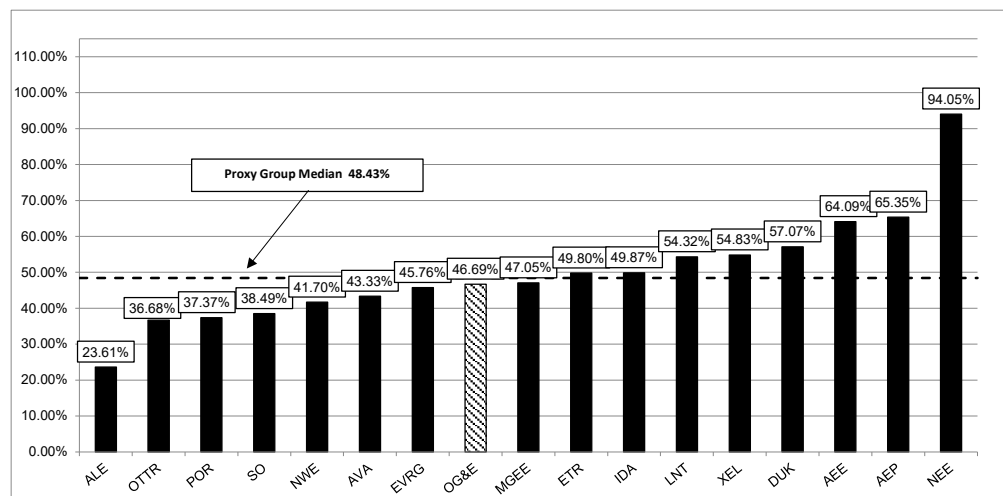
Notes:

[1] - [6] Value Line July 23, August 13, and September 10, 2021

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

[8] - [9] Data provided by Oklahoma Gas & Electric Company.

2022-2025 CAPITAL EXPENDITURES AS A PERCENT OF 2020 NET PLANT



Projected CAPEX / 2020 Net Plant

Company		2022-2026
1 ALLETE, Inc.	ALE	23.61%
2 Otter Tail Corporation	OTTR	36.68%
3 Portland General Electric Company	POR	37.37%
4 Southern Company	SO	38.49%
5 NorthWestern Corporation	NWE	41.70%
6 Avista Corporation	AVA	43.33%
7 Evergy, Inc.	EVRG	45.76%
8 Oklahoma Gas & Electric	OG&E	46.69%
9 MGE Energy, Inc.	MGEE	47.05%
10 Entergy Corporation	ETR	49.80%
11 IDACORP, Inc	IDA	49.87%
12 Alliant Energy Corporation	LNT	54.32%
13 Xcel Energy Inc.	XEL	54.83%
14 Duke Energy Corporation	DUK	57.07%
15 Ameren Corporation	AEE	64.09%
16 American Electric Power Company, Inc.	AEP	65.35%
17 NextEra Energy, Inc.	NEE	94.05%
Proxy Group Median		48.43%
OG&E/Proxy Group		0.96

Notes:

Source: Exhibit AEB-10 page 1 col. [7]

COMPARISON OF OG AND PROXY GROUP COMPANIES
RISK ASSESSMENT

Direct Exhibit AEB-11

Page 1 of 6

Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	Test Year	Rate Base	Non-Volumetric Rate Design				Capital	
						Revenue Decoupling	Formula-based rates	Straight Fixed-Variable Rate Design	Non-Volumetric Rate Design		
ALLETE, Inc.	ALLETE (Minnesota Power)	Minnesota	Electric	Fully Forecast	Average	No	No	No	No		
Alliant Energy Corporation	Interstate Power & Light Co.	Iowa	Electric	Historical	Average	No	No	No	No		
	Interstate Power & Light Co.	Iowa	Gas	Historical	Average	No	No	No	No		
	Wisconsin Power & Light Co.	Wisconsin	Electric	Fully Forecast	Average	No	No	No	No		
	Wisconsin Power & Light Co.	Wisconsin	Gas	Fully Forecast	Average	No	No	No	No		
Ameren Corporation	Ameren Illinois Co.	Illinois	Electric	Historical	Year End	No	Yes	No	Yes		
	Ameren Illinois Co.	Illinois	Gas	Fully Forecast	Average	Partial	No	No	Yes		
	Union Electric Co.	Missouri	Electric	Historical	Year End	Partial	No	No	Yes		
	Union Electric Co.	Missouri	Gas	Historical	Year End	Partial	No	No	Yes		
American Electric Power Company, Inc.	Southwestern Electric Power Co.	Arkansas	Electric	Historical	Year End	Partial	Yes	No	Yes		
	Indiana Michigan Power Co.	Indiana	Electric	Fully Forecast	Year End	Partial	No	No	Yes		
	Kentucky Power Co.	Kentucky	Electric	Fully Forecast	Year End	Partial	No	No	Yes		
	Southwestern Electric Power Co.	Louisiana	Electric	Historical	Year End	Partial	Yes	No	Yes		
	Indiana Michigan Power Co.	Michigan	Electric	Fully Forecast	Average	No	No	No	No		
	Ohio Power Co.	Ohio	Electric	Partially Forecast	Year End	Partial	No	No	Yes		
	Public Service Co. of Oklahoma	Oklahoma	Electric	Historical	Year End	Partial	No	No	Yes		
	Kingsport Power Co.	Tennessee	Electric	Fully Forecast	Average	No	No	No	No		
	AEP Texas	Texas	Electric	Historical	Year End	No	No	No	No		
	Southwestern Electric Power Co.	Texas	Electric	Historical	Year End	No	No	No	No		
	Appalachian Power Co.	Virginia	Electric	Historical	Year End	No	No	No	No		
	Appalachian Power Co./Wheeling Power Co.	West Virginia	Electric	Historical	Average	No	No	No	No		
	Avista Corporation	Alaska Electric Light and Power Co.	Alaska	Electric	Historical	Average	No	No	No	No	
		Avista Corp.	Idaho	Electric	Historical	Year End	Full	No	No	Yes	
Avista Corp.		Idaho	Gas	Historical	Year End	Full	No	No	Yes		
Avista Corp.		Oregon	Gas	Fully Forecast	Year End	Full	No	No	Yes		
Avista Corp.		Washington	Electric	Historical	Average	Partial	No	No	Yes		
Avista Corp.		Washington	Gas	Historical	Average	Partial	No	No	Yes		
Duke Energy Corporation	Duke Energy Florida LLC	Florida	Electric	Fully Forecast	Year End	No	No	No	No		
	Duke Energy Indiana LLC	Indiana	Electric	Historical	Year End	Partial	No	No	Yes		
	Duke Energy Kentucky Inc.	Kentucky	Electric	Fully Forecast	Average	Partial	No	No	Yes		
	Duke Energy Kentucky Inc.	Kentucky	Gas	Fully Forecast	Average	Partial	No	No	Yes		
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	North Carolina	Electric	Historical	Year End	No	No	No	No		
	Piedmont Natural Gas Co. Inc.	North Carolina	Gas	Historical	Year End	Full	No	No	Yes		
	Duke Energy Ohio Inc.	Ohio	Electric	Partially Forecast	Year End	Partial	No	No	Yes		
	Duke Energy Ohio Inc.	Ohio	Gas	Partially Forecast	Year End	No	No	Yes	Yes		
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	South Carolina	Electric	Historical	Year End	No	No	No	No		
	Piedmont Natural Gas Co. Inc.	South Carolina	Gas	Historical	Year End	Partial	No	No	Yes		
	Piedmont Natural Gas Co. Inc.	Tennessee	Gas	Fully Forecast	Average	Partial	No	No	Yes		
Entergy Corporation	Entergy Arkansas LLC	Arkansas	Electric	Fully Forecast	Average	Partial	Yes	No	Yes		
	Entergy New Orleans LLC	Louisiana-NOC	Electric	Partially Forecast	Year End	Partial	Yes	No	Yes		
	Entergy New Orleans LLC	Louisiana-NOC	Gas	Partially Forecast	Year End	No	Yes	No	Yes		
	Entergy Louisiana LLC	Louisiana	Electric	Historical	Average	Partial	Yes	No	Yes		
	Entergy Louisiana LLC	Louisiana	Gas	Historical	Average	Partial	Yes	No	Yes		
	Entergy Mississippi LLC	Mississippi	Electric	Fully Forecast	Average	Partial	Yes	No	Yes		
Eversource, Inc.	Entergy Texas Inc.	Texas	Electric	Historical	Year End	No	No	No	No		
	Eversource Kansas Central Inc	Kansas	Electric	Historical	Year End	Partial	No	No	Yes		
	Eversource Metro Inc.	Kansas	Electric	Historical	Year End	No	No	No	No		
	Eversource Metro Inc	Missouri	Electric	Historical	Year End	Partial	No	No	Yes		
IDACORP, Inc.	Eversource Missouri West Inc.	Missouri	Electric	Historical	Year End	Partial	No	No	Yes		
	Idaho Power Co.	Idaho	Electric	Partially Forecast	Year End	Full	No	No	Yes		
MGE Energy, Inc.	Idaho Power Co.	Oregon	Electric	Partially Forecast	Average	No	No	No	No		
	Madison Gas & Electric Co.	Wisconsin	Electric	Fully Forecast	Average	No	No	No	No		
NextEra Energy, Inc.	Madison Gas & Electric Co.	Wisconsin	Gas	Fully Forecast	Average	No	No	No	No		
	Florida Power & Light Co.	Florida	Electric	Fully Forecast	Average	No	No	No	No		
	Gulf Power Co.	Florida	Electric	Fully Forecast	Average	No	No	No	No		
NorthWestern Corporation	Pivotal Utility Holdings Inc.	Florida	Gas	Fully Forecast	Average	No	No	No	No		
	Lone Star Transmission LLC	Texas	Electric	Historical	Year End	No	No	No	No		
	NorthWestern Corporation	Montana	Electric	Historical	Average	Partial	No	No	Yes		
	NorthWestern Corporation	Montana	Gas	Historical	Average	No	No	No	No		
	NorthWestern Corporation	Nebraska	Gas	Historical	Year End	No	No	No	No		
	NorthWestern Corporation	South Dakota	Electric	Historical	Average	No	No	No	No		
	NorthWestern Corporation	South Dakota	Gas	Historical	Average	No	No	No	No		

[7]

Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	Cost Recovery
ALLETE, Inc.	ALLETE (Minnesota Power)	Minnesota	Electric	Yes
Alliant Energy Corporation	Interstate Power & Light Co.	Iowa	Electric	No
	Interstate Power & Light Co.	Iowa	Gas	No
	Wisconsin Power & Light Co.	Wisconsin	Electric	No
	Wisconsin Power & Light Co.	Wisconsin	Gas	No
Ameren Corporation	Ameren Illinois Co.	Illinois	Electric	No
	Ameren Illinois Co.	Illinois	Gas	Yes
	Union Electric Co.	Missouri	Electric	Yes
	Union Electric Co.	Missouri	Gas	Yes
American Electric Power Company, Inc.	Southwestern Electric Power Co.	Arkansas	Electric	Yes
	Indiana Michigan Power Co.	Indiana	Electric	Yes
	Kentucky Power Co.	Kentucky	Electric	No
	Southwestern Electric Power Co.	Louisiana	Electric	No
	Indiana Michigan Power Co.	Michigan	Electric	No
	Ohio Power Co.	Ohio	Electric	Yes
	Public Service Co. of Oklahoma	Oklahoma	Electric	Yes
	Kingsport Power Co.	Tennessee	Electric	No
	AEP Texas	Texas	Electric	Yes
	Southwestern Electric Power Co.	Texas	Electric	Yes
	Appalachian Power Co.	Virginia	Electric	Yes
	Appalachian Power Co./Wheeling Power Co.	West Virginia	Electric	No
Avista Corporation	Alaska Electric Light and Power Co.	Alaska	Electric	No
	Avista Corp.	Idaho	Electric	No
	Avista Corp.	Idaho	Gas	No
	Avista Corp.	Oregon	Gas	No
	Avista Corp.	Washington	Electric	No
	Avista Corp.	Washington	Gas	No
Duke Energy Corporation	Duke Energy Florida LLC	Florida	Electric	Yes
	Duke Energy Indiana LLC	Indiana	Electric	Yes
	Duke Energy Kentucky Inc.	Kentucky	Electric	No
	Duke Energy Kentucky Inc.	Kentucky	Gas	No
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	North Carolina	Electric	No
	Piedmont Natural Gas Co. Inc.	North Carolina	Gas	Yes
	Duke Energy Ohio Inc.	Ohio	Electric	Yes
	Duke Energy Ohio Inc.	Ohio	Gas	Yes
	Duke Energy Carolinas LLC/Duke Energy Progress LLC	South Carolina	Electric	No
	Piedmont Natural Gas Co. Inc.	South Carolina	Gas	No
	Piedmont Natural Gas Co. Inc.	Tennessee	Gas	Yes
Entergy Corporation	Entergy Arkansas LLC	Arkansas	Electric	Yes
	Entergy New Orleans LLC	Louisiana-NOC	Electric	Yes
	Entergy New Orleans LLC	Louisiana-NOC	Gas	No
	Entergy Louisiana LLC	Louisiana	Electric	Yes
	Entergy Louisiana LLC	Louisiana	Gas	Yes
	Entergy Mississippi LLC	Mississippi	Electric	No
	Entergy Texas Inc.	Texas	Electric	Yes
Evergy, Inc.	Evergy Kansas Central Inc	Kansas	Electric	No
	Evergy Metro Inc.	Kansas	Electric	Yes
	Evergy Metro Inc	Missouri	Electric	Yes
	Evergy Missouri West Inc.	Missouri	Electric	Yes
IDACORP, Inc.	Idaho Power Co.	Idaho	Electric	No
	Idaho Power Co.	Oregon	Electric	No
MGE Energy, Inc.	Madison Gas & Electric Co.	Wisconsin	Electric	No
	Madison Gas & Electric Co.	Wisconsin	Gas	No
NextEra Energy, Inc.	Florida Power & Light Co.	Florida	Electric	Yes
	Gulf Power Co.	Florida	Electric	Yes
	Pivotal Utility Holdings Inc.	Florida	Gas	Yes
	Lone Star Transmission LLC	Texas	Electric	Yes
NorthWestern Corporation	NorthWestern Corporation	Montana	Electric	No
	NorthWestern Corporation	Montana	Gas	No
	NorthWestern Corporation	Nebraska	Gas	No
	NorthWestern Corporation	South Dakota	Electric	No
	NorthWestern Corporation	South Dakota	Gas	No

COMPARISON OF OG AND PROXY GROUP COMPANIES
RISK ASSESSMENT

				[1]	[2]	[3]	[4]	[5]	[6]	
Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	Test Year	Rate Base	Non-Volumetric Rate Design				Capital
						Revenue Decoupling	Formula-based rates	Straight Fixed-Variable Rate Design	Non-Volumetric Rate Design	
ALLETE, Inc.	ALLETE (Minnesota Power)	Minnesota	Electric	Fully Forecast	Average	No	No	No	No	
Otter Tail Corporation	Otter Tail Power Co.	Minnesota	Electric	Fully Forecast	Average	No	No	No	No	
	Otter Tail Power Co.	North Dakota	Electric	Fully Forecast	Average	No	No	No	No	
	Otter Tail Power Co.	South Dakota	Electric	Historical	Average	No	No	No	No	
Portland General Electric Company	Portland General Electric Co.	Oregon	Electric	Fully Forecast	Year End	Partial	No	No	Yes	

COMPARISON OF OG AND PROXY GROUP COMPANIES
RISK ASSESSMENT

[7]

Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	Cost Recovery
ALLETE, Inc.	ALLETE (Minnesota Power)	Minnesota	Electric	Yes
Otter Tail Corporation	Otter Tail Power Co.	Minnesota	Electric	No
	Otter Tail Power Co.	North Dakota	Electric	Yes
	Otter Tail Power Co.	South Dakota	Electric	Yes
Portland General Electric Company	Portland General Electric Co.	Oregon	Electric	Yes

Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	Test Year	Rate Base	Non-Volumetric Rate Design								Capital	
						Revenue Decoupling	Formula-based rates	Straight Fixed-Variable Rate Design		Non-Volumetric Rate Design					
ALLETE, Inc. Southern Company	ALLETE (Minnesota Power)	Minnesota	Electric	Fully Forecast	Average	No	No	No	No				No		
	Alabama Power Co.	Alabama	Electric	Fully Forecast	Average	No	Yes	No	Yes				Yes		
	Georgia Power Co.	Georgia	Electric	Fully Forecast	Average	No	Yes	No	No				Yes		
Xcel Energy Inc.	Atlanta Gas & Light Co.	Georgia	Gas	Fully Forecast	Average	No	Yes	Yes	Yes				Yes		
	Northern Illinois Gas Co.	Illinois	Gas	Fully Forecast	Average	Partial	No	No	No				Yes		
	Mississippi Power Co.	Mississippi	Electric	Fully Forecast	Year End	Partial	Yes	No	No				Yes		
	Chattanooga Gas Co.	Tennessee	Gas	Fully Forecast	Average	Partial	Yes	No	No				Yes		
	Virginia Natural Gas Inc.	Virginia	Gas	Historical	Average	Partial	No	No	No				Yes		
	Public Service Co. of Colorado	Colorado	Electric	Historical	Average	Partial	No	No	No				Yes		
	Public Service Co. of Colorado	Colorado	Gas	Historical	Year End	Partial	No	No	No				Yes		
	Northern States Power Co.-Minnesota	Minnesota	Electric	Fully Forecast	Average	Partial	Yes	No	No				Yes		
	Northern States Power Co.-Minnesota	Minnesota	Gas	Fully Forecast	Average	No	No	No	No				No		
	Southwestern Public Service Co.	New Mexico	Electric	Historical	Year End	No	No	No	No				No		
	Northern States Power Co.-Minnesota	North Dakota	Electric	Fully Forecast	Average	No	No	No	No				No		
	Northern States Power Co.-Minnesota	North Dakota	Gas	Fully Forecast	Average	No	No	Yes	Yes				Yes		
	Northern States Power Co.-Minnesota	South Dakota	Electric	Historical	Average	Partial	No	No	No				Yes		
	Southwestern Public Service Co.	Texas	Electric	Historical	Year End	No	No	No	No				No		
	Northern States Power Co.-Wisconsin	Wisconsin	Electric	Fully Forecast	Average	No	No	No	No				No		
	Northern States Power Co.-Wisconsin	Wisconsin	Gas	Fully Forecast	Average	No	No	No	No				No		
							Revenue Decoupling	Formula-based rates	SFV Rates Design		Non-Volumetric Rate Design				
Proxy Group Average			Fully Forecast	35	Year End	38	Full	5	Yes	15	Yes	3	Yes	47	Yes
			Partially Forecast	7	Average	46	Partial	35	No	69	No	81	No	37	No
			Historical	42			No	44							
			Forecast	50.00%	Year End	45.24%	RDM	47.62%	Yes	17.86%	Yes	3.57%	Yes	55.95%	CCRM
OG&E Energy Corp.	Oklahoma Gas & Electric [8]	Oklahoma	Electric	Historical	Year End	Partial	Proposed	No	No	No	No	No	Yes		

Notes:

[1] Sources: Regulatory Research Associates, effective as of September 30, 2021

[2] Sources: Regulatory Research Associates, effective as of September 30, 2021

[3] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated November 12, 2019. Operating subsidiaries not covered in this report were excluded from this exhibit. NWE Electric MT - Company 2020 Form 10-K.

PSCO Electric CO and SO TN - S&P Global Market Intelligence.

[4] Sources: Company Form 10-K, Company Tariffs, S&P Global Market Intelligence

[5] Sources: Company Form 10-K, Company Tariffs, S&P Global Market Intelligence

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

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

[8] Data provided by Oklahoma Gas & Electric Company.

COMPARISON OF OG AND PROXY GROUP COMPANIES
RISK ASSESSMENT

[7]

Proxy Group Company	Operating Subsidiary	Jurisdiction	Service	Cost Recovery
ALLETE, Inc.	ALLETE (Minnesota Power)	Minnesota	Electric	Yes
Southern Company	Alabama Power Co.	Alabama	Electric	Yes
	Georgia Power Co.	Georgia	Electric	Yes
	Atlanta Gas & Light Co.	Georgia	Gas	Yes
	Northern Illinois Gas Co.	Illinois	Gas	Yes
	Mississippi Power Co.	Mississippi	Electric	No
	Chattanooga Gas Co.	Tennessee	Gas	No
	Virginia Natural Gas Inc.	Virginia	Gas	Yes
Xcel Energy Inc.	Public Service Co. of Colorado	Colorado	Electric	Yes
	Public Service Co. of Colorado	Colorado	Gas	Yes
	Northern States Power Co.-Minnesota	Minnesota	Electric	No
	Northern States Power Co.-Minnesota	Minnesota	Gas	Yes
	Southwestern Public Service Co.	New Mexico	Electric	No
	Northern States Power Co.-Minnesota	North Dakota	Electric	Yes
	Northern States Power Co.-Minnesota	North Dakota	Gas	No
	Northern States Power Co.-Minnesota	South Dakota	Electric	Yes
	Southwestern Public Service Co.	Texas	Electric	Yes
	Northern States Power Co.-Wisconsin	Wisconsin	Electric	No
	Northern States Power Co.-Wisconsin	Wisconsin	Gas	No
				CCRM
Proxy Group Average			Fully Forecast	43
			Partially Forecast	41
			Historical	
			Forecast	51.19%
OG&E Energy Corp.	Oklahoma Gas & Electric [8]	Oklahoma	Electric	Yes

Notes:

[1] Sources: Regulatory Research Associates, effective as of September 30, 2021

[2] Sources: Regulatory Research Associates, effective as of September 30, 2021

[3] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated November 12, 2019. Ope
PSCO Electric CO and SO TN - S&P Global Market Intelligence.

[4] Sources: Company Form 10-K, Company Tariffs, S&P Global Market Intelligence

[5] Sources: Company Form 10-K, Company Tariffs, S&P Global Market Intelligence

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

[7] Sources: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated November 12, 2019. Ope

[8] Data provided by Oklahoma Gas & Electric Company.

**COMPARISON OF OG&E AND PROXY GROUP COMPANIES
RRA JURISDICTIONAL RANKINGS**

		[1]	[2]
		RRA	
		Rank	Numeric Rank
ALLETE, Inc.	Minnesota	Average / 2	5
Alliant Energy Corporation	Iowa	Above Average / 3	3
	Wisconsin	Above Average / 2	2
Ameren Corporation	Illinois	Average / 2	5
	Missouri	Average / 3	6
American Electric Power Company,	Arkansas	Average / 1	4
	Indiana	Average / 1	4
	Kentucky	Average / 1	4
	Louisiana	Average / 2	5
	Michigan	Above Average / 3	3
	Ohio	Average / 3	6
	Oklahoma	Average / 2	5
	Tennessee	Above Average / 3	3
	Texas	Average / 3	6
	Virginia	Average / 1	4
	West Virginia	Below Average / 2	8
Avista Corporation	Alaska	Below Average / 1	7
	Idaho	Average / 2	5
	Oregon	Average / 2	5
	Washington	Average / 3	6
Duke Energy	Florida	Above Average / 2	2
	Indiana	Average / 1	4
	Kentucky	Average / 1	4
	North Carolina	Average / 1	4
	Ohio	Average / 3	6
	South Carolina	Average / 3	6
	Tennessee	Above Average / 3	3
Entergy	Arkansas	Average / 1	4
	Louisiana-NOCC	Average / 3	6
	Louisiana	Average / 2	5
	Mississippi	Above Average / 3	3
	Texas	Average / 3	6
Evergy, Inc.	Kansas	Below Average / 1	7
	Missouri	Average / 3	6
IDACORP, Inc.	Idaho	Average / 2	5
	Oregon	Average / 2	5
MGE Energy, Inc.	Wisconsin	Above Average / 2	2
NextEra Energy, Inc.	Florida	Above Average / 2	2
	Texas	Average / 3	6
NorthWestern Corporation	Montana	Below Average / 1	7
	Nebraska	Average / 1	4
	South Dakota	Average / 2	5
Otter Tail Corporation	Minnesota	Average / 2	5
	North Dakota	Average / 1	4
	South Dakota	Average / 2	5
Portland General Electric Company	Oregon	Average / 2	5
Southern Company	Alabama	Above Average / 1	1
	Georgia	Above Average / 2	2
	Illinois	Average / 2	5
	Mississippi	Above Average / 3	3
	Tennessee	Above Average / 3	3
	Virginia	Average / 1	4
Xcel Energy Inc.	Colorado	Average / 1	4
	Minnesota	Average / 2	5
	North Dakota	Average / 1	4
	New Mexico	Below Average / 2	8
	South Dakota	Average / 2	5
	Texas	Average / 3	6
	Wisconsin	Above Average / 2	2
Proxy Group Average		Average / 1 - Average / 2	4.56
Oklahoma Gas and Electric	Oklahoma	Average / 2	5

Notes

[1] Source: State Regulatory Evaluations, Regulatory Research Associates, as of September 8, 202

[2] AA/1= 1, AA/2= 2, AA/3= 3, A/1= 4, A/2= 5, A/3=6, BA/1= 7, BA/2= 8, BA/3= 9

**COMPARISON OF OG&E AND PROXY GROUP COMPANIES
S&P JURISDICTIONAL RANKINGS**

		[1]	[2]
		S&P	
		Rank	Numeric Rank
ALLETE, Inc.	Minnesota	Highly Credit Supportive	2
Alliant Energy Corporation	Iowa	Most Credit Supportive	1
	Wisconsin	Most Credit Supportive	1
Ameren Corporation	Illinois	Very Credit Supportive	3
	Missouri	Very Credit Supportive	3
American Electric Power Company, Inc.	Arkansas	Highly Credit Supportive	2
	Indiana	Highly Credit Supportive	2
	Kentucky	Most Credit Supportive	1
	Louisiana	Highly Credit Supportive	2
	Michigan	Most Credit Supportive	1
	Ohio	Very Credit Supportive	3
	Oklahoma	More Credit Supportive	4
	Tennessee	Highly Credit Supportive	2
	Texas	Very Credit Supportive	3
	Virginia	Highly Credit Supportive	2
	West Virginia	Very Credit Supportive	3
Avista Corporation	Alaska	More Credit Supportive	4
	Idaho	Very Credit Supportive	3
	Oregon	Highly Credit Supportive	2
	Washington	Very Credit Supportive	3
Duke Energy	Florida	Most Credit Supportive	1
	Indiana	Highly Credit Supportive	2
	Kentucky	Most Credit Supportive	1
	North Carolina	Highly Credit Supportive	2
	Ohio	Very Credit Supportive	3
	South Carolina	More Credit Supportive	4
	Tennessee	Highly Credit Supportive	2
Entergy	Arkansas	Highly Credit Supportive	2
	Louisiana-NOCC	Very Credit Supportive	3
	Louisiana	Highly Credit Supportive	2
	Mississippi	More Credit Supportive	4
	Texas	Very Credit Supportive	3
Eversource Energy, Inc.	Kansas	Highly Credit Supportive	2
	Missouri	Very Credit Supportive	3
IDACORP, Inc.	Idaho	Very Credit Supportive	3
	Oregon	Highly Credit Supportive	2
MGE Energy, Inc.	Wisconsin	Most Credit Supportive	1
NextEra Energy, Inc.	Florida	Most Credit Supportive	1
	Texas	Very Credit Supportive	3
NorthWestern Corporation	Montana	More Credit Supportive	4
	Nebraska	Very Credit Supportive	3
	South Dakota	Very Credit Supportive	3
Otter Tail Corporation	Minnesota	Highly Credit Supportive	2
	North Dakota	Highly Credit Supportive	2
	South Dakota	Very Credit Supportive	3
Portland General Electric Company	Oregon	Highly Credit Supportive	2
Southern Company	Alabama	Most Credit Supportive	1
	Georgia	Highly Credit Supportive	2
	Illinois	Very Credit Supportive	3
	Mississippi	More Credit Supportive	4
	Tennessee	Highly Credit Supportive	2
	Virginia	Highly Credit Supportive	2
Xcel Energy Inc.	Colorado	Very Credit Supportive	3
	Minnesota	Highly Credit Supportive	2
	North Dakota	Highly Credit Supportive	2
	New Mexico	Credit Supportive	5
	South Dakota	Very Credit Supportive	3
	Texas	Very Credit Supportive	3
	Wisconsin	Most Credit Supportive	1
Proxy Group Average		Very credit supportive / Highly credit supportive	2.42
Oklahoma Gas and Electric	Oklahoma	More Credit Supportive	4

COMPARISON OF OG&E AND PROXY GROUP COMPANIES
S&P JURISDICTIONAL RANKINGS

	[1]	[2]
	S&P	
	Rank	Numeric Rank

Notes

[1] Source: Updated Views on North American Utility Regulatory Jurisdictions, Standard and Poor's Ratings Services, June 29, 2021.

[2] Most= 1, Highly= 2, Very= 3, More= 4, Credit Supportive= 5

CAPITAL STRUCTURE ANALYSIS

Proxy Group Company	Ticker	Most Recent 8 Quarters			
		Common Equity Ratio	Long-Term Debt Ratio	Preferred Equity Ratio	Total Capitalization
ALLETE, Inc.	ALE	57.27%	42.73%	0.00%	100.00%
Alliant Energy Corporation	LNT	51.40%	46.90%	1.70%	100.00%
Ameren Corporation	AEE	52.62%	46.58%	0.79%	100.00%
American Electric Power Company, Inc.	AEP	48.06%	51.94%	0.00%	100.00%
Avista Corporation	AVA	51.16%	48.84%	0.00%	100.00%
Duke Energy Corporation	DUK	52.73%	47.27%	0.00%	100.00%
Entergy Corporation	ETR	46.97%	52.92%	0.11%	100.00%
Energy, Inc.	EVRG	59.34%	40.66%	0.00%	100.00%
IDACORP, Inc.	IDA	53.88%	45.84%	0.28%	100.00%
MGE Energy, Inc.	MGEE	60.85%	39.15%	0.00%	100.00%
NextEra Energy, Inc.	NEE	60.56%	39.44%	0.00%	100.00%
NorthWestern Corporation	NWE	47.46%	52.54%	0.00%	100.00%
Otter Tail Corporation	OTTR	53.23%	46.77%	0.00%	100.00%
Portland General Electric Company	POR	48.68%	51.32%	0.00%	100.00%
The Southern Company	SO	54.02%	45.39%	0.59%	100.00%
Xcel Energy Inc.	XEL	54.03%	45.97%	0.00%	100.00%
Average		53.27%	46.52%	0.22%	
Median		52.98%	46.68%	0.00%	
Maximum		60.85%	52.92%	1.70%	
Minimum		46.97%	39.15%	0.00%	

Notes:

[1] Ratios are weighted by actual common capital, preferred capital, and long-term debt of the operating subsidiaries.

[2] Electric operating subsidiaries with data listed as N/A from S&P Capital IQ Pro have been excluded from the analysis.