Direct Testimony and Schedules Ann E. Bulkley

Before the Minnesota Public Utilities Commission

State of Minnesota

In the Matter of the Application of Minnesota Power For Authority to Increase Rates for Electric Utility Service in Minnesota

Docket No. E015/GR-21-335

Exhibit_____

RETURN ON EQUITY

November 1, 2021

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1 I. INTRODUCTION AND QUALIFICATIONS

2 Q. Please state your name and business address.

- A. My name is Ann E. Bulkley. My business address is 293 Boston Post Road West,
 Suite 500, Marlborough, Massachusetts 01752.
- 5 Q. What is your position with Concentric Energy Advisors, Inc. ("Concentric")?
- 6 A. I am employed by Concentric as a Senior Vice President.

7 Q. On whose behalf are you submitting this Direct Testimony?

8 A. I am submitting this Direct Testimony before the Minnesota Public Utilities
9 Commission ("Commission") on behalf of ALLETE, Inc. ("ALLETE"), d/b/a
10 Minnesota Power ("Minnesota Power" or the "Company").

11 Q. Please describe your education and experience.

12 I hold a Bachelor's degree in Economics and Finance from Simmons College and A. 13 a Master's degree in Economics from Boston University, with approximately 14 30 years of experience consulting to the energy industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with 15 16 primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and 17 18 ratemaking purposes. I have included my resume and a summary of testimony that 19 I have filed in other proceedings as Attachment A to this testimony.

1 **Q.**

Please describe Concentric's activities in energy and utility engagements.

2 A. Concentric provides financial and economic advisory services to many and various 3 energy and utility clients across North America. Our regulatory, economic, and 4 market analysis services include utility ratemaking and regulatory advisory 5 services; energy market assessments; market entry and exit analysis; corporate and 6 business unit strategy development; demand forecasting; resource planning; and 7 energy contract negotiations. Our financial advisory activities include buy and sellside merger, acquisition, and divestiture assignments; due diligence and valuation 8 9 assignments; project and corporate finance services; and transaction support services. In addition, we provide litigation support services on a wide range of 10 financial and economic issues on behalf of clients throughout North America. 11

12 Q. Have you testified before any regulatory authorities?

A. Yes. A list of proceedings in which I have provided testimony is provided inAttachment A to this testimony.

15 II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY

- 16 Q. What is the purpose of your Direct Testimony?
- A. The purpose of my Direct Testimony is to present evidence and provide a
 recommendation regarding the appropriate Return on Equity ("ROE")¹ in this
 proceeding and to provide an assessment of the capital structure to be used for
 ratemaking purposes. My analyses and recommendations are supported by the data

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Throughout my Direct Testimony, I interchangeably use the terms "ROE" and "cost of equity."

presented in Exhibit___(Bulkley), Schedules 1 through 13, which were prepared by
 me or under my direction.

3 Q. Please provide a brief overview of the analyses that led to your ROE 4 recommendation.

5 A. As discussed in more detail in Section VIII, I applied the Constant Growth and 6 Two-Growth forms of the Discounted Cash Flow ("DCF") model, the Capital Asset 7 Pricing Model ("CAPM"), the Empirical CAPM ("ECAPM"), and the Risk 8 Premium Approach. My recommendation also takes into consideration: (1) current 9 capital market conditions; (2) customer concentration; (3) the regulatory 10 environment in which the Company operates; (4) the Company's adjustment 11 mechanisms; and (5) the Company's rate design. While I did not make specific adjustments to my ROE estimates for any of these factors, I did take them into 12 13 consideration in aggregate when determining where the Company's ROE falls 14 within the range of analytical results. Finally, I considered the Company's 15 proposed capital structure as compared to the capital structures of the proxy companies.² 16

17 Q. How is the remainder of your Direct Testimony organized?

A. Section III provides a summary of my analyses and conclusions. Section IV
 reviews the regulatory guidelines pertinent to the development of the cost of capital.
 Section V discusses current and projected capital market conditions and the effect
 of those conditions on Minnesota Power's cost of equity in Minnesota. Section VI

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

explains my selection of a proxy group of electric utilities. Section VII provides a
discussion of specific regulatory, business, and financial risks that have a direct
bearing on the ROE to be authorized for Minnesota Power in this case. Section
VIII describes my analyses and the analytical basis for the recommendation of the
appropriate ROE for Minnesota Power. Section IX assesses the Company's
proposed capital structure as compared to the proxy group. Section X presents my
conclusions and recommendations for the market cost of equity.

8 III. SUMMARY OF ANALYSIS AND CONCLUSIONS

9 Q. Please summarize the key factors considered in your analyses and upon which 10 you base your recommended ROE.

- 11 A. In developing my recommended ROE for Minnesota Power, I considered the12 following:
- The *Hope* and *Bluefield* decisions³ that established the standards for
 determining a fair and reasonable allowed ROE, including consistency of
 the allowed return with the returns of other businesses having similar risk,
 adequacy of the return to provide access to capital and support credit
 quality, and the requirement that the result lead to just and reasonable rates.
- 18 The effect of current and projected capital market conditions on investors'
 19 return requirements.
- The approaches relied upon by the Commission in establishing allowed
 ROE, which historically was largely based on the mean result of the Two Growth DCF analysis using a proxy group of comparable companies.⁴

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).
 Dealert No. C008/CR 15, 424 Findings of Feat. Conclusions and Order at 42

Docket No. G008/GR-15-424, Findings of Fact, Conclusions and Order, at 43.

1		However, in its most recent Orders, the Commission has recognized the
2		short-coming of such a mathematical approach and strict reliance on a single
3		methodology. Instead, the Commission has considered additional factors
4		and analyses. ⁵
5		• The results of several analytical approaches that provide estimates of the
6		Company's cost of equity.
7		• The Company's regulatory, business, and financial risks relative to the
8		proxy group of comparable companies and the implications of those risks.
9	Q.	Please explain how you considered those factors.
10	A.	After considering these factors and the results of my analyses, I relied on the range
11		of results produced by the Constant Growth and Two-Growth forms of the DCF
12		model, the CAPM, ECAPM, and Risk Premium analyses. As shown in Figure 1,
13		these ROE estimation models produce a wide range of results. My conclusion as
14		to where Minnesota Power's ROE falls within that range of results is based on my
15		assessment of market conditions and the Company's business and financial risks
16		relative to the proxy group. I considered the Company's business and financial risk
17		in the aggregate in comparison to that of the proxy group companies when
18		determining where the Company's ROE falls within the reasonable range of
19		analytical results to account for any residual differences in risk. As will be
20		discussed in greater detail in Section VII below Minnesota Power has greater
		and and a second a second with below, with the second has greater

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Otter Tail Power Company ("Otter Tail") in Docket No. E017/GR-15-1033, Minnesota Power in Docket No. E015/GR-16-664, Minnesota Energy Resources Corporation ("MERC") in Docket No. G011/GR-17-563, and Great Plains in Docket No. G004/GR-19-511.

business risk than the proxy group as a result of the Company's high level of
 customer concentration risk which is reflected in the recommended range and ROE.

Q. Please summarize the results of the ROE estimation models that you considered to establish the range of ROEs for Minnesota Power.

5 A. Figure 1 summarizes the range of results produced by my analyses.



⁶ The analytical results reflect the results of the Constant Growth and Two-Growth DCF analyses excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent.

results varies considerably across methodologies. As a result, my ROE
 recommendation considers the range of results of the Constant Growth and Two Growth DCF models, as well as the results of the CAPM, ECAPM, and Bond Yield
 Plus Risk Premium analyses. My ROE recommendation also considers Minnesota
 Power's company-specific risk factors and current and prospective capital market
 conditions.

7

Q. Please highlight the Company-specific risk factors you considered.

8 In addition to the analytical results presented in Figure 1, I also considered the level A. 9 of regulatory, business, and financial risk faced by Minnesota Power's electric 10 operations in Minnesota relative to the proxy group to establish the range of 11 reasonable returns. As I will discuss in more detail in Section VII below, I 12 specifically considered Minnesota Power's high degree of customer concentration 13 as approximately 72 percent of the Company's 2020 total retail kilowatt-hour 14 ("kWh") electric sales were derived from industrial customers. Minnesota Powers' 15 industrial customers engage in highly cyclical industries such as taconite mining 16 and processing and paper manufacturing. This poses a significant risk to the 17 Company as changes in economic conditions could result in significant variations 18 in the Company's sales. While the Company has proposed a sales true-up 19 mechanism, as I will discuss in more detail below, the sales true-up mechanism will 20 only somewhat reduce the risk associated with serving these cyclical customers, 21 and therefore does not eliminate the risk associated with the Company's high 22 degree of customer concentration. The inclusion of a sales forecast true-up for large 23 power customers does not fully mitigate Minnesota Power's risk as compared to

1 the mean results of the proxy group, because the companies in the proxy group rely 2 on more diverse customer bases and a majority have similar mechanisms that 3 mitigate volumetric risk. Additionally, Minnesota Power's proposed mechanism is only triggered at a loss of sales of \$10 million or more and does not reset the ROE. 4 5 Thus, even with a sales forecast true-up, the proxy group comparison supports a 6 recommendation towards the high-end of the range of results. However, if the Commission were not to approve the Company's proposed sales true-up 7 8 mechanism, Minnesota Power's risk relative to the proxy group would be 9 significantly increased and would support an ROE at the very high-end of the range of results. 10

11 Q. What is your recommended ROE for Minnesota Power?

12 A. Considering the analytical results presented in Figure 1, as well as the level of 13 regulatory, business, and financial risk faced by Minnesota Power relative to the 14 proxy group, I believe a range from 9.90 to 10.50 percent is reasonable. The 15 Company is requesting a return of 10.25 percent, which reflects the relative risk of 16 Minnesota Power's electric operations in Minnesota as compared to the proxy 17 group, and current capital market conditions and is a reasonable estimate of the 18 invested-required ROE for Minnesota Power. However, it is important to note that 19 the Company's risk profile is significantly increased relative to the proxy group 20 without the sales-forecast true-up mechanism and would warrant an ROE at the 21 high-end of my recommended ROE range of 9.90 to 10.50 percent if that 22 mechanism is not implemented.

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Q.

Is the approach you employed for determining the Company's ROE consistent with the approach used by the Commission in prior cases?

A. Yes, it is. As discussed above, I developed a full range of ROE estimation models,
including the Two-Growth DCF model and Constant Growth DCF model. I also
relied on the results of other analytical approaches such as the CAPM, and Risk
Premium. Finally, I considered the Company's business and financial risk relative
to the proxy group in my conclusion as to where the Company's ROE falls.⁷ The
Company selected an ROE of 10.25 percent which, based on these analyses, is
reasonable.

Q. Please summarize the analysis you conducted in determining that Minnesota Power's requested capital structure is reasonable and appropriate.

12 A. Based on the analysis presented in Section IX of my testimony, I conclude that 13 Minnesota Power's proposed 53.81 percent common equity is reasonable. To 14 determine if Minnesota Power's requested capital structure was reasonable, I 15 reviewed the capital structures of the utility subsidiaries of the proxy companies. 16 As shown in Exhibit (Bulkley), Direct Schedule 13, the results of that analysis 17 demonstrate that the average equity ratios for the utility operating companies of the 18 proxy group range from 46.90 percent to 59.79 percent with an average of 52.05 19 percent. The Company's requested equity ratio is within the range established by 20 the proxy group companies. Further, credit rating agencies have noted that the Tax 21 Cuts and Jobs Act of 2017 ("TCJA") and COVID-19 have had a negative effect on

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Docket No. E017/GR-15-1033, Findings of Fact, Conclusions and Order, at 55. Docket No. G011/GR-17-563, Findings of Fact, Conclusions and Order, at 26.

the cash flows and credit metrics of regulated utilities across the board and have
recommended increases in equity ratios to mitigate these negative effects.

3 IV. REGULATORY GUIDELINES

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

13 Q. Has the Commission provided similar guidance in establishing the appropriate

14 return on common equity?

- 15 A. Yes, it has. In its most recent fully litigated order in Docket No. G004/GR-19-511
- 16 for Great Plains, the Commission cited Minnesota Statute Section 216B.16, subd.
- 17 6, which states that:
- 18 [i]n determining just and reasonable rates, the Commission is required to:
- 19Give due consideration to the public need for adequate,20efficient, and reasonable service and to the need of the public21utility for revenue sufficient to enable it to meet the cost of22furnishing service, including adequate provision for

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

upon the investment in such property.⁹ 3 Additionally, the Commission stated that it "must set rates at a level that permits 4 5 stockholders an opportunity to earn a fair and reasonable return on their investment and permits the utility to continue to attract investment."¹⁰ This guidance is in 6 accordance with the Hope and Bluefield decisions and the principles that I 7 employed to estimate the ROE for the Company, including the principle that an 8 9 allowed rate of return must be sufficient to enable regulated companies, like 10 Minnesota Power, to attract capital on reasonable terms.

depreciation of its utility property used and useful in rendering service to the public, and to earn a fair and reasonable return

11 0. Why is it important for a utility to be allowed the opportunity to earn an ROE 12 that is adequate to attract capital at reasonable terms?

13 A. An ROE that is adequate to attract capital at reasonable terms enables the Company 14 to continue to provide safe, reliable electric service while maintaining its financial 15 integrity. Access to capital at reasonable terms is of particular importance in the current market environment as electric utilities are required to make transformative 16 17 investments in their systems to meet growing demands for a more sustainable 18 power supply. To the extent the Company is provided the opportunity to earn its 19 market-based cost of capital, neither customers nor shareholders are disadvantaged.

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Docket No. G004/GR-19-511, Findings of Fact, Conclusions and Order, at 14. Ibid.

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

3 Yes. Minnesota Power competes directly for capital with other investments of A. 4 similar risk, which include natural gas utilities and other electric utilities. Therefore, 5 the ROE awarded to a utility sends an important signal to investors regarding whether there is regulatory support for financial integrity, dividends, growth, and 6 7 fair compensation for business and financial risk. The cost of capital represents an opportunity cost to investors. If higher returns are available for other investments 8 9 of comparable risk, investors have an incentive to direct their capital to those 10 investments. Thus, an authorized ROE significantly below authorized ROEs for 11 natural gas utilities and other electric utilities can inhibit the Company's ability to 12 attract capital for investment in Minnesota.

13 Q. Has the Commission also considered the authorized ROEs in other 14 jurisdictions?

A. Yes. In its Order in Docket No. E-001/GR-10-276 for Interstate Power and Light
Company, the Commission noted a previous Order where it explained the
following:

18While the probative value of ROEs set in other jurisdictions is19limited because the record does not allow the Commission to20assess the differing regulatory circumstances affecting those21awards, they do provide some window to national context and,22as such, can serve a limited function as a check on23reasonableness.¹¹

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Docket No. E001/GR-10-276, Findings of Fact, Conclusions and Order, at 11.

1 Therefore, the Commission has considered the returns that have been authorized 2 nationally as well the returns that have been authorized for other subsidiaries of the 3 subject company's parent company in other jurisdictions. This should also be an 4 important consideration for the Commission in the current case.

5

Q.

What are your conclusions regarding regulatory guidelines?

A. The ratemaking process is premised on the principle that, for investors and
companies to commit the capital needed to provide safe and reliable utility services,
a utility must have the opportunity to recover the return of, and the market-required
return on, its invested capital. Because utility operations are capital-intensive,
regulatory decisions should enable the utility to attract capital at reasonable terms
under a variety of economic and financial market conditions; doing so balances the
long-term interests of the utility and its ratepayers.

13 The financial community carefully monitors the current and expected financial 14 condition of utility companies, and the regulatory framework in which they operate. 15 In that respect, the regulatory framework is one of the most important factors in 16 both debt and equity investors' assessments of risk. The Commission's order in 17 this proceeding, therefore, should establish rates that provide the Company with the 18 opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable 19 terms under a variety of economic and financial market conditions; (2) sufficient to 20 ensure good financial management and firm integrity; and (3) commensurate with 21 returns on investments in enterprises with similar risk. Reliance on the results of 22 multiple analytical approaches to calculating a company's cost of equity and 23 considering the Company's business and financial risk as compared to the proxy

1 group of companies in establishing the Company's ROE within the range of 2 reasonable results as the Commission has in the recent past will support these 3 objectives. To the extent Minnesota Power is authorized the opportunity to earn its 4 market-based cost of capital, the proper balance is achieved between customers' 5 and shareholders' interests.

6 V. CAPITAL MARKET CONDITIONS

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

8 A. The ROE estimation models rely on market data that are either specific to the proxy 9 group, in the case of the DCF model, or to the expectations of market risk, in the 10 case of the CAPM. The results of the ROE estimation models can be affected by 11 prevailing market conditions at the time the analysis is performed. While the ROE 12 that is established in a rate proceeding is intended to be forward-looking, the analyst 13 uses current and projected market data, specifically stock prices, dividends, growth 14 rates and interest rates in the ROE estimation models to estimate the required return 15 for the subject company.

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As discussed in the remainder of this section, analysts and regulatory commissions have concluded that current market conditions have affected the results of the ROE estimation models. As a result, it is important to consider the effect of these conditions on the ROE estimation models when determining the appropriate range and recommended ROE for a future period. If investors do not expect current market conditions to be sustained in the future, it is possible that the ROE estimation models will not provide an accurate estimate of investors' required

> Docket No. E015/GR-21-335 Bulkley Direct and Schedules

- return during that rate period. Therefore, it is very important to consider projected
 market data to estimate the return for that forward-looking period.
- 3 Q. What factors are affecting the cost of equity for regulated utilities in the
 4 current and prospective capital markets?
- 5 A. The cost of equity for regulated utility companies is being affected by several 6 factors in the current and prospective capital markets, including: (1) the dramatic 7 shifts in market conditions during 2020, the economic recovery in 2021 and the 8 expectations for 2022, and the effect of these changes on the assumptions used in 9 the ROE estimation models; and (2) effects of Federal tax reform on utility cash 10 flows. In this section, I discuss each of these factors and how it affects the models 11 used to estimate the cost of equity for regulated utilities.

12 A. Economic Recovery and Performance of the Utility Sector

Q. Do recent economic projections indicate the expectation for a strong economic recovery in 2021?

A. Yes. The Federal Open Market Committee ("FOMC") is composed of 12 members
including the Board of Governors of the Federal Reserve system and presidents of
the Federal Reserve Banks. The FOMC reviews economic and financial conditions,
determines the appropriate stance for monetary policy, and assesses the risks to its
long-run goals of price stability and economic growth. The FOMC issued its
Summary of Economic Projections in September 2021, where the FOMC's median
projection for gross domestic product ("GDP") growth from Q4 2020 to Q4 2021

1	is 5.9 percent. ¹² The Congressional Budget Office ("CBO") issued an update to its
2	outlook on economic conditions on July 1, 2021. In that report, the CBO projected
3	strong GDP growth for 2021 and significant strength in overall economic
4	conditions:
5	• Real GDP growth of 7.4 percent, which is a significant change from the
6	negative 2.4 percent growth rate in 2020.
7	• Inflation indicators at or above the 2.0 percent threshold in 2021 and
8	continuing through 2031.
9	• Labor force expected to be restored to pre-pandemic levels in 2022.
10	• Interest rates on federal borrowing increasing through 2031. ¹³
11 12	Finally, Bloomberg recently noted that according to its latest monthly survey of 75
13	economists, projected GDP growth of 6.6 percent is expected for 2021 and inflation
14	is expected to increase 3.6 percent in the second half of 2021 on a year over year
15	("YOY") basis which is well above the Federal Reserve's goal of 2.0 percent. ¹⁴
16	According to Former Treasury Secretary Lawrence Summers, the increase in
17	inflation will likely cause interest rates to also increase for the remainder of 2021. ¹⁵
18	U.S. bond yields have already rebounded considerably in the past year, with 30-
19	year Treasury bond yields up 65 basis points between April 1, 2020 and August 31,
20	2021, with further rebounding expected throughout the year. These trends indicate

¹² Federal Open Market Committee, Summary of Economic Projections, September 22, 2021, at 2; Federal Open Market Committee, Summary of Economic Projections, March 17, 2021, at 2.

¹³ Congressional Budget Office, An Update to the Budget and Economic Outlook 2021 to 2031, July 2021.

¹⁴ Pickert, Reade, and Kyungjin Yoo. "Economists Lift U.S. Growth Forecasts Even as Pace Set to Cool." *Bloomberg.com*, Bloomberg, 9 July 2021, www.bloomberg.com/news/articles/2021-07-09/economists-lift-u-s-growth-forecasts-even-as-pace-set-to-cool.

¹⁵ Kennedy, Simon. "Summers Sees U.S. Inflation Ending 2021 'Pretty Close' to 5%." *Bloomberg.com*, Bloomberg, 25 June 2021, www.bloomberg.com/news/articles/2021-06-25/summers-sees-u-s-inflation-ending-2021-pretty-close-to-5.

strong economic recovery over the next year, with robust consumer spending
 expected.

3 Q. Please summarize the recent monetary policy of the Federal Reserve.

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

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

Q. Are there indications the Federal Reserve will be winding down some of the
 accommodative policy tools that were used to support the economy during
 COVID-19?

4 A. Yes. On June 2, 2021, the Federal Reserve announced that it plans to start selling 5 the corporate bonds and exchange-traded funds ("ETF") that it purchased to support the corporate bond market during the COVID-19 pandemic.¹⁶ The process will be 6 7 gradual, but the Federal Reserve expects to complete the sale of its corporate bond holdings by the end of 2021. This decision by the Federal Reserve is one of the 8 9 first steps in the Federal Reserve's process of normalizing monetary policy. 10 Furthermore, at the September 22, 2021 meeting, the Federal Reserve noted that if the economy continues to improve, it plans to begin reducing asset purchases of 11 both Treasuries and mortgage-backed securities.¹⁷ Chairman Powell indicated that 12 13 if the recovery continues, the Federal Reserve believes that the gradual process of tapering asset purchases should conclude by the middle of 2022.¹⁸ Finally, half of 14 15 the 18 members of the Federal Reserves' FOMC forecasted one increase in the 16 federal funds rate by the end of 2022 with a median federal funds rate projection of 1.0 percent by 2023 (i.e., three to four increases in the federal funds rate).¹⁹ 17

¹⁶ Scaggs, Alexandra. "The Federal Reserve Is Going to Sell Its Corporate Bond Portfolio. What It Means." The Federal Reserve Will Sell Its Corporate Bond Portfolio. What It Means., Barrons, 3 June 2021, www.barrons.com/articles/federal-reserve-corporate-bond-portfolio-51622679701.
 ¹⁷ Federal Reserve, Press Release, September 22, 2021.

¹⁸ Federal Reserve, Transcript of Chair Powell's Press Conference, September 22, 2021, at 3.

¹⁹ Federal Reserve, Summary of Economic Projections, September 22, 2021.

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Q. What effect, if any, will the Federal Reserve's accommodative monetary policy have on long-term interest rates over the near-term?

3 A. The Federal Reserve has acknowledged that they will keep the federal funds rate 4 near zero for at least the next year with, as noted above, the possibility of a rate 5 increase at the end of 2022. The goal of the accommodative monetary policy is to 6 achieve the Federal Reserve's dual mandate of maximum employment and stable 7 prices. However, while the current accommodative monetary policy will keep short-term interest rates low for at least the next year, it does not have a direct effect 8 9 on long-term interest rates. Long-term interest rates can increase even though 10 monetary policy is accommodative. In fact, one of the leading indicators used by investors to determine what stage of the business cycle the economy is in is to 11 12 review the yield curve which shows the difference between long-term and short-13 term interest rates. A flat or inverted yield curve is when long-term interest rates 14 are equivalent to or less than short-term interest rates and usually occurs prior to a 15 recession. Conversely, a steepening yield curve is when the difference between 16 long-term interest rates and short-term interest rates is increasing and indicates that 17 the economy is entering a period of economic expansion and inflation following a recession.²⁰ 18

[&]quot;What is a yield curve", Fidelity.com. <u>https://www.fidelity.com/learning-center/investment-products/fixed-income-bonds/bond-yield-curve</u>

Q. Have you reviewed the yield curve to determine investors' expectations
 regarding the economy over the near term?

3 Yes, I have. I reviewed the yield curve, calculated as the difference between the A. 4 yield on the 10-year Treasury Bond and the yield on the 2-year Treasury Bond from 5 January 2015 through August 2021. I selected the 10-year Treasury Bond yield to 6 represent long-term interest rates and the yield on the 2-year Treasury Bond to 7 represent short-term interest rates. As shown in Figure 2, the yield curve has been steepening, with the spread increasing to approximately 160 basis points in 8 9 April 2021, which is a level not seen since the middle of 2015. While the spread 10 decreased to 110 basis points in August 2021, the decrease is seen as transitory resulting from a recent increase in COVID-19 cases that could affect economic 11 12 growth in the short-term. However, over the near and long-term, long-term interest 13 rates are still expected to continue to increase and thus the yield curve will continue to steepen.²¹ The steepening of the yield curve indicates that investors expect 14 15 economic growth and inflation to increase in the near-term, and as a result they are 16 rotating out of long-term government bonds to avoid being locked into to low 17 interest rates for the long-term. The steep yield curve signals that higher yields are 18 required by investors to invest in long-term government bonds. It is important to 19 note that the yield spread as of November 1, 2019, the date of my Direct Testimony 20 on behalf of Minnesota Power in its last rate case (Docket No. E015/GR-19-442 or

²¹ See Landsman, Stephanie. "Inflation Breakout Will Drive 10-Year Treasury Yields above 2% in Coming Months, Wells Fargo Predicts." CNBC. CNBC, 18 June 2021. www.cnbc.com/2021/06/18/inflation-breakout-will-soon-drive-10-year-yields-above-2percentwells-fargo.html and Domm, Patti. "The Mystifying Bond Market Behavior Could Last All Summer." CNBC, CNBC, 17 July 2021, www.cnbc.com/2021/07/16/the-mystifying-bond-marketbehavior-could-last-all-summer.html.

"2019 Rate Case"), was only 17 basis points, indicating the expectations for greater inflation in the current economic conditions, as compared to that seen in capital markets at the time I filed my testimony in the 2019 Rate Case.

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Figure 2:	10-year Treasury Bond Yield Minus 2-year Treasury Bond Yield -
	January 2015 – August 2021 ²²



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Q. Has inflation increased as predicted by the steepening of the yield curve?

9 A. Yes, it has. As shown in Figure 3, the YOY change in the Consumer Price Index
10 ("CPI") published by the Bureau of Labor statistics has increased steadily in 2021
11 rising from 1.37 percent in January to 5.20 percent in August. The 5.20 percent
12 YOY change in the CPI in August 2021 is significantly greater than any level seen
13 since January 2015. Therefore, inflation has increased as predicted by the steeping
14 of the yield curve. If inflation continues to increase as expected, then long-term

²² Federal Reserve Bank of St. Louis, 10-Year Treasury Constant Maturity Minus 2-Year Treasury Constant Maturity [T10Y2Y], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/T10Y2Y, August 31, 2021.

- interest rates will also increase as investors require higher yields to compensate for
- 2 the increased risk of inflation.

1



Figure 3: Consumer Price Index – Year over Year Percent Change – January 2015
 August 2021²³

14"It may seem bold to stick with a forecast that's 65 basis points15above current levels, but frankly we think this is one of the

Source: Bureau of Labor Statistics, shaded area indicates the COVID-19 pandemic recession.
 Bahceli, Yoruk, and Sujata Rao. "Analysis: Ten-Year Treasuries at 2%? Bring It on, Investors Say." Reuters, Thomson Reuters, 28 July 2021, www.reuters.com/business/finance/ten-year-treasuries-2-bring-it-investors-say-2021-07-27/.

1 2		places where markets have moved substantially away from equilibrium," Korapaty said. ²⁵
3		Similarly, Bank of America noted:
4 5 6 7		"We haven't seen evidence that the fundamental (economic) backdrop we expect has materially changed," said BofA's U.S. rates strategist, Mark Cabana, also sticking with a 1.9% forecast for Treasury yields. ²⁶
8 9		In terms of equity recommendations considering the expected increase in long-term
10		government bond yields, Federated Hermes prefers cyclical industries such as
11		financials and industrials. When cyclical stocks are favored, historically the utility
12		sector underperforms.
13 14 15 16 17		"We like financials and industrials and materials and small cap and yes, international stocks in that environment," he said. "But I think the overall equity index will have every ability to move higher in that pro-cyclical, higher inflationary environment just like it did last September through April". ²⁷
18	Q.	Have equity analysts specifically commented on the performance of the utility
19		sector over the near-term?
20	A.	Yes. Fidelity recently recommended underweighting the utility sector and ranked
21		the utility sector towards the very low-end of its relative strength rankings which
22		measures each sectors performance relative to the broader market. ²⁸

²⁵ *Ibid.*

²⁶ Ibid.

²⁷ Gurdus, Lizzy. "Citi Calls for 10-Year at 2%. Here Are Ways to Play a High-Rate Environment." CNBC, CNBC, 5 Aug. 2021, www.cnbc.com/2021/08/05/citi-calls-for-10-year-at-2percent-hereare-ways-to-play-a-high-rate-environment.html.

²⁸ Fidelity, "Q3 2021 sector scorecard: Real estate, energy, and tech led in Q2 as the recovery gathered steam," July 28, 2021.

2		Similarly, in its 2021 Midyear Outlook, Well Fargo classified the utility sector as
3		"most unfavorable" as economic growth continues to rebound. ²⁹
4		Finally, Charles Schwab has classified the utilities sector overall as
5		"Underperform," noting that:
6 7 8 9 10 11 12 13 14		The Utilities sector has tended to perform relatively better when concerns about slowing economic growth resurface, and to underperform when those worries fade. That's partly because of the sector's traditional defensive nature and steady revenues—people need water, gas and electric services during all phases of the business cycle. Meanwhile, the low interest rates that typically come with a weak economy provide cheap funding for the large capital expenditures required in this industry.
15 16 17 18 19 20 21 22		However, while interest rates are low from a historical perspective, they have ramped higher as the economy continues to expand and stimulus is raising inflation expectations. On the flip side, there is the potential for a renewed decline in the economy to push rates even lower, or there could be significant government funding to Utilities as part of clean-energy initiatives that would benefit the sector's profit outlook. ³⁰
23 24	Q.	How has the utility sector performed historically during periods where the
25		yield curve is steepening, and the economy is in the early stage of the business
26		cycle?
27	A.	In a recent report, Fidelity noted that the utility sector has historically been one of
28		the worst performing sectors during the early phase of the business cycle with a

²⁹

Well Fargo Investment Institute, 2021 Midyear Outlook, June 2021. Charles Schwab, "Schwab Sector Insights: A view on 11 Equity Sectors," August 19, 2021. 30

1	geometric average return of -10.5 percent. ³¹ This conclusion is further supported
2	by studies conducted by both Goldman Sachs and Deutsche Bank that examined
3	the sensitivity of share prices of different industries to changes in interest rates over
4	the past five years. Both Goldman Sachs and Deutsche Bank found that utilities
5	had one of the strongest negative relationships with bond yields (i.e., increases in
6	bond yields resulted in the decline of utility share prices). ³² This is important
7	because if the utility sector underperforms over the near term, and prices of utility
8	stocks decline, then the DCF model, which relies on historical averages of share
9	prices, is likely to understate the cost of equity for the Company over the near term
10	or the period that Company's rates will be in effect.

11 Q. Why do utilities historically underperform in the early stage of the business
12 cycle?

The utility sector is generally considered a defensive sector and are therefore 13 A. 14 affected less by changes in the business cycle relative to other market sectors since 15 consumers need energy during all phases of the business cycle. Therefore, utilities 16 tend to perform well during periods of uncertainty where the prospect of slowing 17 economic growth increases. As Fidelity noted, historically utilities outperform the market in latter and recession phases of the business cycle.³³ 18 However, it is 19 important to note that not all utilities are less affected by downturns in the business

³¹ Fidelity Investments, "The Business Cycle Approach to Equity Sector Investing," 2020.

³² 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-thetreasury-threat-to-big-tech-stocks.

³³ Fidelity Investments, "The Business Cycle Approach to Equity Sector Investing," 2020.

cycle particularly if a large portion of a utility's sales are to large industrial
 customers that operate in cyclical industries.

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

A. The utility sector's valuations remain above the long-term historical average. As
shown in Figure 4, the price-to-earnings ("P/E") ratio of the proxy group is
currently approximately 20.85, or above the long-term average of the proxy group
over this period of approximately 16.52. It is not reasonable to expect the proxy
group utilities to maintain P/E ratios that are above long-term averages over the
long term.



12

Figure 4: P/E Ratios of the Proxy Group Relative to the Long-Term Average, January 2000 – August 2021³⁴



³⁴ Bloomberg Professional.

1 Q. What is the effect of expected market conditions on the DCF model?

A. If the utility sector underperforms over the near term as expected, and prices of
utility stocks decline, then the DCF model, which relies on historical averages of
share prices, is likely to understate the cost of equity. For example, Figure 5 below
summarizes the effect of a decline in share price on the dividend yield and thus the
cost of equity estimate of the Constant Growth DCF model.

Figure 5: The Effect of a decline in Stock Prices on the Constant Growth DCF
 model



9 10 A decline in stock prices will increase the dividend yields and thus the estimate of 11 the ROE produced by the Constant Growth DCF model. Therefore, this expected 12 change in market conditions supports consideration of the range of ROE results 13 produced by the mean to mean-high DCF results since the mean DCF results would 14 likely understate the cost of equity during the period that the Company's rates will 15 be in effect. Moreover, prospective market conditions warrant consideration of 16 other ROE estimation models such as the CAPM, ECAPM and Risk Premium, 17 which may better reflect expected market conditions. For example, two out of three 18 inputs to the CAPM (i.e., the market risk premium and risk-free rate) are forward-19 looking.

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

2 3

Q.

Should the effect of tax reform be considered in determining the current cost

- of equity for the Company?
- 4 A. Yes. The credit rating agencies have commented on the adverse effect of the TCJA on the cash flows of regulated utilities.³⁵ Specifically, the TCJA has reduced utility 5 6 revenues due to lower federal income taxes in the revenue requirement, the end of bonus depreciation, and the requirement to return "unprotected" excess 7 accumulated deferred income taxes ("ADIT"). This change in revenue reduced 8 9 funds from operations metrics across the sector, and absent regulatory mitigation 10 strategies, has led to weaker credit metrics and negative ratings actions for some utilities.³⁶ 11

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

13 The TCJA reduced utilities' financial flexibility through the loss of bonus A. depreciation and the return of excess ADIT. In 2018 when the TCJA was passed, 14 15 credit rating agencies initially revised the outlook on utilities.

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

17 A. Yes. The TCJA resulted in a permanent change in the cash flow metrics of utilities. 18 Credit rating agencies have recognized this change in metrics and have proposed that increasing ROEs and the use of thicker equity layers can improve credit 19 20 metrics. Since 2018, Moody's has downgraded the credit ratings of more than 30

³⁵ 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. 36 Ibid.

utilities related in part to the TCJA beginning in June 2018 and continuing into
 2021.

3 Q. Was the Company downgraded for reasons that included the effect of tax 4 reform on the cash flows of Minnesota Power?

- 5 A. Yes. ALLETE was downgraded in March of 2019. Moody's downgrade of 6 ALLETE was due mainly to the financial impact of the decision in Minnesota 7 Power's last fully litigated rate case and in part to the cash flow effects of the 8 passage of the TCJA in December 2017.³⁷
- 9 Q. Have state regulatory commissions recognized that the TCJA has had an
 10 adverse impact on utility cash flows?
- 11 A. Yes. The Oregon Public Utilities Commission,³⁸ the Wyoming Public Service
- 12 Commission³⁹ and the Utah Public Service Commission⁴⁰ have acknowledged the
- 13 negative effect of the TCJA on the cash flow of utilities.
- 14 Further, in a December 2019 order for Georgia Power Company, the Georgia Public
- 15 Service Commission found it appropriate to authorize a higher equity ratio as a
- 16 means to address the negative impacts of the TCJA:

³⁷ Moody's Investors Service, Rating Action: Moody's downgrades ALLETE to Baa1 and affirms Superior Water and Power at A3, outlooks stable, March 26, 2019.

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).
 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).

⁴⁰ Report and Order, Docket No. 19-057-02, Dominion Energy Utah, February 25, 2020, at 6.

1 As pointed out by the Company, in April 2018, this 2 Commission adjusted the Company's equity ratio upward 3 from the 51%, which was previously approved in the 2013 4 Rate Case, to 55% as part of the Tax Cuts and Jobs Act 5 settlement between the Company and Commission PIA Staff 6 in Docket No. 36989 ("Tax Reform Settlement"). The equity 7 adjustment approved in the Tax Reform Settlement was 8 implemented to address the negative implications of tax 9 reform, provide support for maintaining the Company's credit 10 profile, and allow the Company timely access to capital markets and the ability to borrow at reasonable interest rates. 11 12 Based on the evidence presented, the Commission finds and 13 concludes that the Settlement Agreement's proposed capital 14 structure of 56% common equity level is just and reasonable considering all the evidence presented and is necessary to 15 16 avoid a credit rating downgrade.⁴¹

17

18 Q. How would potential increases in Federal taxes affect the Company?

- A. If Federal or Minnesota state taxes are increased, it will be important for regulatory
 authorities to take steps that allow utilities to recover the higher tax expense on a
 timely basis, similar to steps taken after the enactment of the TCJA to ensure that
 customers benefited from lower tax rates. Failure to implement a change in tax
 recovery would result in greater stress on financial metrics and potential reduced
 earned ROEs which could have negative credit implications.
- 25 C. Conclusion

26 Q. Have state regulatory commissions considered market events and the utility's

- ability to attract capital in determining the equity return?
- A. Yes. In a recent rate case for Consumers Energy Company, the Michigan Public
 Service Commission ("Michigan PSC") noted that it is important to consider how

⁴¹ Georgia Public Service Commission Docket No. 42516, Short Order Adopting Settlement Agreement as Modified, December 17, 2019, at 7-8. 30

- 1 a utility's access to capital could be affected in the near-term as a result of market
- 2

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reactions to global events like those that have occurred in the recent past.⁴²

Specifically, the Michigan PSC noted that:

[i]n setting the ROE at 9.90%, the Commission believes there 4 5 is an opportunity for the company to earn a fair return during 6 this period of atypical market conditions. This decision also 7 reinforces the belief, as stated in the Commission's March 29 8 order, "that customers do not benefit from a lower ROE if it 9 means the utility has difficulty accessing capital at attractive terms and in a timely manner." These conditions still hold true 10 11 based on the evidence in the instant case. The fact that other 12 utilities have been able to access capital despite lower ROEs, 13 as argued by many intervenors, is also a relevant consideration. It is also important to consider how extreme 14 market reactions to global events, as have occurred in the 15 recent past, may impact how easily capital will be able to be 16 17 accessed during the future test period should an unforeseen 18 market shock occur. The Commission will continue to monitor 19 a variety of market factors in future rate cases to gauge whether volatility and uncertainty continue to be prevalent 20 issues that merit more consideration in setting the ROE.43 21

22

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

 ⁴² Michigan Public Service Commission Order, Cause No. U-20697, Consumers Energy Company, December 17, 2020, at 165.

⁴³ *Id.*, at 43 (emphasis added).

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

- 3 A. The important conclusions regarding capital market conditions are:
- As markets continue to rebound from the uncertainty and volatility that 4 characterized capital markets in 2020 and interest rates continue to 5 6 increase from the market lows in August 2020, it is reasonable that equity 7 investors would require a higher return on equity to compensate for the 8 additional risk associated with owning common stock. Likewise, if 9 electric utilities continue to underperform the broader market, as expected 10 by analysts, this will indicate additional risk associated with these 11 investments.
- Investors' current expectations regarding the economy highlights the importance of using forward-looking inputs in the models used to estimate the cost of equity. Current utility valuations are still well above the long-term average. The current high valuations result in low dividend yields for utilities, which means that DCF models using recent historical data likely underestimate investors' required return over the period that rates will be in effect.
- 19 Credit rating agencies have demonstrated concern about the cash flow 20 metrics of utilities, related to the negative effects of both current market 21 conditions and the TCJA, which increases investor risk expectations for 22 utilities. Therefore, it is increasingly important to consider a rate of return 23 and capital structure that support the Company's cash flow metrics to 24 enable Minnesota Power the ability to attract capital at reasonable terms 25 during the period that rates will be in effect. Further, it is important to 26 recognize the incremental risk that would be created for the Company if 27 Federal or Minnesota corporate taxes increase and there was a lag in the recovery of those incremental taxes. 28

1

VI. PROXY GROUP SELECTION

2 Q. Please provide a brief profile of Minnesota Power.

3 Minnesota Power is an electric utility that is an operating division of ALLETE. The A. 4 Company provides electric utility service to approximately 145,000 retail customers in Minnesota.⁴⁴ As of December 31, 2020, Minnesota Power's net 5 utility electric plant was approximately \$3.17 billion.⁴⁵ In addition, Minnesota 6 Power had 2020 electric operating revenues of \$951 million, a 5 percent reduction 7 from 2019.46 In 2020, approximately 44 percent of Minnesota Power's net 8 9 generation needs were satisfied by its owned and joint owned facilities while the remaining 56 percent was purchased power.⁴⁷ Additionally, approximately 10 27 percent of Minnesota Power's total power supply came from coal-fired power 11 plants.⁴⁸ ALLETE currently has an investment grade long-term rating of BBB 12 13 (Outlook: Stable) from Standards & Poor's ("S&P") and Baa1 (Outlook: Stable) from Moody's.49 14

Q. Why have you used a group of proxy companies to estimate the cost of equity for Minnesota Power?

A. In this proceeding, we are focused on estimating the cost of equity for an electric
utility company that is not itself publicly traded. Because the cost of equity is a
market-based concept and given that Minnesota Power's operations do not make

⁴⁴ ALLETE, Inc., 2020 SEC Form 10-K, at 7.

⁴⁵ FERC Form 1, 2020 Q4 at 110.

⁴⁶ FERC Form 1, 2020 Q4 at 114.

⁴⁷ ALLETE, Inc., 2020 SEC Form 10-K, at 13.

⁴⁸ *Ibid*.

⁴⁹ SNL Financial, July 7, 2021.
up the entirety of a publicly traded entity, it is necessary to establish a group of
 companies that are both publicly traded and comparable to Minnesota Power in
 certain fundamental business and financial respects to serve as its "proxy" in the
 ROE estimation process.

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Even if Minnesota Power was a publicly-traded entity, it is possible that transitory events could bias its market value over a given period. A significant benefit of using a proxy group is that it moderates the effects of unusual events that may be associated with any one company. The proxy companies used in my analyses all possess a set of operating and risk characteristics that are generally comparable to the Company, and thus provide a reasonable basis to derive and estimate the appropriate ROE for Minnesota Power based on its unique risk profile.

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

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

- Pay consistent quarterly cash dividends, because companies that do not pay a dividend cannot be analyzed using the Constant Growth DCF model;
- Are covered by at least two utility industry analysts to provide a broader market perspective and to develop a range of DCF results;
- Have positive long-term earnings growth forecasts from at least two utility
 industry equity analysts because negative earnings growth rates are
 inconsistent with the underlying premise of the Constant Growth DCF
 model;

1 Have investment grade long-term issuer ratings from both S&P and 2 Moody's in order to be generally risk comparable to Minnesota Power 3 without compromising the size of the proxy group; 4 • Own regulated generation assets that are included in rate base to establish a 5 proxy group with similar operating risks as Minnesota Power; 6 Have more than 5 percent of owned regulated generation capacity come 7 from regulated coal-fired power plants to recognize the unique risks 8 associated with owning coal-fired generation assets that are consistent with 9 the risks faced by Minnesota Power; 10 Derive more than 30 percent of its megawatt-hour sales from its owned generation facilities because of the risks associated with owning and 11 12 operating generation that differ from the risks faced by distribution utilities; 13 Derive more than 60 percent of their total operating income from regulated 14 operations to ensure that the companies included in the proxy group do not 15 derive a majority of their operating income from unregulated operations; 16 Derive more than 60 percent of their total regulated operating income from 17 regulated electric operations to ensure that the companies included in the proxy group, like Minnesota Power, derive the predominant share of their 18 19 operating income from their electric segments; and 20 • Were not parties to a merger or transformative transaction during the 21 analytical periods relied on because transformative transactions can have a 22 significant effect on the share prices of the firms involved and therefore 23 affect the results of the ROE estimation methodologies.

1 Q. Did you include ALLETE, Inc. in your analysis?

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

5 Q. What is the composition of your proxy group?

A. The screening criteria discussed above is shown in Exhibit (Bulkley), Direct
Schedule 2 and resulted in a proxy group consisting of the companies shown in
Figure 6 below.

Company	Ticker
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avista Corporation	AVA
CMS Energy Corporation	CMS
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
Pinnacle West Capital Corporation	PNW
Portland General Electric Company	POR
Southern Company	SO
Xcel Energy Inc.	XEL

Figure 6 : Proxy Group

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3 VII. BUSINESS RISKS

4 Q. Do the mean DCF, CAPM, and ECAPM results for the proxy group, taken
5 alone, provide an appropriate estimate of the cost of equity for Minnesota
6 Power?

A. No. While the companies in the proxy group are generally comparable to Minnesota
Power, it is important to consider the specific business and financial risk profiles
of the proxy group companies and the subject. Therefore, I use the results of the
ROE estimation models to provide a range of the appropriate estimate of the
Company's cost of equity and then adjust the range of results to reflect any

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Docket No. E015/GR-21-335 Bulkley Direct and Schedules differences in risk between the Company and the proxy group. For Minnesota
 Power, it is particularly important to consider the Company's high degree of
 customer concentration and its overall effect on the Company's risk profile and
 ROE.

5

A. Customer Concentration

6 Q. Please summarize Minnesota Power's customer concentration risk.

A. Approximately 72 percent of Minnesota Power's 2020 total retail kWh electric
sales in Minnesota were derived from industrial customers. As shown in Figure 7,
Minnesota Power's industrial sales volume as a percentage of total retail electric
sales was higher than all of the companies in the proxy group by a significant
margin.⁵⁰

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Does not include "other" commercial or residential customers.





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Q. How does customer concentration affect business risk?

5 A. An extremely high concentration of industrial customers, operating in only two 6 industries, each with the independent ability to create large swings in utility 7 revenues, results in higher business risk. More specifically, over half of Minnesota 8 Power's 2020 retail kWh electric sales came from the mining sector which consists of taconite facilities owned by two separate companies.⁵² Since the customers are 9 10 large, they can represent a significant portion of a company's sales which could be 11 lost if a customer goes out of business. As noted by Dhaliwal, Judd, Serfling and 12 Shaikh in their article, Customer Concentration Risk and the Cost of Equity Capital:

⁵¹ Source: S&P Global Market Intelligence - Other sales includes: Total Public Street and Highway Lighting, Other Sales to Public Authorities, Sales to Railroad and Railways, and Interdepartmental Sales.

1 Depending on a major customer for a large portion of sales can be risky for a supplier for two primary reasons. First, a supplier 2 faces the risk of losing substantial future sales if a major 3 4 customer becomes financially distressed or declares 5 bankruptcy, switches to a different supplier, or decides to develop products internally. Consistent with this notion, 6 7 Hertzel et al. (2008) and Kolay et al. (2015) document 8 negative supplier abnormal stock returns to the announcement 9 that a major customer declares bankruptcy. Further, a 10 customer's weak financial condition or actions could signal inherent problems about the supplier's viability to its 11 12 remaining customers and lead to compounding losses in sales. 13 Second, a supplier faces the risk of losing anticipated cash flows from being unable to collect outstanding receivables if 14 the customer goes bankrupt. This assertion is consistent with 15 16 the finding that suppliers offering customers more trade credit experience larger negative abnormal stock returns around the 17 announcement of a customer filing for Chapter 11 bankruptcy 18 (Jorion and Zhang, 2009; Kolay et al., 2015).⁵³ 19

20 Therefore, a company that has a high degree of customer concentration will be 21 inherently riskier than a company that derived income from a larger customer base. 22 Furthermore, as Dhaliwal, Judd, Serfling and Shaik detail in the article, the 23 increased risk associated with a more concentrated customer base will have the

effect of increasing a company's cost of equity.⁵⁴ 24

25 О. Please describe how changes in economic conditions and Minnesota Power's

26 high degree of customer concentration can affect its business risk?

27 A. Minnesota Power's major industrial customers are engaged in industries such as 28 taconite mining and processing and paper manufacturing. Taconite processing 29 constitutes over half of Minnesota Power's retail kWh sales and is highly dependent 30 on economic conditions and the business cycle as taconite is an input into steel

⁵³ Dhaliwal, Dan S., J. Scott Judd, Matthew A. Serfling, and Sarah Shaikh. "Customer Concentration Risk and the Cost of Equity Capital." SSRN Electronic Journal (2016): 1-2. Web. Id., at 4.

⁵⁴

which is used in durable consumer goods. Paper manufacturing companies (i.e.,
 paper mills) are also facing decreased demand as companies are moving away from
 printed materials and instead providing information electronically.

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Q. How have mining and logging employment faired in recent economic conditions?

A. As shown in Figure 8, total mining and logging employment in Minnesota has been
volatile. As a result of COVID-19, mining and logging employment decreased
from 6,600 in February 2020 to a low of 5,300 in June 2020 before rebounding to
close to pre-recession levels at the end of 2020. Similarly, during the Great
Financial crises of 2008/2009, mining and logging employment decreased from a
high of 6,300 in 2008 to a low of 4,300 in 2009 before rebounding to pre-recession

Q. Are Minnesota Power's electric sales dependent on the taconite processing and paper manufacturing industries?

15 Yes. As discussed in the Direct Testimony of Company witness Frank L. A. 16 Frederickson, Minnesota Power provides service to all six of Minnesota's taconite 17 plants and three pulp and paper mills, which produce a variety of graphic paper and 18 pulp to serve U.S. and global markets. These nine large industrial customers 19 represent more than 60 percent of the Company's total retail kWh energy sales and 20 approximately 50 percent of the Company's peak demand. In particular, Minnesota 21 Power's sales to the taconite plants represents over half of its retail kWh energy 22 sales, and recent industry consolidation has resulted in these plants being owned

1 and operated by only two separate corporations. As a result, fluctuations in the 2 business cycle could have a large impact on Minnesota Power's retail electric sales. 3 Furthermore, if taconite production facilities and paper mills reduce output due to 4 weak economic conditions, the effect could be compounded if local employment 5 declined leading to persons and businesses moving to other areas and reducing the electric sales for Minnesota Power. 6



As shown in Figure 9, energy sales to industrial customers have been significantly A.

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affected by the business cycle. In 2009, sales fell sharply in response to the

⁵⁵ Bureau of Labor Statistics, State and Area Employment, Hours, and Earnings, Minnesota Mining and Logging employment, Series Id: SMS2700000100000001.

recession. The decrease in 2009 was primarily related to the mining industry
 curtailing production. There was another downturn in 2015-2016 that was also
 mainly related to the taconite mines curtailing production as a result of increased
 competition from steel imports as global steel production increased. More recently,
 the COVID-19 pandemic has had a substantial impact on these customers. As
 ALLETE noted in the Company's 2020 SEC Form 10-K:

7 [t]he ongoing COVID-19 pandemic and related governmental 8 responses has led to a disruption of economic activity, and 9 could result in an extended disruption of economic activity. This disruption has resulted in reduced sales and revenue from 10 industrial customers as many industrial customers operated at 11 12 reduced levels or were temporarily closed or idled during 2020. In addition, Verso Corporation indefinitely idled its 13 14 paper mill in Duluth, Minnesota... The current disruption of 15 economic activity or an extended disruption of economic activity may lead to additional adverse impacts on our taconite 16 and paper, pulp and secondary wood products, pipeline and 17 other industrial customers' operations including further 18 reduced production or the temporary idling or indefinite 19 20 shutdown of other facilities, which would result in lower sales and revenue from these customers.⁵⁶ 21

- 22 The volatility in the mining industry coupled with the decline in production at the
- 23 pulp and paper mills, as discussed in the Direct Testimonies of Mr. Frederickson
- 24 and Mr. Benjamin S. Levine, will have a direct effect on the electric sales of
- 25 Minnesota Power.

ALLETE, Inc., 2020 SEC Form 10-K, at 10.





Q. Is it reasonable to expect that Minnesota Power can make up material quantities of lost system sales by selling at market?

6 A. No, not in recent years or in the foreseeable future. The ability to resell in the 7 market to recover the revenue from energy sales is entirely dependent on the relative prices in the market and under contract with existing customers. As shown 8 9 in Figure 10, Locational Marginal Prices ("LMPs") in MISO have been declining 10 over the past 15 years as new lower variable cost resources have come online. 11 Therefore, even if the energy could be sold in the market, it is unlikely that energy 12 sold would replace all of the lost revenue since the price differential between the 13 market prices and the Company's Large Power Service Rate Schedule which is the

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rate class for the taconite mines and pulp and paper mills has been increasing over time.





8 In addition, and just as important to long-term market potential, Minnesota Power 9 has evolved its energy supply from a baseload coal fleet to over 50 percent 10 renewable energy, significantly reducing the amount of dispatchable coal 11 generation the Company has to sell into the energy market when prices are higher 12 and increasing the amount of wind generation being sold into the market at low 13 prices. For example, as discussed in the Direct Testimony of Company witness Ms. 14 Julie Pierce, Minnesota Power expects to recover only approximately one percent 15 of the lost large industrial customer retail margin today compared to the 16 approximately 30 percent of lost retail margin that the Company recovered in 2018.

- As a result, past assumptions that a utility like Minnesota Power could make up for
 lost retail sales through the energy market no longer hold.
- 3 Q. If Minnesota Power has survived past downturns in sales due to customer
 4 concentration, why is it important that this risk be addressed in this
 5 proceeding?
- 6 A. Minnesota Power has withstood downturns in the past that resulted from customer 7 concentration; however, the cumulative effect of past events has placed increasing pressures on the Company's cash flows. For example, as noted above, ALLETE 8 9 was downgraded in March of 2019 by Moody's primarily due to the financial 10 impact of the decisions in Minnesota Power's last fully litigated rate case, which 11 had a significant negative effect on the cash flows of the Company. Furthermore, 12 since the Company's 2019 rate case, cash flows have been negatively affected by 13 the fluctuation in sales of the industrial customers which, as discussed above, the 14 Company has been unable to replace through sales in MISO. Finally, the Company 15 has also been affected by economic events such as COVID-19 which resulted in 16 further losses in sales to industrial customers that were closed for a period of time 17 and as well as the permanent closure of the Verso Duluth Mill, resulting in 18 additional pressure on the Company's cash flow.

19 Q. Have credit rating agencies commented on the effect of the Company's 20 customer concentration on credit metrics?

A. Yes. The Company's customer concertation combined with the inability to cut costs
further or to offset lost retail sales in the MISO market has resulted in credit rating

1 agencies such as Moody's and S&P noting the risks faced by the Company due to 2 economic events that are only heightened by the Company's highly concentrated customer base. For example, S&P downgraded ALLETE in April 2020 in part 3 4 because S&P expected the Company's credit metrics to be negatively affected by the weaker economic conditions due to COVID-19.⁵⁷ Additionally, Moody's 5 6 recently noted that while ALLETE's credit rating outlook is stable for the near-7 term, a downgrade could occur if macroeconomic conditions result in a decline in industrial customer demand.⁵⁸ 8

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Q.

What does this information indicate regarding the importance of the Commission's decision in this proceeding for Minnesota Power?

expected to recover over the near-term, thus leaving the Company with significant

- 11 A. The Company's credit metrics have weakened over the past few years and are not
- 13 risk were another negative economic event to occur in the near-term. As a result,
- it is important that the Commission's decision in this proceeding strengthen the
 Company's credit metrics so that the Company avoids any further credit rating
 downgrades.

17 Q. How would Minnesota Power's proposed sales true-up mechanism affect the

18

Company's customer concentration risk?

A. Minnesota Power's proposed sales true-up mechanism would modulate the impacts
of the most significant swings in industrial customer volatility but would not

⁵⁷ S&P Global Ratings, "Research Update: ALLETE Inc. Downgraded To 'BBB' On Expected Weaker Financial Measures; Outlook Stable," April 22, 2020.

⁵⁸ Moody's Investors Service, "ALLETE, Inc.: Update to Credit Analysis," April 27, 2021.

1 eliminate all of the customer concentration risk. The mechanism would be 2 triggered when annual base revenues of these industrial customers (net of any offsetting sales) vary by \$10 million or more when compared to the baseline 3 revenues established in the present rate case. Once triggered, the variance amount 4 5 would be billed or credited to all customers in the following year, upon approval by the Commission. If the variance of base revenues is less than \$10 million 6 compared to the baseline from the 2022 test year, there would be no true-up in the 7 8 following year. Minnesota Power would still carry the entire risk for volatility 9 impacts of annual amounts under \$10 million. The risk of which is not insignificant 10 as revenue has been below the baseline but not greater than \$10 million twice in 11 the past three years.

12 Q. How would the proposed sales true-up mechanism address the Company's 13 customer concentration risk as compared to the proxy group?

14 A. While Minnesota Power's proposed sales true-up mechanism would mitigate the 15 impact of customer concentration risk of the Company itself, this does not imply 16 that the Company has less customer concentration risk than the proxy group. As 17 shown in Exhibit Exhibit (Bulkley), Direct Schedule 3 and discussed in more 18 detail above, approximately 60.00 percent of the operating companies held by the 19 proxy group have either a sales true-up mechanism or an alternative mechanism 20 such as revenue decoupling or formula rates which mitigate the customer 21 concentration and electric sales variability risk. Since the proxy group companies 22 have already implemented similar risk mitigation measures, Minnesota Power 23 would not have less risk than the benchmark group if the Company's proposed sales true-up mechanism was approved. Conversely, to the extent that Minnesota Power
 is not granted its proposed sales true-up in this rate case, the Company's risk would
 be substantially elevated, relative to the proxy group.

- 4 Q. What is your conclusion regarding the Company's customer concentration
 5 and its effect on the cost of equity for Minnesota Power?
- 6 A. Minnesota Power is heavily reliant on sales to industrial customers. As noted 7 above, approximately 72 percent of Minnesota Power's total retail electric sales in 8 Minnesota were to industrial customers. This concentration is higher than all of the 9 proxy group companies, especially when considering that over 50 percent of 10 Minnesota Power's total retail electric sales are to industrial customers owned by 11 only two companies. A high degree of customer concentration increases Minnesota Power's risk related to customer migration, economic conditions or competition.⁵⁹ 12 13 Furthermore, as discussed above, the current and expected level of LMPs in the 14 MISO market reduce the likelihood that the Company will be able to offset any 15 reduction in revenue resulting from declines in industrial electric sales through sales 16 into the MISO market. Therefore, the risk of eroding revenue resulting from 17 customer concentration is higher for Minnesota Power than the proxy group 18 companies on average.
- 19
- 20 While Minnesota Power has proposed a sales true-up mechanism, the sales true-up 21 mechanism does not eliminate all of the risk posed by customer concentration.

⁵⁹ Conversely, greater customer diversity decreases the effect that any one customer can have on a company's sales.

When considering the relative risk of the Company and the proxy group, it is important to recognize that most of the companies in the proxy group have some form of a mechanism to mitigate electric sales risk. Therefore, adopting a sales forecast true-up mechanism will serve to mitigate some of Minnesota Power's risk to be closer to the risks faced by the proxy group companies, but still greater than the proxy group. For that reason, I conclude that the authorized ROE for Minnesota should be higher than the proxy group mean.

8

9 Absent the implementation of the sales forecast true-up, Minnesota Power has 10 significant risk related to its high concentration of sales in a small number of 11 customers that are cyclical businesses, which is greater than the risk faced by the 12 proxy group companies on average, the majority of which have some form of sales 13 true-up mechanism. If the Company's proposed sales true-up mechanism were not 14 approved, then the Company is at much higher overall risk than the proxy group 15 companies, and I would recommend that the authorized ROE for Minnesota Power 16 be placed at the very high-end of my recommended ROE range of 9.90 percent to 17 10.50 percent.

18

B. Minnesota Regulatory Environment

19 Q. Please explain how the regulatory environment affects investors' risk
20 assessments of utility companies.

A. The ratemaking process is premised on the principle that, for investors and
 companies to commit the capital needed to provide safe and reliable utility service,

1 the subject utility must have the opportunity to recover the return of, and the 2 market-required return on, invested capital. Regulatory authorities recognize that 3 because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms; doing so balances the long-term 4 5 interests of investors and customers. Utilities must finance their operations and 6 require the opportunity to earn a reasonable return on their invested capital to maintain their financial profiles. Minnesota Power is no exception. In that respect, 7 8 the regulatory environment is one of the most important factors considered in both 9 debt and equity investors' risk assessments.

10

From the perspective of debt investors, the authorized return should enable the 11 12 utility to generate the cash flow needed to meet their near-term financial obligations, make the capital investments needed to maintain and expand their 13 14 systems, and maintain the necessary levels of liquidity to fund unexpected events. 15 This financial liquidity must be derived not only from internally-generated funds, 16 but also by efficient access to capital markets. Moreover, because fixed income 17 investors have many investment alternatives, even within a given market sector, the 18 utility's financial profile must be adequate on a relative basis to ensure the ability 19 to attract capital under a variety of economic and financial market conditions.

20

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

4

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

- 6 A. Both S&P and Moody's consider the overall regulatory framework in establishing 7 credit ratings. Moody's establishes credit ratings based on four key factors: 8 (1) regulatory framework; (2) the ability to recover costs and earn returns; 9 (3) diversification; and (4) financial strength, liquidity and key financial metrics. 10 Of these criteria, regulatory framework and the ability to recover costs and earn 11 returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's 12 assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.⁶⁰ 13
- 14

S&P also identifies the regulatory framework as an important factor in credit ratings for regulated utilities, stating: "One significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions in which a utility operates."⁶¹ S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated

⁶⁰ Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 4.

⁶¹ 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.

utilities: (1) regulatory stability; (2) tariff-setting procedures and design;
 (3) financial stability; and (4) regulatory independence and insulation.⁶²

3 Q. How does the regulatory environment in which a utility operates affect its 4 access to and cost of capital?

5 A. The regulatory environment can significantly affect both the access to, and cost of 6 capital in several ways. First, the proportion and cost of debt capital available to 7 utility companies are influenced by the rating agencies' assessment of the 8 regulatory environment. As noted by Moody's, "[f]or rate regulated utilities, which 9 typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations."⁶³ 10 11 Moody's further highlighted the relevance of a stable and predictable regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the 12 13 Regulatory Framework is the foundation for how all the decisions that affect 14 utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation."64 15

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

19 20 A. Yes. I have evaluated the regulatory framework in Minnesota considering three factors which are important to ensuring Minnesota Power maintains access to

⁶² *Id.*, at 1.

⁶³ Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 6.

⁶⁴ *Ibid*.

1 capital at reasonable terms. As I will discuss in more detail below, the three factors 2 are: 1) cost recovery mechanisms which allow a utility to recover costs in a timely 3 manner between rate cases and provide the utility the opportunity to earn its 4 authorized return; 2) rate design which if not based on cost causation can result in 5 a significant amount of fixed costs being recovered through the volumetric charge 6 thus increasing cost recovery risk; and 3) comparable return standard because an 7 awarded ROE that is significantly below the ROEs awarded to other utilities with 8 comparable risks can affect the ability of a utility to attract capital at reasonable 9 terms.

10 **1. Cost Recovery Mechanisms**

Q. Have you conducted any analysis to compare the cost recovery mechanisms of
 Minnesota Power to the cost recovery mechanisms approved in the
 jurisdictions in which the companies in your proxy group operate?

A. Yes. I selected four mechanisms that are important to provide a regulated utility an opportunity to earn its authorized ROE. These are: 1) test year convention (i.e., forecast vs. historical); 2) method for determining rate base (i.e., average vs. yearend); 3) use of either a sales true-up mechanism, revenue decoupling mechanism or other clauses that mitigate volumetric risk; and 4) prevalence of capital cost recovery between rate cases. The results of this cost recovery assessment are shown in Exhibit__(Bulkley), Direct Schedule 3 and are summarized below.

1Test year convention: Minnesota Power uses a forecast test year in Minnesota2which is similar to the proxy group. As shown in Exhibit___(Bulkley), Direct3Schedule 3 approximately 49.38 percent of the companies in the proxy group4use forecast or partially forecast test year.

5

6 <u>Rate Base</u>: The Company's rate base in Minnesota is determined based on the 7 average test year rate base, while 40.74 percent of the operating companies held 8 by proxy group are allowed to use year-end rate base, meaning that the rate base 9 for the proxy companies includes capital additions that occurred throughout the 10 test year and is more reflective of net utility plant going forward than the average 11 of the test year balances.

12

13 Volumetric Risk: While Minnesota Power does not currently have protection 14 against volumetric risk (through decoupling) in Minnesota, Minnesota Power is 15 requesting a sales true-up mechanism for the Company's industrial rate classes 16 in this case. This mechanism would protect against significant volatility swings 17 resulting in industrial sales impacts of \$10 million or more compared to baseline 18 revenues. By comparison, approximately 60.00 percent of the operating 19 companies held by the proxy group have some form of protection against 20 volumetric risk through either sales true-up mechanisms, revenue decoupling 21 mechanisms, formula rate plans, or straight fixed-variable rate design.

22

1Capital Cost Recovery:Minnesota Power does have a capital tracking2mechanism to recover certain transmission and renewable investments and3expenditures between rate cases. However, the Company's capital forecast has4a limited number of projects eligible for current cost recovery through riders,5and the majority of the forecast will need to be recovered through base rates.6Moreover, 46.91 percent of the operating subsidiaries held by the proxy group7companies have some form of capital cost recovery mechanism in place.

8 **2.** Rate Design

9 Q. Can a Company's rate design increase volumetric risk?

10 A. Yes. The majority of an electric utility's costs are fixed costs incurred to construct 11 and maintain the distribution system. As such, most of a utility's costs are fixed 12 and do not vary with energy consumption. However, rates are often structured to 13 recover a large portion of a utility's fixed costs on a variable basis. This is 14 particularly true for the residential customer class. Since a customer's usage varies 15 from year to year, the more fixed costs that are recovered on a variable basis, the 16 higher the volatility of annual cost recovery for the company. Therefore, cost 17 recovery for utilities that have higher fixed customer charges are less susceptible to 18 fluctuations in usage and are more likely to recover their cost to serve. Minnesota 19 Power's residential rate class currently has a customer charge of \$8.00, which as I 20 will discuss below is low; thus, the Company faces increased volumetric risk 21 associated with the residential rate class.

Q. Have you developed any analysis to evaluate the effect of rate design on the volumetric risk of Minnesota Power?

- 3 Yes. As discussed above, it is important to also review the size of the customer A. 4 charges when assessing the volumetric risk of Minnesota Power as compared to the 5 proxy group. Therefore, for the residential rate class, I have compared the level of 6 the customer charge of Minnesota Power and the operating subsidiaries of the 7 companies in the proxy group. As shown in Exhibit (Bulkley), Direct Schedule 4, Minnesota Power has a residential customer charge of \$8.00 while the average 8 9 customer charge for the utility operating companies of the proxy group range from 10 \$4.20 to \$33.03 with an average of \$11.99. Therefore, Minnesota Power has much 11 greater volumetric risk as compared to the proxy group as a result of the Company's 12 residential rate design.
- 13 **3.** Authorized ROEs

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

16 A. Figure 11 below shows the authorized returns for vertically integrated electric 17 utilities in other jurisdictions since January 2009, and the returns authorized in 18 Minnesota for electric companies. As shown in Figure 11, the authorized returns 19 for electric companies in Minnesota were consistent with the national average for 20 vertically integrated electric utilities between 2009 and 2012; however, between 21 2013 and 2018, the authorized returns for electric utilities in Minnesota were 22 consistently below the national average and at the bottom of the range produced by 23 the authorized ROEs from other state jurisdictions. It is important to note, in the

1 Commission's two most recent decisions, the Commission authorized an ROE of 2 9.70 percent for MERC in Docket No. G011/GR-17-563 and an ROE of 9.53 percent in Docket No. G-004/GR-19-511 for Great Plains in 2020.⁶⁵ While 3 these were natural gas distribution utility rate cases, the ROE's authorized for 4 5 MERC and Great Plains were generally consistent with the average authorized ROE 6 for natural gas utilities at that time and also the average authorized ROEs for vertically integrated electric utilities in other jurisdictions at the time of the 7 8 decisions.



9 Figure 11: Comparison of Minnesota and U.S. Authorized Electric Returns⁶⁶

⁶⁵ Docket No. G011/GR-17-563, Findings of Fact, Conclusions and Order, at 27; Docket No. G-004/GR-19-511, Findings of Fact, Conclusions and Order, at 18.

⁶⁶ S&P Capital IQ Pro. Includes only vertically integrated electric utility ROEs between January 1, 2009, and August 31, 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.

Q. What does this information indicate regarding the level of allowed ROEs for
 electric utilities in Minnesota versus the returns authorized in other
 jurisdictions?

4 A. Prior to 2018, the Commission relied primarily on the results of the DCF analysis 5 to determine a company's authorized ROE; however, dividend yields for utility 6 stocks were well below historical averages during this time which likely resulted in 7 ROE results from the DCF model that understated the cost of equity. In the more recent decisions for MERC and Great Plains, the Commission considered all the 8 9 evidence presented in the cases as opposed to solely relying on the results of the 10 Two-Growth DCF. For example, in the decision for MERC while the Commission placed primary weight on the results of the Two-Growth DCF model, the 11 12 Commission noted that the authorized return was supported by (a) the Two-Growth 13 DCF results developed by each of the parties in the case; (b) the results of the other 14 analytical approaches; and (c) other contextual data that was contained in the 15 record.⁶⁷ Similarly in the decision for Great Plains, the Commission noted:

16The record does not formulaically dictate a particular ROE to17be approved. Instead, the record presents a range of reasonable18returns on equity that the Commission has carefully evaluated19based on the analyses and arguments in the record. As such,20the Commission will set the Company's authorized ROE in

- 21 light of the record as a whole.⁶⁸
- 22 Therefore, the Commission considered all of the data presented in the cases in
- arriving at the authorized ROE for MERC and Great Plains. The consideration of

⁶⁷ Docket No. G011/GR-17-563, Findings of Fact, Conclusions and Order, at 27.

Docket No. G004/GR-19-511, Findings of Fact, Conclusions and Order, at 17.

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multiple approaches and additional data resulted in an authorized ROE that was consistent with the returns authorized for utilities in other jurisdictions.

- 3 Q. Should the Commission be concerned about authorizing equity returns that 4 are at the low end of the range established by other state regulatory 5 jurisdictions?
- A. Yes, for several reasons. First, Minnesota operating divisions must compete for
 capital within their own corporate structure, which must in turn compete for capital
 with other utilities and businesses. Placing Minnesota Power at the low end of
 authorized ROEs outside Minnesota over the longer term can negatively impact the
 Company's access to capital.
- 11

12 Second, as noted in Sections V and VIII, the economy is in the expansion phase of 13 the business cycle; thus, interest rates are expected to increase, and utilities are 14 expected to underperform over the near-term. If utility stocks underperform over 15 the near-term then utility dividend yields will increase resulting in higher estimates 16 of the ROE results produced by the DCF model. Therefore, the results of the DCF model will underestimate investors' expected ROE over the time period in which 17 18 Minnesota Power's rates will be in effect. As a result, it is important that the 19 Commission consider, as it did in Docket No. G011/GR-17-563 and Docket No. G-20 004/GR-19-511, the results of alternative methods such as the forward looking 21 CAPM, ECAPM, and Bond Yield Plus Risk Premium and the returns that have been authorized by other electric utilities across the U.S. 22

Q. How shou

How should the Commission use the information regarding authorized ROEs in other jurisdictions in determining the ROE for Minnesota Power?

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

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10 Furthermore, investors are also likely to consider business and financial risks for a 11 company like Minnesota Power which faces increased risk as a result of the 12 composition of the Company's customer base. Therefore, authorizing an ROE for 13 Minnesota Power that is equivalent to the average authorized ROE for other 14 vertically integrated electric utilities is not sufficient to compensate investors for 15 the added risk of Minnesota Power. As such, it is important that the Commission 16 consider, as I have in my recommendation, the additional risk of Minnesota Power 17 and place the authorized ROE for Minnesota Power towards the high end of 18 authorized ROEs for other vertically integrated electric utilities.

1 Q. Have any credit rating agencies commented on the regulatory environment in

- 2 Minnesota?
- 3 A. Yes. As discussed in Section V above, Moody's downgraded ALLETE from A3 to
- 4 Baa1 in March 2019 for reasons that included the less than favorable outcome in
- 5 the Company's last rate case in Minnesota. Specifically, Moody's noted:

6 In January 2018, Minnesota Power (MP) completed its first 7 general rate case in seven years. The regulatory order 8 approved a \$12.6 million rate increase that was materially 9 lower than the company's original \$55 million original request. It was also well below the \$35 million interim rate increase 10 levied on rate payers shortly after the case was filed, leading 11 to a net reduction in customer rates. The order also denied MP 12 13 certain credit supportive cost recovery mechanisms which are 14 available to other utilities in Minnesota, and a rate true-up 15 mechanism that would have mitigated MP's exposure to the earnings volatility associated with its large industrial customer 16 17 base.

18 Although ALLETE has taken actions to reduce its operating 19 and maintenance expenses to mitigate the lower approved 20 revenues, we don't expect the cost containment measures to be 21 sufficient to offset the negative cash flow impact of both the 22 rate case outcome and the passage of federal tax reform in December 2017. Our forecasts project cash flow pre-working 23 24 capital to debt falling to about 20%, below the 22% downgrade 25 threshold we had previously indicated for the maintenance of 26 an A3 rating, for the foreseeable future⁶⁹

27 For these reasons, Moody's concluded in a subsequent credit report in April 2019

that while the Company has access to ratemaking mechanisms such as a forward

- 29 test year and various riders, the ratemaking mechanisms are offset by the rate case
- 30 outcome which indicates a less than supportive regulatory relationship between

Moody's Investors Service, Rating Action: Moody's downgrades ALLETE to Baa1 and affirms Superior Water and Power at A3, outlooks stable, March 26, 2019.

1	Minnesota Power and the Commission. ⁷⁰ While Moody's viewed the
2	Commission's decision in Minnesota Power's last fully litigated rate case as credit
3	negative, Moody's did recently note that the Commission's decision in Docket E-
4	015/GR-19-442 indicated a more constructive relationship between Minnesota
5	Power and the Commission. ⁷¹ Since Minnesota is the only regulatory jurisdiction
6	for ALLETE, credit rating agencies place significant weight on the relationship
7	between Minnesota Power and the Commission in the determination of ALLETE's
8	credit rating. As S&P recently noted:

9 S&P Global Ratings expects ALLETE Inc. to effectively 10 manage regulatory risk, bolstering its business risk profile. 11 The company benefits from numerous regulatory mechanisms 12 under the constructive Minnesota, Wisconsin, and FERC frameworks. Although the concentration of its operations in 13 Minnesota leaves the company dependent on the MPUC to 14 sustain its credit quality, its position as the lowest-price retailer 15 of electricity in the state positions it favorably.⁷² 16

17 Q. What are your conclusions regarding the perceived risks related to the

18 Minnesota regulatory environment?

A. As discussed throughout this section of my testimony, both Moody's, and S&P
 have identified the supportiveness of the regulatory environment as an important
 consideration in developing their overall credit ratings for regulated utilities.
 Considering the regulatory adjustment mechanisms, many of the companies in the

23 proxy group have slightly more timely cost recovery through forecasted test years,

⁷⁰ Moody's Investors Service, Credit Opinion: ALLETE, Inc. Update following downgrade, April 3, 2019, at 3.

⁷¹ Moody's Investors Service, "ALLETE, Inc.: Update to Credit Analysis," April 27, 2021.

 ⁷² S&P Global Ratings, "Research Update: ALLETE Inc. Downgraded To 'BBB' On Expected Weaker Financial Measures; Outlook Stable," April 22, 2020.

1 year-end rate base, cost recovery trackers and revenue stabilization mechanisms 2 than Minnesota Power has in Minnesota. While Minnesota Power utilizes a forecasted test year and is proposing a sales true-up mechanism, the Company still 3 has volumetric risk given the rate design of the residential rate class and the 4 5 proposed sales true-up mechanism which would not provide annual rate 6 adjustments for variations in industrial sales of less than \$10 million. Further, the Company's capital tracking mechanisms only allows recovery of a very limited 7 8 portion of Minnesota Power's planned capital expenditures from 2021 - 2025.

9

10 Additionally, while recent returns authorized in Minnesota have generally been 11 consistent with the average authorized returns for utilities in other jurisdictions 12 across the U.S., it important to note that the ROE authorized for Minnesota Power 13 of 9.25 percent in 2018 was well below the average authorized ROE for vertically 14 integrated electric utilities across the U.S. at the time. As noted above, the 15 Company was downgraded by Moody's following the decision in the Company's 16 last rate case which Moody's viewed as credit negative and noted will have a 17 negative effect on the Company's cash flows over the near-term. Moreover, S&P 18 recently downgraded ALLETE in April 2020 in part because S&P expected the 19 Company's credit metrics to be negatively affected by the weaker economic 20 conditions due to COVID-19.73 Thus, the prior fully litigated rate case decision, 21 COVID-19 and the negative effect of the TCJA on the cash flows of the Company

⁷³ S&P Global Ratings, "Research Update: ALLETE Inc. Downgraded To 'BBB' On Expected Weaker Financial Measures; Outlook Stable," April 22, 2020.

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increases the risk that an economic downturn in the near-term could have a significant effect on the financial metrics of the Company.

3

4 I conclude that Minnesota Power has greater than average regulatory risk when 5 compared to the proxy group indicating that the authorized ROE for Minnesota Power should be above the proxy group mean. Finally, while my analysis assumes 6 7 that the Company's proposed sales true-up mechanism will be approved, the volumetric risk of Minnesota Power would increase substantially if the 8 9 Commission does not approve the Company's proposal. Thus, if the sales true-up 10 mechanism is not approved then the authorized ROE for Minnesota Power should be placed at the very high-end of my recommended ROE range of 9.90 percent to 11 12 10.50 percent.

13 VIII. COST OF EQUITY ESTIMATION

14 Q. Please briefly discuss the ROE in the context of the regulated rate of return 15 ("ROR").

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

1

Q.

How is the required ROE determined?

2 The required ROE is estimated by using one or more analytical techniques that rely A. 3 on market-based data to quantify investor expectations regarding required equity 4 returns, adjusted for certain incremental costs and risks. Informed judgment is then 5 applied to determine where the company's cost of equity falls within the range of 6 results. The key consideration in determining the cost of equity is to ensure that 7 the methodologies employed reasonably reflect investors' views of the financial markets in general, as well as the subject company (in the context of the proxy 8 9 group), in particular.

10 Q. What methods did you use to determine Minnesota Power's ROE?

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

16

A. Importance of Multiple Analytical Approaches

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

A. Because the cost of equity is not directly observable, it must be estimated based on
both quantitative and qualitative information. When faced with the task of
estimating the cost of equity, analysts and investors are inclined to gather and
evaluate as much relevant data as reasonably can be analyzed. Several models have
been developed to estimate the cost of equity, and I use multiple approaches to

estimate the cost of equity. As a practical matter, however, all of the models
available for estimating the cost of equity are subject to limiting assumptions or
other methodological constraints. Consequently, many well-regarded finance texts
recommend using multiple approaches when estimating the cost of equity. For
example, Copeland, Koller, and Murrin⁷⁴ suggest using the CAPM and Arbitrage
Pricing Theory model, while Brigham and Gapenski⁷⁵ recommend the CAPM,
DCF, and Bond Yield Plus Risk Premium approaches.

8 Q. Is it important given the current market conditions to use more than one 9 analytical approach?

10 Yes. Low interest rates and the effects of the investor "flight to quality" can be A. 11 seen in high utility share valuations, relative to historical levels and relative to the 12 broader market. Higher utility stock valuations produce lower dividend yields and 13 result in lower cost of equity estimates from a DCF analysis. Low interest rates 14 also affect the CAPM in two ways: (1) the risk-free rate is lower, and (2) because 15 the market risk premium is a function of interest rates, (i.e., it is the return on the 16 broad stock market less the risk-free interest rate), the risk premium should move 17 higher when interest rates are lower. Therefore, it is important to use multiple 18 analytical approaches to moderate the impact that the current low interest rate 19 environment is having on the ROE estimates for the proxy group and, where

⁷⁴ Tom Copeland, Tim Koller and Jack Murrin, <u>Valuation: Measuring and Managing the Value of Companies</u>, 3rd Ed. (New York: McKinsey & Company, Inc., 2000), at 214.

⁷⁵ Eugene Brigham, Louis Gapenski, <u>Financial Management: Theory and Practice</u>, 7th Ed. (Orlando: Dryden Press, 1994), at 341.

possible, consider using projected market data in the models to estimate the return
 for the forward-looking period.

Q. Has the Commission recognized that it is important to consider the results of multiple ROE estimation models?

- 5 A. Yes. As I discussed earlier in my testimony, the Commission has considered the 6 results of multiple models in recent Orders including those for MERC, Minnesota 7 Power, Otter Tail and Great Plains. In its recent order for MERC, the Commission 8 emphasized the importance of considering the results of each model submitted by
- 9 the witnesses in the case. Specifically, the Commission noted that

10	[n]ot all models are equally probative, and not every
11	application of the same model is equally probative. The
12	Commission examines the results of every model introduced
13	into the record in every case. In this case, the Commission
14	agrees with the ALJ that the DCF model is the best in the
15	record for determining return on equity. The Commission
16	finds that the transparency and objectivity of the DCF model
17	make it the strongest, most credible model, and that the most
18	reasonable way to proceed is to use its results as a baseline and
19	to use the results of other models to check, inform, and refine
20	those results. ⁷⁶

- 21 In the decision for MERC, the Commission concluded that the results of the DCF
- 22 models and the other models in the case supported the ROE that was authorized for
- 23 MERC.⁷⁷ Similarly, in the most completed recent case for Minnesota Power, the
- 24 Commission explained that:
- 25[t]he recommendations of the parties all fall into a fairly26narrow and often overlapping range, though the DCF analyses

⁷⁶ Docket No. G011/GR-17-563, Findings of Fact, Conclusions and Order, at 27.

⁷⁷ Ibid.

higher end of the range.⁷⁸ 3 To account for the divergence between the results of the DCF models and the 4 5 CAPM and Bond Yield Plus Risk Premium analyses, the Commission authorized an ROE towards the higher end of the results of the DCF models.⁷⁹ Thus. the 6 7 Commission recognizes the importance of considering the results of each model 8 presented in the rate case since market conditions can cause the results produced 9 by each of the models to diverge.

tend to support a lower ROE in that range, and CAPM and risk

premium models (and blended approaches) tend to support the

10 **O**. What are your conclusions about the results of the DCF and CAPM models?

11 A. Recent market data that is used as the basis for the assumptions for both models 12 have been affected by market conditions. As a result, relying exclusively on 13 historical assumptions in these models, without considering whether these 14 assumptions are consistent with investors' future expectations, will underestimate 15 the cost of equity that investors would require over the period that the rates in this case are to be in effect. In this instance, relying on the historically low dividend 16 17 yields that are not expected to continue over the period that the new rates will be in 18 effect will underestimate the ROE for Minnesota Power.

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Furthermore, as discussed in Section V above, long-term interest rates have 20 21 increased since August 2020 and this trend is expected to continue over the near-22 term as the economy enters the recovery phase of the business cycle. Therefore,

⁷⁸ Docket No. E015/GR-16-664, Findings of Fact, Conclusions and Order, at 60. *Id.*, at 61.
the use of current averages of Treasury bond yields as the estimate of the risk-free rate in the CAPM is not appropriate since recent market conditions are not expected to continue over the long-term. Instead, analysts should rely on projected yields of Treasury Bonds in the CAPM. The projected Treasury Bond yields results in CAPM estimates that are more reflective of the market conditions that investors expect during the period that the Company's rates will be in effect.

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B. Constant Growth DCF Model

8 Q. Please describe the DCF approach.

9 A. The DCF approach is based on the theory that a stock's current price represents the 10 present value of all expected future cash flows. In its most general form, the DCF 11 model is expressed as follows:

12
$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_{\infty}}{(1+k)^{\infty}}$$
[1]

13 Where P_0 represents the current stock price, $D1...D\infty$ are all expected future 14 dividends, and k is the discount rate, or required ROE. Equation [1] is a standard 15 present value calculation that can be simplified and rearranged into the following 16 form:

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

Equation [2] is often referred to as the Constant Growth DCF (or CGDCF) 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 is violated,
considered judgment and/or specific adjustments should be applied to the results.

Q. What market data did you use to calculate the dividend yield in your Constant 8 Growth DCF model?

9 A. The dividend yield in my Constant Growth DCF model is based on the proxy
10 companies' current annualized dividend and average closing stock prices over the
11 30-, 90-, and 180-trading days ended August 31, 2021.

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

13 A. In my Constant Growth DCF model, I use an average of recent trading days to 14 calculate the term P_0 in the DCF model to ensure that the ROE is not skewed by 15 anomalous events that may affect stock prices on any given trading day. The 16 averaging period should also be reasonably representative of expected capital 17 market conditions over the long-term. However, the averaging periods that I use 18 rely on historical prices which, as discussed above, are currently at unsustainably 19 high levels that are not expected to continue during the period that Minnesota 20 Power's rates will be in effect. The use of current prices in the Constant Growth 21 DCF model is not consistent with the forward-looking market expectations. 22 Therefore, the results of my Constant Growth DCF model using historical data may

underestimate the forward-looking cost of equity. As a result, I place more weight
 on the mean to mean-high results produced by my Constant Growth DCF model.

3 Q. Did you make any adjustments to the dividend yield to account for periodic 4 growth in dividends?

5 A. Yes, I did. Because utility companies tend to increase their quarterly dividends at 6 different times throughout the year, it is reasonable to assume that dividend 7 increases will be evenly distributed over calendar quarters. Given that assumption, 8 it is reasonable to apply one-half of the expected annual dividend growth rate for 9 purposes of calculating the expected dividend yield component of the DCF model. 10 This adjustment ensures that the expected first-year dividend yield is, on average, 11 representative of the coming twelve-month period, and does not overstate the 12 aggregated dividends to be paid during that time.

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

15 A. In its Constant Growth form, the DCF model (*i.e.*, Equation [2]) assumes a single 16 growth estimate in perpetuity. To reduce the long-term growth rate to a single 17 measure, one must assume that the payout ratio remains constant and that earnings 18 per share, dividends per share and book value per share all grow at the same 19 constant rate. Over the long run, however, dividend growth can only be sustained 20 by earnings growth. Therefore, it is important to incorporate a variety of sources 21 of long-term earnings growth rates into the Constant Growth DCF model.

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

- A. My Constant Growth DCF model incorporates three sources of long-term earnings
 growth rates: (1) Zacks Investment Research; (2) Thomson First Call (provided by
 Yahoo Finance); and (3) Value Line Investment Survey.
- 5

C. Two-Growth DCF Model

6 Q. What other forms of the DCF model have you considered?

7 A. In order to address some of the limiting assumptions underlying the Constant 8 Growth form of the DCF model, I also considered the results of a Two-Growth 9 form of the DCF model. As with the Constant Growth DCF model, the Two-10 Growth form defines the cost of equity as the discount rate that sets the current 11 price equal to the discounted value of future cash flows; however, unlike the 12 Constant Growth DCF model, the Two-Growth DCF model removes the effect of 13 earnings growth rates that are considered either too high or too low to be sustainable over the long-term. 14

Q. Has the Commission previously relied on the result of the Two-Growth DCF model?

A. Yes. As discussed previously, the Commission has historically placed greater
weight on the results of the Two-Growth DCF model and used the results of other
analytical models such as the CAPM and Bond Yield Risk Premium analyses as a
check on the reasonableness of the Two-Growth DCF results. Figure 12
summarizes 16 recent decisions issued by the Commission since 2010 in fully

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litigated rate cases. As shown in Figure 12, the Commission has relied on the results of the Two-Growth DCF model in 12 of these 16 cases.

Figure 12: Commission's Reliance on the TGDCF Model

Date	Company	Docket No.	Case Type	Reliance on TGDCF (Yes/No)
2020	Great Plains Natural Gas	G004/GR-19-511	Gas	Yes ⁸⁰
2018	MERC	G011/GR-17-563	Gas	Yes ⁸¹
2017	Minnesota Power Company	E015/GR-16-664	Electric	Yes ⁸²
2016	OTP	E017/GR-15-1033	Electric	Yes ⁸³
2016	MERC	G011/GR-15-736	Gas	Yes ⁸⁴
2016	CenterPoint Energy Minnesota Gas	G008/GR-15-424	Gas	Yes ⁸⁵
2016	Great Plains Natural Gas	G004/GR-15-879	Gas	Yes ⁸⁶
2014	Northern States Power Co.	E002/GR-13-868	Electric	Yes ⁸⁷
2014	CenterPoint Energy Minnesota Gas	G008/GR-13-316	Gas	Yes ^{88 89}
2014	MERC	G011/GR-13-617	Gas	Yes ⁹⁰
2013	Northern States Power Company	E002/GR-12-961	Electric	Yes ^{91 92}
2012	MERC	G007,011/GR-10-977	Gas	No (used CGDCF) ⁹³

⁸⁰ Docket No. G-004/GR-19-511, Findings of Fact, and Conclusion and Order, at 18.

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⁸¹ Docket No. G011/GR-17-563, Findings of Fact, Conclusions and Order, at 27.

⁸² Docket No. E015/GR-16-664, Findings of Fact, Conclusions and Order, at 61.

⁸³ Docket No. E017/GR-15-1033, Findings of Fact, Conclusions and Order, at 55.

⁸⁴ Docket No. G011/GR-15-736, Findings of Fact, Conclusions and Order, at 27.

⁸⁵ Docket No. G008/GR-15-424, Findings of Fact, Conclusions and Order, at 42-44.

⁸⁶ Docket No. G004/GR-15-879, Findings of Fact, Conclusions and Order, at 23.

⁸⁷ Docket No. E002/GR-13-868, Findings of Fact, Conclusions and Order, at 57.

⁸⁸ Docket No. E008/GR-13-316, Findings of Fact, Conclusions and Order, at 32.

⁸⁹ G008/GR-13-316, Direct Testimony of Eilon Amit, November 26, 2013, at 8-13.

⁹⁰ Docket No. G011/GR-13-617, Findings of Fact, Conclusions and Order, at 31-32.

⁹¹ Docket No. E002/GR-12-961, Findings of Fact, Conclusions and Order, at 43.

⁹² E002/GR-12-961, Surrebuttal Testimony of Eilon Amit, at 5 and Appendix A, DOC Ex. EA-12.

⁹³ Docket No. G007,011/GR-10-977, Findings of Fact, Conclusions and Order, at 23.

Date	Company	Docket No.	Case Type	Reliance on TGDCF (Yes/No)
2011	IPL	E001/GR-10-276	Electric	Yes ^{94 95}
2011	OTP	E017/GR-10-239	Electric	No (used CGDCF) ⁹⁶
2010	Northern States Power Company	G002/GR-09-1153	Electric	No (used CGDCF) ⁹⁷
2010	CenterPoint Energy Minnesota Gas	G008/GR-08-1075	Gas	No (used CGDCF) ⁹⁸

2 Q. Please generally describe your Two-Growth DCF model.

3 A. As discussed in the Section above, the Constant Growth DCF model assumes a 4 single growth estimate in perpetuity which for my Constant Growth DCF model 5 was the long-term earnings growth rates from First Call, Zacks and Value Line. The earnings growth rates used in my Constant Growth DCF model are developed 6 7 by analysts for a five-year period and therefore, may not reflect the long-term 8 growth rate of a company. As a result, I developed a Two-Growth DCF model to 9 reduce the effect of low or high earnings growth rates on the calculated ROE of a 10 company by utilizing one growth rate to reflect short-term growth and a separate 11 growth rate for long-term growth.

⁹⁴ Docket No. E001/GR-10-276, Findings of Fact, Conclusions and Order, at 10.

⁹⁵ E001/GR-10-276, Direct Testimony of Eilon Amit, December 3, 2010, at 30-42.

⁹⁶ Docket No. E017/GR-10-239, Findings of Fact, Conclusions and Order, at 43-44.

⁹⁷ Docket No. G002/GR-09-1153, Findings of Fact, Conclusions and Order, at 28-29.

⁹⁸ Docket No. G008/GR-08-1075, Findings of Fact, Conclusions and Order, at 7.

Q. How did you apply the Two-Growth DCF to the companies in your proxy group?

3 I applied the Two-Growth DCF approach to companies that had an earnings growth A. 4 rate that could be considered unsustainable for the long-term as compared to the 5 proxy group. An earnings growth rate was considered to be abnormally high or 6 low if the earnings growth rate was outside of the range determined by the average 7 growth rate of the proxy group plus or minus one standard deviation. For the companies with a high or low growth rate, I estimated the companies' ROE by 8 9 applying the earnings growth rate used in the Constant Growth DCF model for the 10 first five-years (i.e., short-term) and then for the long-term, I used the proxy group average growth rate minus one standard deviation in the case of companies with a 11 12 low growth rate and the proxy group average growth rate plus one standard 13 deviation in the case of companies with a high growth rate. This approach is 14 consistent with the approach applied by the Minnesota Department of Commerce, 15 Division of Energy Resources ("Department") and adopted by the Commission in 16 many proceedings.

17 Q. Should companies with outlier earnings growth rate be excluded from the 18 proxy group prior to calculating the Two-Growth DCF model?

A. No, they should not. As noted above, the Two-Growth DCF model applies a
statistical approach to address both sustainable growth rates and moderate growth
rates that may not be considered sustainable over the long-term. Since the purpose
of the Two-Growth DCF model is to account for growth rates that may not be
sustainable over the long-term, excluding a company with a growth rate that the

1 analyst perceives to be unsustainable is not appropriate as it will bias the results of 2 the Two-Growth DCF model. Specifically, the removal of a company for an unsustainable growth rate will affect the calculation of the average and standard 3 4 deviation for the proxy group. These statistics are used to determine which growth 5 rates are replaced in the second stage of the model. In this instance, the standard deviation for the proxy group will decrease and thus the range of growth rates 6 7 considered sustainable also decreases. The result of removing a company could be 8 that the growth rates of companies that remain in the proxy group, which would 9 otherwise be considered sustainable using the fully proxy group, may be considered 10 unsustainable in the standard deviation calculation. Therefore, interjecting an analysts' judgement about the growth rates before using the Two-Growth DCF 11 12 model, biases the statistical analysis that is fundamental to the Two-Growth DCF analysis and can alter the results of the Two-Growth DCF model. 13

14 Q. Has the Commission previously discussed the purpose of the Two-Growth

- 15 **DCF model?**
- 16 A. Yes. In its order in Docket No. G-011/GR-15-736 for MERC, the Commission
- 17 noted:

18 The DCF model uses the current dividend yield and the 19 expected growth rate of dividends to determine what rate of 20 return is high enough to induce investment. The model is 21 derived from a formula used by investors to assess the 22 attractiveness of investment opportunities using three inputsdividends, market equity prices, and earnings/dividend growth 23 rates. Its two basic variants are the Constant-Growth DCF, the 24 classic version, and the Two-Growth DCF, designed for 25 situations in which the short-term, projected earnings growth 26 27 rates may not be expected to continue in the long run. The two-

1 2		growth model uses one growth rate for an initial period, followed by a different growth rate for the long term. ⁹⁹
3		In summary, the Commission noted that the purpose of the Two-Growth DCF
4		model is to identify and adjust for growth rates that are not expected to be
5		sustainable in the long-run. This is consistent with my understanding of the Two-
6		Growth DCF model.
7	Q.	Why did you consider the Two-Growth DCF model and not a Multi-Stage
8		DCF model?
9	A.	The Multi-Stage DCF model enables the analyst to specify different growth rates
10		over three time periods. Therefore, the Multi-Stage DCF model: a) addresses the
11		possibility that mean five-year growth rates may not be reasonable in perpetuity
12		and that payout ratios could vary over time; and b) allows for a gradual transition
13		from the first-stage growth rate to the long-term growth rate. However, there are
14		three reasons why I did not consider the Multi-Stage model in this proceeding.
15		
16		First, as noted above, the Commission stated the purpose of the Two-Growth DCF
17		model is to identify and adjust for growth rates that are not expected to be
18		sustainable in the long-run. ¹⁰⁰ Therefore, the Two-Growth DCF model is also
19		designed to account for growth rates that may not be sustainable in the long-term.
20		

 ⁹⁹ Docket No. G011/GR-15-736, Findings of Fact, Conclusions and Order, at 20. (Emphasis added)
 ¹⁰⁰ Docket No. G011/GR-15-736, Findings of Fact, Conclusions and Order, at 20

1 Second, as shown in Exhibit (Bulkley), Direct Schedule 7, the difference 2 between the first stage and second stage growth rate for my Two-Growth DCF model was 1 basis point (i.e., 5.75 percent (first-stage growth rate) and 5.76 percent 3 (second stage growth rate)). Given the small difference between the first stage and 4 5 second stage growth rate in my Two-Growth DCF model, there was no need to use 6 a Multi-Stage model to gradually transition the short-term and long-term growth 7 rates. 8 9 Finally, in its order in Docket No. G-011/GR-15-736 for MERC, the Commission 10 noted that it preferred the DCF model to other models such as the CAPM and the Risk Premium because the DCF model required fewer subjective judgements.¹⁰¹ 11 12 According to the Commission, there is a general consensus around two of the three inputs (i.e., stock prices and dividends) to the DCF model and while there may not 13 14 be general consensus around the third input, projected growth rates, the 15 Commission noted those differences were limited since growth rates are sourced from a small set of "recognized professional resources."¹⁰² The consideration of 16 17 the Multi-Stage model would increase the number of subjective judgements in the 18 DCF model as analysts would debate both the selection of the short-term (i.e. first 19 stage) and long-term (i.e., third stage) growth rates.

¹⁰¹ Docket No. G011/GR-15-736, Findings of Fact, Conclusions and Order, at 27.

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Ibid.

Q. Does the Two-Growth DCF model discussed above address your concern about low dividend yields?

A. No. While the Two-Growth DCF model provides for changes in growth over time, it does not address the low current dividend yields for utility stocks. As discussed earlier, currently low dividend yields are causing the DCF model to understate the cost of equity. Since the DCF model is understating the cost of equity, it is not appropriate to rely on the mean DCF result for the proxy group. As a result, I have considered the range of the mean to mean-high DCF results when determining the recommended ROE for Minnesota Power.

10 **D. Flotation Cost**

11 Q. What are flotation costs?

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

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

16 A. A regulated utility must have the opportunity to earn an ROE that is both 17 competitive and compensatory to attract and retain new investors. To the extent 18 that a company is denied the opportunity to recover prudently incurred flotation 19 costs, actual returns will fall short of expected (or required) returns, thereby diluting 20 equity share value.

Q. Are flotation costs part of the utility's invested costs or part of the utility's 2 expenses?

3 Flotation costs are part of the invested costs of the utility, which are properly A. 4 reflected on the balance sheet under "paid in capital." They are not current 5 expenses, and, therefore, are not reflected on the income statement. Rather, like 6 investments in rate base or the issuance costs of long-term debt, flotation costs are 7 incurred over time. As a result, the great majority of a utility's flotation cost is incurred prior to the test year but remains part of the cost structure that exists during 8 9 the test year and beyond, and as such, should be recognized for ratemaking 10 purposes. Therefore, it is irrelevant whether an issuance occurs during the test year or is planned for the test year because failure to allow recovery of past flotation 11 12 costs may deny Minnesota Power the opportunity to earn its required ROR in the 13 future.

14 Q. Please provide an example of why a flotation cost adjustment is necessary to 15 compensate investors for the capital they have invested.

16 A. Suppose ALLETE issues stock with a value of \$100, and an equity investor invests 17 \$100 in ALLETE in exchange for that stock. Further suppose that, after paying the 18 flotation costs associated with the equity issuance, which include fees paid to 19 underwriters and attorneys, among others, ALLETE ends up with only \$97 of 20 issuance proceeds, rather than the \$100 the investor contributed. ALLETE invests 21 that \$97 in plant used to serve its customers, which becomes part of rate base. 22 Absent a flotation cost adjustment, the investor will thereafter earn a return on only 23 the \$97 invested in rate base, even though she contributed \$100. Making a small

> Docket No. E015/GR-21-335 Bulkley Direct and Schedules

flotation cost adjustment gives the investor a reasonable opportunity to earn the
 authorized return, rather than the lower return that results when the authorized
 return is applied to an amount less than what the investor contributed.

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Q. Is the date of ALLETE's last issued common equity important in the determination of flotation costs?

- 6 A. No. As shown in Exhibit (Bulkley), Direct Schedule 5, ALLETE had an equity 7 issuance with two delayed draws in 2014 and 2015 and at-market-issuances of 8 common stock for each year between 2008 and 2017 and in 2021. The vintage of 9 the issuance, however, is not particularly important because the investor suffers a 10 shortfall in every year that he should have a reasonable opportunity to earn a return 11 on the full amount of capital that he has contributed. Returning to my earlier 12 example, the investor who contributed \$100 is entitled to a reasonable opportunity 13 to earn a return on \$100 not only in the first year after the investment, but in every 14 subsequent year in which he has the \$100 invested. Leaving aside depreciation, 15 which is dealt with separately, there is no basis to conclude that the investor is 16 entitled to earn a return on \$100 in the first year after issuance, but thereafter is 17 entitled to earn a return on only \$97. As long as the \$100 is invested, the investor 18 should have a reasonable opportunity to earn a return on the entire amount.
- 19 Q. Is the need to consider flotation costs recognized by the academic and financial
 20 communities?
- A. Yes. The need to reimburse shareholders for the lost returns associated with equity
 issuance costs is recognized by the academic and financial communities in the same

spirit that investors are reimbursed for the costs of issuing debt. This treatment is
 consistent with the philosophy of a fair ROR. According to Dr. Shannon Pratt:

3 Flotation costs occur when new issues of stock or debt are sold 4 to the public. The firm usually incurs several kinds of flotation 5 or transaction costs, which reduce the actual proceeds received 6 by the firm. Some of these are direct out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and 7 prospectus preparation costs. Because of this reduction in 8 9 proceeds, the firm's required returns on these proceeds equate to a higher return to compensate for the additional costs. 10 Flotation costs can be accounted for either by amortizing the 11 12 cost, thus reducing the cash flow to discount, or by incorporating the cost into the cost of capital. Because 13 flotation costs are not typically applied to operating cash flow, 14 one must incorporate them into the cost of capital.¹⁰³ 15

16 Q. Has the Commission previously recognized the need to include flotation costs?

- 17 A. Yes. The need to reimburse investors for equity issuance costs has been recognized
- by the Commission in many, although not all, previous decisions. ¹⁰⁴ My examination concludes that flotation costs are properly included in Minnesota
- 20 Power's ROE determination.

21 Q. How did you calculate the flotation costs for Minnesota Power?

- 22 A. My flotation cost calculation is based on the costs of issuing equity that were
- 23 incurred by ALLETE in its common equity issuances between 1977 and 2021.
- 24 Those issuance costs were applied to my proxy group. Based on the issuance costs

¹⁰³ Shannon P. Pratt, Cost of Capital Estimation and Applications, Second Edition, at 220-221.

¹⁰⁴ Docket No. E-001/GR-10-276, Findings of Fact, Conclusions, and Order, at 9; Docket No. E002/GR-10-971, Findings of Fact, Conclusions, and Order, at 8; Docket No. E002/GR-08-1065, Findings of Fact, Conclusions of Law, and Order, at 10-11; Docket No. E017/GR-07-1178, Findings of Fact, Conclusions of Law, and Order, at 57-58; Docket No. G004/GR-04-1487, Findings of Fact, Conclusions of Law and Order, at 11; Docket No. G004/GR-19-511, Findings of Fact, Conclusions and Order, at 18.

	provided in Exhibit(Bulkley), Direct Schedule 5, flotation costs for Minnesota
	Power are approximately 0.06 percent (i.e., 6 basis points) for the proxy group.
Q.	Do your final results include an adjustment for flotation cost recovery?
A.	Yes, consistent with the past precedent of the Commission, discussed above, I have
	adjusted the results of my DCF analyses to include flotation costs.
E	Discounted Cash Flow Model Results
Q.	How did you calculate the range of results for the Constant Growth DCF and
	Two-Growth DCF Models?
A.	I calculated the low result for my DCF models using the minimum growth rate (i.e.,
	the lowest of the First Call, Zacks, and Value Line earnings growth rates) for each
	of the proxy group companies. Thus, the low result reflects the minimum DCF
	result for the proxy group. I used a similar approach to calculate the high results,
	using the highest growth rate for each proxy group company. The mean results
	were calculated using the average growth rates from all sources.
Q.	Have you excluded any of the DCF results for individual companies in your
	proxy group?
A.	Yes, I have. It is appropriate to exclude Constant Growth and Two-Growth DCF
	results below a specified threshold at which equity investors would consider such
	Q. A. Q. A. A.

19 returns to provide an insufficient return increment above long-term debt costs.

Q. Why is it appropriate to exclude the DCF results for individual companies
 when developing the Two-Growth DCF model?

3 A. While the Two-Growth DCF model accounts for growth rates of individual 4 companies that may not be sustainable over the long-term, the individual DCF 5 results for the companies still must be reviewed to ensure the DCF results provide 6 a return increment sufficient to account for the additional risk of an equity 7 investment. For example, the Two-Growth DCF model would not account for a company that had a below-average dividend yield due to the stock having a high 8 9 valuation. The high valuation or high share price would result in a lower ROE 10 estimate produced by Two-Growth DCF model. If the valuation of the utility stock price is excessive it could produce a return low enough so as to not provide a 11 12 sufficient return increment for the added risk assumed by investors. Thus, it is still 13 important to review the individual DCF results for the proxy group companies when 14 estimating the Two-Growth DCF model.

15 Q. How did you determine the low-end threshold that would be used to evaluate 16 the DCF results for the individual companies in your proxy group?

A. The average credit rating for the companies in my proxy group is BBB+ from S&P
and Baa1 from Moody's. The average yield on Moody's Baa-rated utility bonds
for the 30 trading days ending August 31, 2021, was 3.19 percent.¹⁰⁵ As shown in
Exhibit (Bulkley), Direct Schedule 6 and Direct Schedule 7, I have eliminated
Constant Growth and Two-Growth DCF results lower than 7.00 percent because

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Source: Bloomberg Professional.

1		such returns would provide equity investors a risk premium only 381 basis points
2		above Baa-rated utility bonds.
3	Q.	Has the Department previously recognized the importance of excluding the
4		ROE results for individual companies that are unreasonably low?
5	A.	Yes. In Docket No. E017/GR-15-1033 for Otter Tail Power Company, Mr. Kundert
6		of the Department reasoned that:
7 8 9 10 11 12 13 14 15 16 17		Any method of estimating the required rate of return, including DCF analysis, must survive the test of reasonableness based on well-established financial principles. In a DCF analysis, the results should not be mechanically accepted if they violate well-accepted financial principles. For example, it is important for companies in the DOC proxy group to be financially viable because it is in the public interest, including the interest of ratepayers, for the utility to have a reasonable opportunity to recover its costs; setting the return on equity (ROE) too low would not give the utility a reasonable opportunity to finance the necessary capital improvements to its system. ¹⁰⁶
18		In that case, the Department determined the proxy group using a screening criterion
19		that eliminated companies that had a constant growth DCF result below a certain
20		threshold. The ROE threshold used was based on then-current market conditions
21		using the results of the CAPM model, which supported an ROE threshold of
22		7 percent. ¹⁰⁷
23		
24		In addition, I am aware that the Department also recognized the importance of
25		excluding the low ROE results of individual companies in Northern States Power

 ¹⁰⁶ Docket No. E017/GR-15-1033, Direct Testimony of John P. Kundert, August 16, 2016, at 11.
 ¹⁰⁷ *Id.*, at 13.

Minnesota's Docket Nos. E002/GR-13-868 and E002/GR-15-826. In those
 proceedings, the ROE thresholds used were 8 percent and 7 percent, respectively.¹⁰⁸

Q. Is your approach for excluding the DCF results for individual companies in your proxy group consistent with the approach applied by the Department?

5 A. Yes. The Department eliminated a company from the proxy group if the company's 6 ROE does not exceed a certain threshold. While I do not exclude the company 7 from the proxy group, I remove the specific DCF result for the company that is 8 below the ROE threshold, which as discussed above is 7 percent. For example, in 9 Exhibit (Bulkley), Direct Schedule 7, column 10, the mean Two-Growth DCF 10 result for IDACORP, Inc. was 6.77 percent, which was below the 7 percent ROE 11 threshold; therefore, the result was excluded from the proxy group average. While 12 the mean and low-end results for IDACORP, Inc. were excluded, the high-end 13 result for the company exceeds the 7 percent threshold and was included in proxy 14 group average. Thus, both approaches achieve the goal of excluding the results of 15 companies who have a DCF result that is below the threshold that equity investors 16 would consider a reasonable return to compensate for the risk of holding equity.

17

Q. Has the Commission considered a low-end threshold for ROE results?

- 18 A. Yes. In Docket No. E-002/GR-15-826 for Northern States Power Minnesota, the
- 19 Commission concluded that:

20The Settlement's ROE is significantly higher than the OAG's21recommended range of 7.07–8.14 percent. However, the OAG22fails to explain how its recommendation is reasonable or

¹⁰⁸ Docket No. E002/GR-15-826, Direct Testimony of Craig Addonizio, June 14, 2016, at 12-13; Docket No. E002/GR-13-868, Direct Testimony of Eilon Amit, June 5, 2014, at 17.

1 supportable in light of the overwhelming evidence of the range 2 of reasonable ROEs in the record. The Commission finds that 3 an ROE in the OAG's recommended range would not permit 4 Xcel to earn a return sufficient to induce investors to purchase company stock, given the risk associated with investing in an 5 electric utility.¹⁰⁹ 6 7 Thus, the Commission determined that an ROE in the range of 7.07 percent to 8 8.14 percent would not provide a sufficient risk premium to compensate investors 9 for the additional risk of an equity investment. Therefore, the low-end screen of 10 7.00 percent that I have applied to the individual results of my Constant Growth 11 DCF and Two-Growth DCF analyses is consistent with the Commission's past 12 decisions.

13 Q. What were the results of your DCF analyses?

14A.Figure 13 summarizes the results of my DCF analyses. As shown in Figure 13, the15mean DCF results range from 9.18 percent to 9.57 percent and the mean high results16are in the range of 9.87 percent to 10.31 percent. While I also summarize the mean17low DCF results, given the expected underperformance of utility stocks and thus18the likelihood that the DCF model is understating the cost of equity, I do not believe

19 it is appropriate to consider the mean low DCF results at this time.

¹⁰⁹

Docket No. E002/GR-15-826, Findings of Fact, Conclusions and Order, at 21.

	Mean Low	Mean	Mean High			
С	Constant Growth DCF ¹¹⁰					
30-Day Average	8.94%	9.39%	10.13%			
90-Day Average	9.20%	9.44%	10.18%			
180-Day Average	9.15%	9.57%	10.31%			
Two-Growth DCF ¹¹¹						
30-Day Average	8.81%	9.18%	9.87%			
90-Day Average	9.06%	9.24%	9.93%			
180-Day Average	9.03%	9.23%	10.06%			

Figure 13: Discounted Cash Flow Results

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

4 Since utility stocks are expected to underperform the broader market over the near-A. 5 term as interest rates increases, it is important to consider the results of the DCF 6 models with caution. This means that the results of the current DCF models are 7 below where they would otherwise be under more normal market conditions. 8 Therefore, while I considered the range of results produced by the Constant Growth 9 and Two-Growth DCF model, I also considered the results of the CAPM, ECAPM 10 and Bond Yield Plus Risk Premium analyses when determining where Minnesota 11 Power's ROE falls.

12 F. CAPM Analysis

13 **Q**. Please briefly describe the Capital Asset Pricing Model.

14 A. The CAPM is a risk premium approach that estimates the cost of equity for a given 15 security as a function of a risk-free return plus a risk premium to compensate 16 investors for the non-diversifiable or "systematic" risk of that security. This

¹¹⁰ See Exhibit (Bulkley), Direct Schedule 6. 111 See Exhibit

⁽Bulkley), Direct Schedule 7.

1	second component is the product of the market risk premium and the Beta
2	coefficient, which measures the relative riskiness of the security being evaluated.
3	The CAPM is defined by four components, each of which must theoretically be a
4	forward-looking estimate:
5 6	$K_e = r_f + \beta (r_m - r_f) $ [3] Where:
7	K_e = the required market ROE;
8	β = Beta coefficient of an individual security;
9	r_f = the risk-free rate of return; and
10	r_m = the required return on the market.
11 12	In this specification, the term $(r_m - r_f)$ represents the market risk premium. According to the theory underlying the CAPM, because unsystematic risk can be
13	diversified away, investors should only be concerned with systematic or non-
14	diversifiable risk. Non-diversifiable risk is measured by Beta, which is defined as:

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

15 The variance of the market return (i.e., Variance (r_m)) is a measure of the 16 uncertainty of the general market, and the covariance between the return on a 17 specific security and the general market (i.e., Covariance (r_e, r_m)) reflects the extent 18 to which the return on that security will respond to a given change in the general 19 market return. Thus, Beta represents the risk of the security relative to the general 20 market.

Q.

What risk-free rate did you use in your CAPM analysis?

2 A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds of 1.91 percent;¹¹² (2) the average 3 projected 30-year U.S. Treasury bond yield for Q4 2021 - Q4 2022 of 4 2.42 percent;¹¹³ and (3) the average projected 30-year U.S. Treasury bond yield for 5 2023 through 2027 of 3.50 percent.¹¹⁴ 6

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

8 Yes. Based on current market conditions, I place more weight on the results of the A. 9 projected yields on the 30-year Treasury bonds. As discussed previously, the 10 estimation of the cost of equity in this case should be forward-looking because it is 11 the return that investors would receive over the future rate period. Therefore, the 12 inputs and assumptions used in the CAPM analysis should reflect the expectations 13 of the market at that time. As discussed in Section V, long-term interest rates have 14 increased from the lows in August 2020 and are expected to continue to increase 15 over the near-term as the economy recovers from the COVID-19 recession and the 16 Federal Reserve begins to normalize monetary policy. Therefore, while I have 17 included the results of a CAPM analysis that relies on the current average risk-free 18 rate, this analysis fails to take into consideration the effect of the market's 19 expectations for interest rate increases on the cost of equity.

¹¹² Bloomberg Professional as of August 31, 2021.

¹¹³ Blue Chip Financial Forecasts, Vol. 40, No. 9, September 1, 2021, at 2. 114

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

Q.

What Beta coefficients did you use in your CAPM analysis?

A. As shown on Exhibit (Bulkley), Direct Schedule 8, I used the Beta coefficients
for the proxy group companies as reported by Bloomberg and Value Line. The
Beta coefficients reported by Bloomberg were calculated using ten years of weekly
returns relative to the S&P 500 Index. Value Line's calculation is based on five
years of weekly returns relative to the New York Stock Exchange Composite Index.

Additionally, as shown in Exhibit (Bulkley), Direct Schedule 9, I also considered an additional CAPM analysis which relies on the long-term average utility Beta coefficient for the companies in my proxy group. The long-term average utility Beta coefficient was calculated as an average of the Value Line Beta coefficients for the companies in my proxy group from 2011 through 2020.

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

13 A. I estimated the Market Risk Premium ("MRP") as the difference between the 14 implied expected equity market return and the risk-free rate. The expected return 15 on the S&P 500 Index is calculated using the Constant Growth DCF model 16 discussed earlier in my testimony for the companies in the S&P 500 Index for which 17 dividend yields and Value Line long-term earnings projections are available. 18 Based on an estimated market capitalization-weighted dividend yield of 19 1.34 percent and a weighted long-term growth rate of 13.13 percent, the estimated 20 required market return for the S&P 500 Index is 14.56 percent. The implied market 21 risk premium over the current 30-day average of the 30-year U.S. Treasury bond yield, and projected yields on the 30-year U.S. Treasury bond, ranges from
 11.06 percent to 12.64 percent.

3 Q. Has the Commission considered the use of a forward-looking MRP?

4 Yes, they have. For example, the DOC relied on a forward-looking market return A. 5 (estimated using a Constant Growth DCF model) in the CAPM for Great Plains 6 (Docket No. G-004/GR-19-511). Specifically, the DOC used the dividend yield 7 reported by S&P for the S&P 500 and the three- to five-year earnings growth 8 estimate for the State Street Global Advisors S&P 500 ETF, which resulted in a projected market return of 13.44 percent.¹¹⁵ The DOC has historically relied on 9 10 the Constant Growth DCF model to estimate a forward-looking market return for 11 the CAPM, and that market return has been considered by the Commission in prior proceedings.116 12

Q. How does the current expected market return of 13.70 percent compare to observed historical market returns?

A. Given the range of annual equity returns that have been observed over the past 94
years (shown in Figure 14 below), a current expected return of 14.56 percent is not
unreasonable. In 46 of the past 94 years (i.e., in approximately half of all
observations), the realized total equity return was at least 14.56 percent or greater.

¹¹⁵ Docket No. G004/GR-19-511, Surrebuttal Testimony of Craig M. Addonizio (March 3, 2020) at Ex. DER-9, CMA-S-8.

See Docket No. E017/GR-15-1033, Findings of Fact, Conclusions and Order, May 1, 2017, at 54-56; and Docket No. E015/GR-16-664, Findings of Fact, Conclusions and Order, March 12, 2018, at 60-61.



Did you consider another form of the CAPM in your analysis? 4 **Q**.

5 Yes, I did. I have also considered the results of an Empirical CAPM ("ECAPM")¹¹⁸ A. 6 in estimating the cost of equity for Minnesota Power. The ECAPM calculates the 7 product of the adjusted Beta coefficient and the market risk premium and applies a 8 weight of 75.00 percent to that result. The model then applies a 25.00 percent 9 weight to the market risk premium, without any effect from the Beta coefficient. 10 The results of the two calculations are summed, along with the risk-free rate, to 11 produce the ECAPM result, as noted in Equation [5] below:

12
$$k_{\rm e} = r_{\rm f} + 0.75\beta(r_{\rm m} - r_{\rm f}) + 0.25(r_{\rm m} - r_{\rm f})$$
 [5]

94

¹¹⁷ Depicts total annual returns on large company stocks, as reported in the 2020 Duff & Phelps SBBI Yearbook. See e.g., Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 189.

¹¹⁸

1		Where:
2		k_e = the required market ROE;
3		β = Adjusted Beta coefficient of an individual security;
4		rf = the risk-free rate of return; and
5		r_m = the required return on the market as a whole.
6		In essence, the Empirical form of the CAPM addresses the tendency of the
7		"traditional" CAPM to underestimate the cost of equity for companies with low
8		Beta coefficients such as regulated utilities. In that regard, the ECAPM is not
9		redundant to the use of adjusted Betas; rather, it recognizes the results of academic
10		research indicating that the risk-return relationship is different (in essence, flatter)
11		than estimated by the CAPM, and that the CAPM underestimates the "alpha," or
12		the constant return term. ¹¹⁹
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
15		as the risk-free rate, and the Bloomberg, Value Line and long-term average Beta
16		coefficients.
17	Q.	What are the results of your CAPM and ECAPM analyses?
18	А.	As shown in Figure 15 (see also Exhibit (Bulkley), Schedules 8 and 9), my

19 CAPM analysis produces a range of returns from 10.90 percent to 13.19 percent.

¹¹⁹ *Id.* at 191.

2

- My ECAPM analysis produces a range of returns from 11.82 percent to 13.53 percent.
- 3

	Current Risk-Free Rate (1.91%)	Q4 2021–Q4 2022 Projected Risk-Free Rate (2.42%)	2023-2027 Projected Risk-Free Rate (3.50%)
	САРМ		
Value Line Beta	13.00%	13.06%	13.19%
Bloomberg Beta	11.92%	12.03%	12.25%
Long-term Avg. Beta	10.90%	11.05%	11.36%
	ECAPM		
Value Line Beta	13.39%	13.43%	13.53%
Bloomberg Beta	12.58%	12.66%	12.83%
Long-term Avg. Beta	11.82%	11.93%	12.16%

4 G. Bond Yield Plus Risk Premium Analysis

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

6 A. In general terms, this approach is based on the fundamental principle that equity 7 investors bear the residual risk associated with equity ownership and therefore 8 require a premium over the return they would have earned as a bondholder. That 9 is, because returns to equity holders have greater risk than returns to bondholders, 10 equity investors must be compensated to bear that risk. Risk premium approaches, 11 therefore, estimate the cost of equity as the sum of the equity risk premium and the 12 yield on a particular class of bonds. In my analysis, I used actual authorized returns 13 for electric utility companies as the historical measure of the cost of equity to 14 determine the risk premium.

96

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

3 Yes. It is important to recognize both academic literature and market evidence A. 4 indicating that the equity risk premium (as used in this approach) is inversely 5 related to the level of interest rates. That is, as interest rates increase (decrease), 6 the equity risk premium decreases (increases). Consequently, it is important to 7 develop an analysis that: (1) reflects the inverse relationship between interest rates and the equity risk premium; and (2) relies on recent and expected market 8 9 conditions. Such an analysis can be developed based on a regression of the risk 10 premium as a function of U.S. Treasury bond yields. If we let authorized ROEs for electric utilities serve as the measure of required equity returns and define the yield 11 12 on the long-term U.S. Treasury bond as the relevant measure of interest rates, the risk premium simply would be the difference between those two points.¹²⁰ 13

14 **Q.**

Is the Bond Yield Plus Risk Premium analysis relevant to investors?

A. Yes. Investors are aware of ROE awards in other jurisdictions, and they consider
 those awards as a benchmark for a reasonable level of equity returns for utilities of
 comparable risk operating in other jurisdictions. Because my Bond Yield Plus Risk
 Premium analysis is based on authorized ROEs for utility companies relative to

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		corresponding Treasury yields, it provides relevant information to assess the return
2		expectations of investors.
3	Q.	What did your Bond Yield Plus Risk Premium analysis reveal?
4	A.	As shown in Figure 16 below, from 1992 through August 2021, there was a strong
5		negative relationship between risk premia and interest rates. To estimate that
6		relationship, I conducted a regression analysis using the following equation:
7 8		RP = a + b(T) [6] Where:
9		RP = Risk Premium (difference between allowed ROEs and the yield on 30
10		year U.S. Treasury bonds)
11		a = intercept term
12		b = slope term
13		T = 30-year U.S. Treasury bond yield
14		Data regarding allowed ROEs were derived from 663 vertically integrated electric
15		utility rate cases from 1992 through August 2021 as reported by Regulatory
16		Research Associates. ¹²¹ This equation's coefficients were statistically significant
17		at the 99.00 percent level.

¹²¹ This analysis began with a total of 1,313 cases and was screened to eliminate limited issue rider cases, transmission-only cases, distribution cases and cases that were silent with respect to the authorized ROE. After applying those screening criteria, the analysis was based on data for 663 cases.



5.00%

U.S. Government 30-year Treasury Yield

6.00%

1

23

4.00%

3.00%

2.00%

2.00%

3.00%

4 As shown on Exhibit (Bulkley), Direct Schedule 12, based on the current 30-5 day average of the 30-year U.S. Treasury bond yield (i.e., 1.91 percent), the risk 6 premium would be 7.58 percent, resulting in an estimated ROE of 9.50 percent. 7 Based on the near-term (Q4 2021 – Q4 2022) projections of the 30-year U.S. 8 Treasury bond yield (i.e., 2.42 percent), the risk premium would be 7.29 percent, 9 resulting in an estimated ROE of 9.71 percent. Based on longer-term (2023-2027) 10 projections of the 30-year U.S. Treasury bond yield (i.e., 3.50 percent), the risk 11 premium would be 6.67 percent, resulting in an estimated ROE of 10.17 percent.

4.00%

12 Q. How did the results of the Bond Yield Risk Premium inform your 13 recommended ROE for Minnesota Power?

A. I have considered the results of the Bond Yield Risk Premium analysis in setting
 my recommended ROE for Minnesota Power. As noted above, investors will
 consider the ROE award of a company when assessing the risk of that company as

7.00%

8.00%

compared to utilities of comparable risk operating in other jurisdictions. The risk
 premium analysis takes into account this comparison by estimating the return
 expectations of investors based on the current and past ROE awards of electric
 utilities across the U.S.

5 IX. CAPITAL STRUCTURE

6 Q. Is the capital structure of the Company an important consideration in the 7 determination of the appropriate ROE?

8 A. Yes, it is. Assuming other factors equal, a higher debt ratio increases the risk to 9 investors. For debt holders, higher debt ratios result in a greater portion of the 10 available cash flow being required to meet debt service, thereby increasing the risk 11 associated with the payments on debt. The result of increased risk is a higher 12 interest rate. The incremental risk of a higher debt ratio is more significant for 13 common equity shareholders, who are the residual claimants on the cash flow of 14 the Company. Therefore, the greater the debt service requirement, the less cash 15 flow is available for common equity holders.

16 Q. What is Minnesota Power's proposed capital structure?

A. As described by Company witness Mr. Patrick Cutshall, the Company's proposal
is to establish a capital structure consisting of 53.81 percent common equity and
46.19 percent long-term debt for the year ending December 31, 2022.

2

Q.

How does the business risk of vertically-integrated electric utilities compare to the business risk of other regulated utilities?

- A. According to Moody's, generation ownership causes vertically-integrated electric
 utilities to have higher business risk than either electric transmission and
 distribution companies, or natural gas distribution or transportation companies.¹²²
 As a result of this higher business risk, integrated electric utilities typically require
 a higher percentage of equity in the capital structure than other electric or gas
 utilities.
- 9

10

Q.

Did you conduct any analysis to determine if the requested equity ratio was reasonable?

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

16 Q. Please discuss your analysis of the capital structures of the proxy group 17 companies.

18 A. I calculated the mean proportions of common equity, long-term debt, short-term
 19 debt and preferred equity over the most recent eight quarters¹²³ for each of the

¹²² Moody's, Rating Methodology: Electric and Gas Utilities, December 23, 2013, at 23-24.

¹²³ 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 companies in my proxy group at the operating subsidiary level. My analysis of the 2 capital structures of the companies in the proxy group is provided in Exhibit (Bulkley), Direct Schedule 13. As shown in that Schedule, the mean 3 4 equity ratio for the proxy group at the operating utility company level is 52.05 5 percent. The average equity ratios for the utility operating companies held by the 6 proxy group range from a low of 46.90 percent to a high of 59.79 percent. 7 Minnesota Power's proposed equity ratio of 53.81 percent is well within the range 8 of equity ratios for the utility operating subsidiaries of the proxy group companies 9 and is therefore reasonable.

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

12 A. Yes. The credit rating agencies' response to the TCJA must also be considered 13 when determining the equity ratio. As discussed previously in my testimony, all 14 three rating agencies have noted that the TCJA has negative implications for utility 15 cash flows. S&P and FitchRatings have specifically identified increasing the equity 16 ratio as one approach to ensure that utilities have sufficient cash flows following 17 the tax cuts and the loss of bonus depreciation. Furthermore, Moody's downwardly 18 revised the rating outlook for the entire utilities sector in June 2018 and (as 19 discussed in Section V of my Direct Testimony) has continued to downgrade the 20 ratings of utilities based in part on the negative effects of the TCJA on cash flows. 21

1	Additionally, it is also important to consider the negative effects of COVID-19 on
2	the credit metrics of utilities. In April 2020, S&P's downwardly revised the outlook
3	on the entire North American utilities sector and noted that COVID-19 would create
4	incremental pressure on credit metrics and that a recession would lead to an
5	increasing number of credit rating downgrades and negative outlooks. ¹²⁴ In fact, as
6	noted above, S&P downgraded ALLETE in April 2020 in part because S&P
7	expected the Company's credit metrics to be negatively affected by the weaker
8	economic conditions due to COVID-19. ¹²⁵
9	
10	Finally, S&P has continued to maintain a negative outlook for the utility industry
11	in 2021 noting that so far in 2021 downgrades have outpaced upgrades with the
12	median rating of the industry approaching the BBB category which would be the
13	first time that has ever occurred. ¹²⁶ S&P expects continued pressure on cash flows
14	over the near-term as utilities continue to increase leverage to fund capital
15	expenditure plans necessary to reduce greenhouse gas emission and improve safety
16	and reliability. ¹²⁷ The credit ratings agencies' continued concerns over the negative
17	effects of the TCJA, COVID-19 and increased capital expenditures, underscores
18	the importance of maintaining adequate cash flow metrics for the industry. This is
19	also particularly important for Minnesota Power since the Company was recently

¹²⁷ *Ibid*.

¹²⁴ Standard & Poor's Ratings Direct, COVID-19: The Outlook for North American Regulated Utilities Turns Negative, April 2, 2020.

¹²⁵ S&P Global Ratings, "Research Update: ALLETE Inc. Downgraded To 'BBB' On Expected Weaker Financial Measures; Outlook Stable," April 22, 2020.

 ¹²⁶ S&P Global Ratings, "North American Regulated Utilities' Credit Quality Begins the Year on A Downward Path," April 7, 2021.

downgraded by Moody's due, in part, to the effect of the TCJA and S&P due, in
 part, to the effect of COVID-19.

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

- A. Yes. The equity ratio is the primary indicator of financial risk for a regulated utility
 such as Minnesota Power. To the extent the equity ratio is reduced, it is necessary
 to increase the authorized ROE to compensate investors for the greater financial
 risk associated with a lower equity ratio.
- 8 Q. Will the capital structure and ROE authorized in these proceedings affect the
 9 Company's access to capital at reasonable rates?
- A. Yes. The level of earnings authorized by the Commission directly affects the
 Company's ability to fund their operations with internally generated funds. Both
 bond investors and rating agencies expect a significant portion of ongoing capital
 investments to be financed with internally generated funds.
- 14

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

3 Q. What is your conclusion regarding an appropriate capital structure for 4 Minnesota Power?

5 A. Considering the actual capital structures of the proxy group operating companies, I 6 believe that Minnesota Power's proposed common equity ratio of 53.81 percent is 7 reasonable. The proposed equity ratio is well within the range established by the 8 capital structures of the utility operating subsidiaries of the proxy companies. In 9 addition, it is reasonable to rely on a higher equity ratio than the Company may 10 have relied on in prior cases as a result of the cash flow concerns raised by credit rating agencies as a result of the TCJA, COVID-19 and increased capital 11 12 expenditures.

13 X. CONCLUSIONS AND RECOMMENDATION

14 Q. What is your conclusion regarding a fair ROE for Minnesota Power?

15 A. Figure 17 below provides a summary of my analytical results. Given the current 16 high valuations of utilities and the expectation that the utility sector will 17 underperform over the near-term, I placed greater weight on the mean-high 18 Constant Growth and Two-Growth DCF results which ranged from 9.87 percent to 19 10.31 percent. Further, considering the divergence between the CAPM and DCF 20 model results and the fact that the CAPM results are more reflective of prospective 21 market conditions through the use of projected interest rates and a forward-looking 22 MRP, I concluded that it is reasonable for the high-end of the recommended range
1 to exceed the range produced by the DCF model. As a result, I believe an ROE 2 range from 9.90 to 10.50 percent is reasonable. However, in light of the increased risk faced by the Company compared to the proxy group due to Minnesota Power's 3 4 high degree of customer concentration in industrial customers operating in cyclical 5 industries and increased regulatory risk associated with operating in Minnesota, it 6 is reasonable to place the requested ROE for Minnesota Power towards the high 7 end of this range. Therefore, it is my view that the Company's requested ROE of 10.25 percent is reasonable and would fairly balance the interests of customers and 8 9 shareholders. This ROE would enable the Company to maintain its financial 10 integrity and therefore its ability to attract capital at reasonable rates under a variety of economic and financial market conditions, while continuing to provide safe, 11 12 reliable and affordable electric utility service to customers in Minnesota.

	Constant Grow	th DCF	
	Mean Low	Mean	Mean High
30-Day Average Price	8.94%	9.39%	10.13%
90-Day Average Price	9.20%	9.44%	10.18%
180-Day Average Price	9.15%	9.57%	10.31%
	Two-Growth	DCF	
	Mean Low	Mean	Mean High
30-Day Average Price	8.81%	9.18%	9.87%
90-Day Average Price	9.06%	9.24%	9.93%
180-Day Average Price	9.03%	9.23%	10.06%
(Capital Asset Pric	ing Model	
		Q4 2021 – Q4	2023-2027
	Current Risk-	2022 Projected	Projected Risk-
	Free Rate	Risk-Free Rate	Free Rate
	(1.91%)	(2.42%)	(3.50%)
Value Line Beta	13.00%	13.06%	13.19%
Bloomberg Beta	11.92%	12.03%	12.25%
Long-term Average Beta	10.90%	11.05%	11.36%
Empir	ical Capital Asse	t Pricing Model	
Value Line Beta	13.39%	13.43%	13.53%
Bloomberg Beta	12.58%	12.66%	12.83%
Long-term Average Beta	11.82%	11.93%	12.16%
Bo	nd Yield Plus Ri	sk Premium	
		Q4 2021 – Q4	2023-2027
	Current Risk-	2022 Projected	Projected Risk-
	Free Rate	Risk-Free Rate	Free Rate
	(1.91%)	(2.42%)	(3.50%)
Risk Premium Results	9.50%	9.71%	10.17%

Figure 17: Summary of Analytical Results¹²⁸

2

3 Q. What is your conclusion with respect to Minnesota Power's proposed capital

4 structure?

5

A. My conclusion is that Minnesota Power's proposal to establish a capital structure

- 6
- consisting of 53.81 percent common equity and 46.19 percent long-term debt is

¹²⁸ The analytical results included in Figure 17 reflect the results of the Constant Growth DCF and the Two-Growth DCF analyses excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent.

- 1 reasonable taking into consideration the range set by the proxy companies, and the
- 2 effect of the TCJA and COVID-19 on the cash flows.

3 Q. Does this conclude your Direct Testimony?

4 A. Yes, it does.

	Constant Growth	DCF	
	Mean Low	Mean	Mean High
30-Day Average	8.94%	9.39%	10.13%
90-Day Average	9.20%	9.44%	10.18%
180-Day Average	9.15%	9.57%	10.31%
Constant Growth Average	9.10%	9.46%	10.21%
	Two-Growth D	CF	
	Mean Low	Mean	Mean High
30-Day Average	8.81%	9.18%	9.87%
90-Day Average	9.06%	9.24%	9.93%
180-Day Average	9.03%	9.23%	10.06%
Two-Stage Average	8.97%	9.22%	9.96%
	САРМ		
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	13.00%	13.06%	13.19%
Bloomberg Beta	11.92%	12.03%	12.25%
Long-Term Avg. Beta	10.90%	11.05%	11.36%
	ECAPM		
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	13.39%	13.43%	13.53%
Bloomberg Beta	12.58%	12.66%	12.83%
Long-Term Avg. Beta	11.82%	11.93%	12.16%
	Risk Premiur	n	
	Current 30-day	Near-Term Blue	Long-Term Blue
	Average Treasury	Chip Forecast	Chip Forecast
Pick Promium Posulta		1 IEIQ	10 17%
	9.0070	9.11/0	10.1770

SUMMARY OF ROE ANALYSES RESULTS AS OF AUGUST 31, 2021¹

Notes:

[1] The analytical results included in the table reflect the results of the Constant Growth, and the Two-Growth analyses 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]
					Positive Growth Rates						
					from at least two						
			S&P Credit Rating		sources (Value Line,	Generation	% Regulated Coal	% Company-	% Regulated	% Regulated	
			Between BBB-	Covered by More	Yahoo! First Call, and	Assets Included	Generation	Owned	Operating Income	Electric Operating	
Company		Dividends	and AAA	Than 1 Analyst	Zacks)	in Rate Base	Capacity > 5%	Generation > 30%	> 60%	Income > 60%	Announced Merger
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%	100.00%	No
CMS Energy Corporation	CMS	Yes	BBB+	Yes	Yes	Yes	23.18%	39.51%	91.37%	71.00%	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%	65.18%	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
Pinnacle West Capital Corporation	PNW	Yes	A-	Yes	Yes	Yes	25.20%	78.03%	100.00%	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:

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] to [6] Source: S&P Capital IQ Pro [7] S&P Capital IQ Pro [8] to [9] Source: Form 10-Ks for 2020, 2019, and 2018 [10] SNL Financial News Releases

MP Exhibit___(Bulkley) Direct Schedule 2 Docket No. E015/GR-21-335 Page 1 of 1

COMPARISON OF MINNESOTA POWER AND PROXY GROUP COMPANIES RISK ASSESSMENT

			[1]	[2]	[3]	[4]	[5]	[6]	[7]
						Non-Volume	etric Rate Design		Capital Cost Recovery
Proxy Group Company	Operation State	Operation	Test Year	Rate Base	Revenue Decoupling	Formula-based rates	Straight Fixed-Variable Rate Design	Non-Volumetric Rate Design	Mechanism
Alliant Energy Corporation	lowa	Electric	Historical	Average	No	No	No	No	No
	lowa	Gas	Historical	Average	No	No	No	No	No
	Wisconsin	Electric	Fully Forecast	Average	No	No	No	No	No
	Wisconsin	Gas	Fully Forecast	Average	No	No	No	No	No
Ameren Corporation	Illinois	Electric	Historical	Year End	No	Yes	No	Yes	No
	Illinois	Gas	Fully Forecast	Average	Partial	No	No	Yes	Yes
	Missouri	Electric	Historical	Year End	Partial	No	No	Yes	Yes
	Missouri	Gas	Historical	Year End	Partial	No	No	Yes	Yes
American Electric Power Company, Inc.	Arkansas	Electric	Historical	Year End	Partial	Yes	No	Yes	Yes
	Indiana	Electric	Fully Forecast	Year End	Partial	NO	No	Yes	Yes
	Кепшску	Electric	Fully Forecast	Year End	Partial	NO	NO	Yes	NO
	Louisiana	Electric	Historical Fully Forecast		Partial	res	NO	Yes	NO
	Obio	Electric	Partially Forecast	Average Vear End	Partial	No	No	NO	NO
	Oklahoma	Electric	Historical	Year End	Partial	No	No	Yes	Yes
	Tennessee	Electric	Fully Forecast	Average	No	No	No	No	No
	Texas	Electric	Historical	Year End	No	No	No	No	Yes
	Virginia	Electric	Historical	Year End	No	No	No	No	Yes
	West Virginia	Electric	Historical	Average	No	No	No	No	No
Avista Corporation	Alaska	Electric	Historical	Average	No	No	No	No	No
·	Idaho	Electric	Historical	Year End	Full	No	No	Yes	No
	Idaho	Gas	Historical	Year End	Full	No	No	Yes	No
	Oregon	Gas	Fully Forecast	Year End	Full	No	No	Yes	No
	Washington	Electric	Historical	Average	Partial	No	No	Yes	No
	Washington	Gas	Historical	Average	Partial	No	No	Yes	No
CMS Energy Corporation	Michigan	Electric	Fully Forecast	Average	No	No	No	No	No
	Michigan	Gas	Fully Forecast	Average	Partial	No	No	Yes	Yes
Duke Energy Corporation	Florida	Electric	Fully Forecast	Year End	No	No	No	No	Yes
	Indiana	Electric	Historical	Year End	Partial	No	No	Yes	Yes
	Kentucky	Electric	Fully Forecast	Average	Partial	No	No	Yes	No
	Kentucky	Gas	Fully Forecast	Average	Partial	No	No	Yes	No
	North Carolina	Electric	Historical	Year End	No	No	No	No	No
	North Carolina	Gas	Historical Dentially Fanagast	Year End	Full	No	No	Yes	Yes
	Ohio	Electric	Partially Forecast	Year End	Partial	NO	No	Yes	Yes
	Onio South Carolina	Gas		Year End	No	NO	res No	Yes	Yes
	South Carolina	Electric	Historical	Year End	NO Partial	NO	No	NO	No
	Tennessee	Gas	Fully Forecast		Partial	No	No	Ves	NU Ves
Entergy Corporation	Arkansas	Gas Electric	Fully Forecast	Average	Partial	Ves	No	Ves	Ves
Energy corporation	Louisiana-NOCC	Electric	Historical	Average	Partial	Yes	No	Yes	Yes
	Louisiana-NOCC	Gas	Historical	Average	No	Yes	No	Yes	No
	Louisiana	Electric	Historical	Average	Partial	Yes	No	Yes	Yes
	Louisiana	Gas	Historical	Average	Partial	Yes	No	Yes	Yes
	Mississippi	Electric	Fully Forecast	Average	Partial	Yes	No	Yes	No
	Texas	Electric	Historical	Year End	No	No	No	No	Yes
Evergy, Inc.	Kansas	Electric	Historical	Year End	Partial	No	No	Yes	Yes
	Missouri	Electric	Historical	Year End	Partial	No	No	Yes	Yes
IDACORP, Inc.	Idaho	Electric	Partially Forecast	Year End	Full	No	No	Yes	No
	Oregon	Electric	Partially Forecast	Average	No	No	No	No	No
MGE Energy, Inc.	Wisconsin	Electric	Fully Forecast	Average	No	No	No	No	No
	Wisconsin	Gas	Fully Forecast	Average	No	No	No	No	No
NextEra Energy, Inc.	Florida	Electric	Fully Forecast	Average	No	No	No	No	Yes
	Florida	Gas	Fully Forecast	Average	No	No	No	No	Yes
	Texas	Electric	Historical	Average	No	No	No	No	Yes
NorthWestern Corporation	Montana	Electric	Historical	Average	Partial	No	No	Yes	No
	Montana	Gas	Historical	Average	No	No	No	No	No
	Nebraska	Gas	Historical	Year End	No	No	No	No	No
	South Dakota	Electric	Historical	Average	No	No	No	No	No
	South Dakota	Gas	Historical	Average	No	No	No	No	No
Otter Tail Corporation	Minnesota		Fully Forecast	Average	No	No	No	No	No
Disperale West Constal Commenting				Average	NO	No	No	No	Yes
Pinnacie west Capital Corporation	Arizona			Year End	Partial	No	No	Yes	NO
Fortiand General Electric Company	Alabama		Fully Forecast			INO Maa	INO No	Yes	Yes
	Georgia	Electric	Fully Forecast	Average	INU No	res	INO No	r es	r es Voc
	Georgia	Gas	Fully Forecast	Average	NO No	Tes Voc		Tes Voc	T es Voc
	Georgia	Gas	Fully Forecast	Average	INU	res	res	res	Tes

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COMPARISON OF MINNESOTA POWER AND PROXY GROUP COMPANIES **RISK ASSESSMENT**

	[1]		[2]	[3]		[4]		[5]		[6]		[7]		
						_		N	Ion-Volume	tric Rate Design				Qowital Qo	
Proxy Group Company	Operation State	Operation	Test Year	Rate	e Base	Revenue I	ecoupling	Formula-ba	ased rates	Straight Fixed- Rate Desi	Variable gn	Non-Volu De	netric Rate sign	Capital Co Meci	st Recovery nanism
	Illinois	Gas	Fully Forecast		Average		Partial		No		No		Yes		Yes
	Mississippi	Electric	Fully Forecast		Year End		Partial		Yes		No		Yes		No
	Tennessee	Gas	Fully Forecast		Average		Partial		Yes		No		Yes		No
	Virginia	Gas	Historical		Average		Partial		No		No		Yes		Yes
Xcel Energy Inc.	Colorado	Electric	Historical		Average		Partial		No		No		Yes		Yes
	Colorado	Gas	Historical		Year End		Partial		No		No		Yes		Yes
	Minnesota	Electric	Fully Forecast		Average		Partial		Yes		No		Yes		No
	Minnesota	Gas	Fully Forecast		Average		No		No		No		No		Yes
	New Mexico	Electric	Historical		Year End		No		No		No		No		No
	North Dakota	Electric	Fully Forecast		Average		No		No		No		No		No
	North Dakota	Gas	Fully Forecast		Average		No		No		Yes		Yes		No
	South Dakota	Electric	Historical		Average		Partial		No		No		Yes		Yes
	Texas	Electric	Historical		Year End		No		No		No		No		Yes
	Wisconsin	Electric	Fully Forecast		Average		No		No		No		No		No
	Wisconsin	Gas	Fully Forecast		Average		No		No		No		No		No
						Revenue I	Decoupling	Formula-ba	ased rates	SFV Rates D	esign	Non-Volumeti	ic Rate Design	Capital Co	est Recovery
Proxy Group Average		Fully Forecast	35	Year End	33	Full	5	Yes	15	Yes	3	Yes	48	Yes	38
		Partially Forecast	5	Average	48	Partial	36	No	66	No	78	No	33	No	43
		Historical	41	-		No	40								
		Forecast	49.38%	Year End	40.74%	RDM	50.62%	Yes	18.52%	Yes 3	3.70%	Yes	59.26%	CCRM	46.91%
Minnesota Power [5]	Minnesota	Electric	Fully Forecast		Average		Proposed		No		No		Proposed		Yes

Notes:

Notes: [1] Sources: "Alternative Regulation for Evolving Utility Challenges," Prepared by Pacific Economics Group Research for Edison Electric Institute, Table 6, November 2015; S&P RRA Research. [2] Sources: Regulatory Research Associates, effective as of June 30, 2021 [3] Sources: S&P Capital IQ Pro, 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 Capital IQ Pro. [4] Sources: Company Form 10-K, Company Tariffs, S&P Capital IQ Pro. [5] Sources: Company Form 10-K, Company Tariffs, S&P Capital IQ Pro. [6] Equals IF(AND([3]=No, [6]=No), No, Yes) [7] Sources: 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 Capital IQ Pro. [7] Sources: Company Form 10-K, Company Tariffs, S&P Capital IQ Pro [6] Equals IF(AND([3]=No, [6]=No), No, Yes)

[7] Sources: S&P Capital IQ Pro, Regulatory Focus: Adjustment Clauses, dated November 12, 2019. Operating subsidiaries not covered in this report were excluded from this exhibit. [8] Data provided by Minnesota Power

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COMPARISON OF MINNESOTA POWER AND PROXY GROUP COMPANIES FIXED COST RECOVERY - RESIDENTIAL RATE CLASS

[1]

Proxy Group Company	Operating Subsidiary	Operation State	Operation		Custor	ner Charge	e (per month)	Source
liant Energy Corporation	Interstate Power & Light Company	Iowa	Electric	1		\$	13.00	Electric Residential Service
5,	Interstate Power & Light Company	lowa	Gas	1		\$	13.00	Gas Residential Service
	Wisconsin Power & Light Company	Wisconsin	Electric	1	[3]	\$	15.00	RG-1, Sheet 3.10
	Wisconsin Power & Light Company	Wisconsin	Gas	1	[3]	\$	12.51	GG-1, Sheet 22.00
eren Corporation	Ameren Illinois Company	Illinois	Electric	1	[2]	\$	11 04	DS-1 (Residential)
	Ameren Illinois Company	Illinois	Gas	1	[-]	\$	18 76	Rate GDS-1 - Residential Gas Delivery Service
	Union Electric Company	Missouri	Electric	1		\$	9.06	Residential Service Rate 4th Revised Sheet No. 54
	Union Electric Company	Missouri	Gas	1		\$ \$	15.00	Residential Service Rate, 8th Revised Sheet No. 5
rican Electric Power Company, Inc.	Southwestern Electric Power Company	Arkansas	Electric	1		¢	10.00	Peridential Service Sheet No. P. 2.1
fican Electric Power Company, inc.	Indiana Michigan Power Company	Indiana	Electric	1		Ψ ¢	15.00	Tariff R S Original Sheet No. 4
	Kentucky Power Company	Kentucky	Electric	1		¢	17.50	Tariff B.S. 2nd Revised Sheet No. 6-1
	Southwastern Electric Bower Company	Louisiana	Electric	1		¢	5.40	Posidential Service Sheet No. 4-1
	Indiana Michigan Dower Company	Louisiana	Electric	1		φ ¢	5.49	Tariff BS, Original Shoet No. D 2.00
	Ohia Dawar Campany	Michigan	Electric	1		ф Ф	7.20	Cahadula DS, Oliginal Sheet No. D-2.00
	Onio Power Company	Onio	Electric	1		\$	8.40	Schedule RS, 6th Revised Sheet No. 210-1
	Public Service Company of Oklahoma	Oklahoma	Electric	1		\$	20.00	Schedule RS, 6th Revised Sheet No. 3-2
	Kingsport Power Company	Tennessee	Electric	1		\$	12.63	Tariff R.S., Original Sheet No. 3
	AEP Texas	Texas	Electric	1	[2]	\$	4.79	6.1.1.1.1 Residential Service, pp. 116
	Southwestern Electric Power Company	Texas	Electric	1		\$	8.00	RS, pp. 11 (Sheet No. IV-1)
	Appalachian Power Company	Virginia	Electric	1		\$	7.96	Schedule R.S., First Revision Sheet No. 4-1
	Appalachian Power Company	West Virginia	Electric	1		\$	12.00	Schedule R.S., Original Sheet No. 5-1
a Corporation	Alaska Electric Light and Power Company	Alaska	Electric	1		\$	8.60	aelp.com/Customer-Service/Rates-Billing/Current-Rates
	Avista Corporation	Idaho	Electric	1		\$	6.00	Schedule 1 Residential Service. Sheet 1
	Avista Corporation	Idaho	Gas	1		\$	6.00	Schedule 101
	Avista Corporation	Oregon	Gas	1		\$	10.50	Schedule 410
	Avista Corporation	Washington	Electric	1		\$	9.00	Schedule 1 Residential Service
	Avista Corporation	Washington	Gas	1		\$	9.50	Schedule 101, General Service
Epergy Corporation	Consumers Energy	Michigan	Electric	1		¢	8 00	Second Revised Sheet No. D. 14.00
Energy Corporation	Consumers Energy	Michigan	Gas	1		э \$	12.60	Second Revised Sheet No. D-14.00 Second Revised Sheet No. D-10.00 to D-11.00
ke Energy Corporation	Duke Energy Corporation	Florida	Electric	1		\$	11.52	Rate Schedule RS-1 Sheet No. 6.120
	Duke Energy Indiana	Indiana	Electric	1		\$	10.54	Rate RS, Sheet No, 6
	Duke Energy Kentucky	Kentucky	Electric	1		\$	12.60	Rate RS, Sheet No. 30
	Duke Energy Kentucky	Kentucky	Gas	1		\$	16.50	Rate RS, Sheet No. 30
	Duke Energy Carolinas	North Carolina	Electric	1		\$	14.00	Schedule RS Leaf No. 11
	Duke Energy Carolinas Diedmont Natural Cas Company	North Carolina	Cas	1		¢	10.00	Docket No. C 9 Sub 790, Pate 101
	Pleumont Natural Gas Company	Obio	Gas	1		φ ¢	10.00 6.00	Docket No. G-9 Sub 790, Rate 101
	Duke Energy Onio	Onio	Electric	1		Ф	0.00	Rate RS, Sheet No. 30.16
	Pledmont Natural Gas Company	Ohio	Gas	1		\$	33.03	Rate RS, Sheet No. 30.18
	Duke Energy Carolinas	South Carolina	Electric	1		\$	11.96	Schedule RS, Leaf No. 11
	Piedmont Natural Gas Company	South Carolina	Gas	1		\$ ¢	10.00	Docket No. 2006-401-G, Rate 201 Rate 301
	r ioumont natural Gas company	1611163366	043	I		Ψ	17.40	itale 301
rgy Corporation	Entergy Arkansas	Arkansas	Electric	1		\$	8.40	Docket No. 18-073-TF, Order No. 2, Sheet No. 1.1
	Entergy New Orleans	Louisiana-NOCC	Electric	1		\$	8.07	Schedule RES-25 Page 1.1 (Residential Electric Service)
	Entergy New Orleans	Louisiana-NOCC	Gas	1		\$	12.32	Schedule RGS-15 Page 1.1 (Residential Gas Service)
	Entergy Louisiana	Louisiana	Electric	1		\$	13.39	Schedule SGS-G, Page 15.1
	Entergy Louisiana	Louisiana	Gas	1		\$	9.71	Rate G-1, Sheet No. 10
	Entergy Mississippi	Mississippi	Electric	1		\$	6.75	Rate Schedule RS-38C
	Entergy Texas	Texas	Electric	1		\$	10.00	Residential Service, Page 2.1
gy, Inc.	Evergy Metro d.b.a. Evergy Kansas Metro	Kansas	Electric	1		\$	14.25	Schedule R, Schedule 11 Sheet 2
	Kansas City Power & Light Company	Missouri	Electric	1		\$	11.47	Schedule R, P.S.C. MO. No. 7. Tenth Revised Sheet No. 5A
	KCP&L Greater Missouri Operations Company	Missouri	Electric	1		\$	11.47	RS Electric; P.S.C. MO. No. 1. 1st Revised Sheet No. 146 1
	Evergy Kansas Central	Kansas	Electric	1		\$	14.50	Schedule RS, Sheet 2
	Idaho Power	Idaho	Flectric	1		\$	5 00	Schedule 1 Sheet No. 1-1
жи, що.	Idaho Power	Oregon	Electric	1		φ \$	8.00	Schedule 1, Sheet No. 1-1
	MGE Eporal	Wicconsin	Floatria	1	נסו	¢	22.45	man com/outomor convice/for homes/alectric attact
≟ ⊏nergy, inc.	MGE Energy MGE Energy	wisconsin Wisconsin	Electric Gas	י 1	[3] [3]	ծ \$	22.15 21.89	mge.com/customer-service/for-nomes/electric-rates mge.com/customer-service/for-homes/natural-gas-rates
Era Energy, Inc.	Florida Power & Light Company	Florida	Electric	1		\$	10.61	GS-1, No. 8.101
0,7	- ···-	Flavida	Electric	1	[3]	\$	19.47	Section VI Sheet 6.3, 35th Revision
	Gulf Power	Fiorida	LIECUIC		[U]	Ψ	10.47	

COMPARISON OF MINNESOTA POWER AND PROXY GROUP COMPANIES FIXED COST RECOVERY - RESIDENTIAL RATE CLASS

[1]

Proxy Group Company	Operating Subsidiary	Operation Stat	e Operation	1	Custom	ner Charg	ge (per month)	Source
NorthWestern Corporation	NorthWestern Energy	Montono	Floatria	1		¢	4 20	Posidential Electric Pate
Northwestern Corporation	NorthWestern Energy	Montana	Cas	1		ዋ ድ	4.20	Residential Natural Cas Pate
	NorthWestern Energy	Nohraska	Gas	1		ф Ф	8.00	Residential Natural Gas Rate Poto No. 01 Shoot 1
	NorthWestern Energy	South Dakata	Gas	1		ው ወ	8.00	Rate No. 91, Sheet No. 1
	NorthWestern Energy	South Dakota	Cee	1		ው ወ	8.00	Rate No. 10, Sheet No. 1
	Northwestern Energy	South Dakota	Gas	I		Φ	8.00	Rate No. 61, Sheet No. 1
Otter Tail Corporation	Otter Tail Power Company	Minnesota	Electric	1		\$	9.75	Residential Service (29th Revision)
	Otter Tail Power Company	North Dakota	Electric	1		\$	14.00	Residential Service (19th Revision)
	Otter Tail Power Company	South Dakota	Electric	1		\$	10.00	Residential Service (4th Revised Sheet No. 1)
Pinnacle West Capital Corporation	Arizona Public Service Company	Arizona	Electric	1	[3]	\$	10.01	Rate Schedule R-XS
Portland General Electric Company	Portland General Electric Company	Oregon	Electric	1		\$	11.00	Schedule 7, Sheet No. 7-1
Southern Company	Alabama Power	Alabama	Electric	1		\$	14.50	Rate FD
	Georgia Power	Georgia	Electric	1	[3]	\$	12.00	Schedule R-24
	Atlanta Gas Light	Georgia	Gas	1		\$	21.07	Residential Delivery Service (R-1)
	Nicor Gas	Illinois	Gas	1		\$	17.96	Rate 1, Sheet No. 10
	Mississippi Power	Mississippi	Electric	1	[3]	\$	27.07	Rate Schedule R-59
	Chattanooga Gas Company	Tennessee	Gas	1		\$	15.90	Rate Schedule R-1, Sheet No. 1
	Virginia Natural Gas	Virginia	Gas	1		\$	16.68	Schedule 1
Xcel Energy Inc.	Public Service Company of Colorado	Colorado	Electric	1		\$	5.47	Schedule R
	Public Service Company of Colorado	Colorado	Gas	1		\$	12.21	Schedule R
	Northern States Power Company	Minnesota	Electric	1		\$	8.00	Residential Sheet 5-1
	Northern States Power Company	Minnesota	Gas	1		\$	9.00	Rate 101, Sheet No. 1
	Southwestern Public Service Company	New Mexico	Electric	1		\$	9.60	Residential Tariff No. 1018.20
	Northern States Power Company	North Dakota	Electric	1		\$	14.50	Sheet 5-1
	Northern States Power Company	North Dakota	Gas	1		\$	18.48	Rate Code 401, Sheet No. 1
	Northern States Power Company	South Dakota	Electric	1		\$	8.25	Rate Code F01, Sheet No. 1.1
	Southwestern Public Service Company	Texas	Electric	1		\$	10.50	Residential Service Sheet No. IV-3
	Northern States Power Company	Wisconsin	Electric	1		\$	17.00	Schedule Ra-1 Sheet No. F 10
	Northern States Power Company	Wisconsin	Gas	1		\$	14.00	Schedule Rg-1, Sheet No. G 6
					N.4:	¢	4.00	
				05	IVIIN	Ъ С	4.20	
I OTAL JULISAICTIONS				85	wean	ф Ф	11.99	
					iviax	φ	33.03	
ALLETE, Inc.	Minnesota Power	Minnesota	Electric			\$	8.00	Rate RS

Notes: [1] Source: Company Tariffs. [2] Customer Charge calculated as the sum of the customer charge and meter charge. [3] Average Number of Days in a Month = 30.42

FLOTATION COST ADJUSTMENT -- MINNESOTA POWER PROXY GROUP

		[1]		[2]	[3]			[4]		[5]		[6]		[7]		[8]	[9]
Company	S Date [i]	Shares Issued (000)		ffering Price	Under- writing Discount [ii]		Offering Expense (\$000)		Net Proceeds Per Share		Total Flotation Costs (\$000)		Gross Equity Issue Before Costs (\$000)		Net Proceeds (\$000)		Flotation Cost Percentage
Minnesota Power	6/2/1977	1.300.00	\$	21.50	\$ (0.60	\$	105.00	\$	20.82	\$	885.00	\$	27.950.00	\$	27.065.00	3.166%
Minnesota Power	4/5/1978	1.500.00	\$	21.00	\$ (0.61	\$	95.00	\$	20.33	\$	1.010.00	\$	31,500.00	\$	30,490,00	3.206%
Minnesota Power	3/13/1979	1,000.00	\$	20.15	\$ (0.63	\$	95.00	\$	19.43	\$	725.00	\$	20,150.00	\$	19,425.00	3.598%
Minnesota Power	9/14/1993	1,000.00	\$	35.88	\$	1.07	\$	172.85	\$	34.64	\$	1,242.85	\$	35,880.00	\$	34,637.15	3.464%
Minnesota Power	9/24/1998	2,100.00	\$	43.75	\$	1.25	\$	185.00	\$	42.41	\$	2,810.00	\$	91,875.00	\$	89,065.00	3.059%
Minnesota Power	5/30/2001	6,600.00	\$	23.68	\$ (0.95	\$	220.00	\$	22.70	\$	6,490.00	\$	156,288.00	\$	149,798.00	4.153%
Minnesota Power	2/26/2014	3,220.00	\$	49.75	\$ ´	1.74		n/a	\$	48.01	\$	5,606.99	\$	160,195.00	\$	154,588.01	3.500%
Minnesota Power	2008-2021	10,909.61	\$	46.02		n/a		n/a	\$	45.94	\$	877.21	\$	502,060.07	\$	501,182.86	0.175%
Mean											\$	2,455.88	\$	128,237.26	\$	125,781.38	
											WE	IGHTED AVE	RA	GE FLOTATIO	N C	OSTS	1.915% [10]

[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 0.9808, 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 _	$D \times (1 + 0.5g) + q$
κ –	$P \times (1-F)^{-T}g$

		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Expected Dividend Yield Adjusted for Flotation Costs	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Earnings Growth	ROE	ROE Adjusted for Flotation Costs
Alliant Energy Corporation	LNT	\$1.61	\$60.22	2.67%	2.75%	2.80%	5.50%	5.10%	5.60%	5.40%	8.15%	8.20%
Ameren Corporation	AEE	\$2.20	\$86.66	2.54%	2.63%	2.68%	6.50%	7.70%	7.30%	7.17%	9.80%	9.85%
American Electric Power Company, Inc.	AEP	\$2.96	\$88.93	3.33%	3.43%	3.50%	6.50%	6.03%	5.70%	6.08%	9.51%	9.57%
Avista Corporation	AVA	\$1.69	\$42.49	3.98%	4.07%	4.15%	3.00%	6.20%	5.10%	4.77%	8.84%	8.92%
CMS Energy Corporation	CMS	\$1.74	\$63.20	2.75%	2.85%	2.90%	7.50%	6.18%	6.90%	6.86%	9.71%	9.76%
Duke Energy Corporation	DUK	\$3.94	\$105.87	3.72%	3.83%	3.91%	7.00%	5.45%	5.30%	5.92%	9.75%	9.82%
Entergy Corporation	ETR	\$3.80	\$107.87	3.52%	3.57%	3.64%	3.00%	3.85%	1.40%	2.75%	6.32%	6.39%
Evergy, Inc.	EVRG	\$2.14	\$67.13	3.19%	3.29%	3.36%	8.00%	5.70%	5.80%	6.50%	9.79%	9.86%
IDACORP, Inc.	IDA	\$2.84	\$106.21	2.67%	2.72%	2.78%	4.00%	3.20%	3.90%	3.70%	6.42%	6.48%
MGE Energy, Inc.	MGEE	\$1.55	\$79.68	1.95%	2.00%	2.04%	4.50%	5.60%	5.60%	5.23%	7.23%	7.27%
NextEra Energy, Inc.	NEE	\$1.54	\$81.28	1.89%	1.98%	2.02%	10.50%	8.13%	8.30%	8.98%	10.96%	11.00%
NorthWestern Corporation	NWE	\$2.48	\$63.01	3.94%	4.02%	4.09%	3.00%	4.50%	4.80%	4.10%	8.12%	8.19%
Otter Tail Corporation	OTTR	\$1.56	\$52.62	2.96%	3.07%	3.13%	7.00%	9.00%	4.70%	6.90%	9.97%	10.03%
Pinnacle West Capital Corporation	PNW	\$3.32	\$80.74	4.11%	4.18%	4.26%	5.00%	0.10%	5.00%	3.37%	7.55%	7.63%
Portland General Electric Company	POR	\$1.72	\$50.02	3.44%	3.58%	3.65%	8.50%	7.10%	8.60%	8.07%	11.64%	11.71%
Southern Company	SO	\$2.64	\$65.11	4.05%	4.17%	4.25%	6.00%	6.50%	4.90%	5.80%	9.97%	10.05%
Xcel Energy Inc.	XEL	\$1.83	\$68.85	2.66%	2.74%	2.79%	6.00%	6.30%	6.10%	6.13%	8.87%	8.93%
Mean											8.98%	9.04%
Flotation Cost Adjustment											[12]	0.06%

Notes:

[1]-[4] Source: Company-provided information [5] Equals [8]/[1] [6] Equals [4] + ([1] x [3]) [7] Equals [1] x [2] [8] Equals [7] - [6] [9] Equals [6] / [7] [10] Equals average [6] / average [7] [11] Source: Bloomberg Professional [11] Source: Bloomberg Professional
[12] Source: Bloomberg Professional, equals 30-day average as of August 31, 2021
[13] Equals [11] / [12]
[14] Equals [13] x (1 + 0.5 x [19])
[15] Equals [14] / (1 - Flotation Cost) [16] Source: Value Line [17] Source: Yahoo! Finance [18] Source: Zacks [19] Equals Average ([16], [17], [18]) [20] Equals [14] + [19] [21] Equals [15] + [19] [22] Equals Average ([21]) - Average ([20])

										A	All Proxy Grou	lb	١	Nith Exclusior	าร
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
							Yahoo!								
					Expected	Value Line	Finance	Zacks	Average						
		Annualized	Stock	Dividend	Dividend	Earnings	Earnings	Earnings	Growth						
Company	Ticker	Dividend	Price	Yield	Yield	Growth	Growth	Growth	Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
Alliant Energy Corporation	LNT	\$1.61	\$60.22	2.67%	2.75%	5.50%	5.10%	5.60%	5.40%	7.84%	8.15%	8.35%	7.84%	8.15%	8.35%
Ameren Corporation	AEE	\$2.20	\$86.66	2.54%	2.63%	6.50%	7.70%	7.30%	7.17%	9.12%	9.80%	10.34%	9.12%	9.80%	10.34%
American Electric Power Company, Inc.	AEP	\$2.96	\$88.93	3.33%	3.43%	6.50%	6.03%	5.70%	6.08%	9.12%	9.51%	9.94%	9.12%	9.51%	9.94%
Avista Corporation	AVA	\$1.69	\$42.49	3.98%	4.07%	3.00%	6.20%	5.10%	4.77%	7.04%	8.84%	10.30%	7.04%	8.84%	10.30%
CMS Energy Corporation	CMS	\$1.74	\$63.20	2.75%	2.85%	7.50%	6.18%	6.90%	6.86%	9.02%	9.71%	10.36%	9.02%	9.71%	10.36%
Duke Energy Corporation	DUK	\$3.94	\$105.87	3.72%	3.83%	7.00%	5.45%	5.30%	5.92%	9.12%	9.75%	10.85%	9.12%	9.75%	10.85%
Entergy Corporation	ETR	\$3.80	\$107.87	3.52%	3.57%	3.00%	3.85%	1.40%	2.75%	4.95%	6.32%	7.44%			7.44%
Evergy, Inc.	EVRG	\$2.14	\$67.13	3.19%	3.29%	8.00%	5.70%	5.80%	6.50%	8.98%	9.79%	11.32%	8.98%	9.79%	11.32%
IDACORP, Inc.	IDA	\$2.84	\$106.21	2.67%	2.72%	4.00%	3.20%	3.90%	3.70%	5.92%	6.42%	6.73%			
MGE Energy, Inc.	MGEE	\$1.55	\$79.68	1.95%	2.00%	4.50%	5.60%	5.60%	5.23%	6.49%	7.23%	7.60%		7.23%	7.60%
NextEra Energy, Inc.	NEE	\$1.54	\$81.28	1.89%	1.98%	10.50%	8.13%	8.30%	8.98%	10.10%	10.96%	12.49%	10.10%	10.96%	12.49%
NorthWestern Corporation	NWE	\$2.48	\$63.01	3.94%	4.02%	3.00%	4.50%	4.80%	4.10%	6.99%	8.12%	8.83%		8.12%	8.83%
Otter Tail Corporation	OTTR	\$1.56	\$52.62	2.96%	3.07%	7.00%	9.00%	4.70%	6.90%	7.73%	9.97%	12.10%	7.73%	9.97%	12.10%
Pinnacle West Capital Corporation	PNW	\$3.32	\$80.74	4.11%	4.18%	5.00%	0.10%	5.00%	3.37%	4.21%	7.55%	9.21%		7.55%	9.21%
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	\$65.11	4.05%	4.17%	6.00%	6.50%	4.90%	5.80%	9.05%	9.97%	10.69%	9.05%	9.97%	10.69%
Xcel Energy Inc.	XEL	\$1.83	\$68.85	2.66%	2.74%	6.00%	6.30%	6.10%	6.13%	8.74%	8.87%	9.04%	8.74%	8.87%	9.04%
Mean				3.14%	3.23%	5.97%	5.68%	5.59%	5.75%	7.95%	8.98%	9.87%	8.88%	9.32%	10.06%
Flotation Cost										0.06%	0.06%	0.06%	0.06%	0.06%	0.06%
Flotation Cost-Adjusted Result										8.01%	9.04%	9.93%	8.94%	9.39%	10.13%

30-DAY CONSTANT GROWTH DCF -- MINNESOTA POWER PROXY GROUP

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 30-day average as of August 31, 2021.

[2] 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 the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826

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		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
							Yahoo!								
					Expected	Value Line	Finance	Zacks	Average						
		Annualized	Stock	Dividend	Dividend	Earnings	Earnings	Earnings	Growth						
Company	Ticker	Dividend	Price	Yield	Yield	Growth	Growth	Growth	Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
Alliant Energy Corporation	LNT	\$1.61	\$58.15	2.77%	2.84%	5.50%	5.10%	5.60%	5.40%	7.94%	8.24%	8.45%	7.94%	8.24%	8.45%
Ameren Corporation	AEE	\$2.20	\$84.71	2.60%	2.69%	6.50%	7.70%	7.30%	7.17%	9.18%	9.86%	10.40%	9.18%	9.86%	10.40%
American Electric Power Company, Inc.	AEP	\$2.96	\$86.78	3.41%	3.51%	6.50%	6.03%	5.70%	6.08%	9.21%	9.59%	10.02%	9.21%	9.59%	10.02%
Avista Corporation	AVA	\$1.69	\$43.99	3.84%	3.93%	3.00%	6.20%	5.10%	4.77%	6.90%	8.70%	10.16%		8.70%	10.16%
CMS Energy Corporation	CMS	\$1.74	\$62.23	2.80%	2.89%	7.50%	6.18%	6.90%	6.86%	9.06%	9.75%	10.40%	9.06%	9.75%	10.40%
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	\$106.09	3.58%	3.63%	3.00%	3.85%	1.40%	2.75%	5.01%	6.38%	7.50%			7.50%
Evergy, Inc.	EVRG	\$2.14	\$64.15	3.34%	3.44%	8.00%	5.70%	5.80%	6.50%	9.13%	9.94%	11.47%	9.13%	9.94%	11.47%
IDACORP, Inc.	IDA	\$2.84	\$102.15	2.78%	2.83%	4.00%	3.20%	3.90%	3.70%	6.02%	6.53%	6.84%			
MGE Energy, Inc.	MGEE	\$1.55	\$76.66	2.02%	2.07%	4.50%	5.60%	5.60%	5.23%	6.57%	7.31%	7.68%		7.31%	7.68%
NextEra Energy, Inc.	NEE	\$1.54	\$76.61	2.01%	2.10%	10.50%	8.13%	8.30%	8.98%	10.22%	11.08%	12.62%	10.22%	11.08%	12.62%
NorthWestern Corporation	NWE	\$2.48	\$63.40	3.91%	3.99%	3.00%	4.50%	4.80%	4.10%	6.97%	8.09%	8.81%		8.09%	8.81%
Otter Tail Corporation	OTTR	\$1.56	\$49.79	3.13%	3.24%	7.00%	9.00%	4.70%	6.90%	7.91%	10.14%	12.27%	7.91%	10.14%	12.27%
Pinnacle West Capital Corporation	PNW	\$3.32	\$83.37	3.98%	4.05%	5.00%	0.10%	5.00%	3.37%	4.08%	7.42%	9.08%		7.42%	9.08%
Portland General Electric Company	POR	\$1.72	\$48.99	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	\$64.05	4.12%	4.24%	6.00%	6.50%	4.90%	5.80%	9.12%	10.04%	10.76%	9.12%	10.04%	10.76%
Xcel Energy Inc.	XEL	\$1.83	\$69.17	2.65%	2.73%	6.00%	6.30%	6.10%	6.13%	8.73%	8.86%	9.03%	8.73%	8.86%	9.03%
Mean				3.19%	3.28%	5.97%	5.68%	5.59%	5.75%	8.00%	9.03%	9.92%	9.13%	9.37%	10.12%
Flotation Cost										0.06%	0.06%	0.06%	0.06%	0.06%	0.06%
Flotation Cost-Adjusted Result										8.06%	9.09%	9.99%	9.20%	9.44%	10.18%

90-DAY CONSTANT GROWTH DCF -- MINNESOTA POWER PROXY GROUP

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 90-day average as of August 31, 2021.

[2] 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 the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826

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										ŀ	All Proxy Grou	ıp	V	Vith Exclusion	IS
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
							Yahoo!								
					Expected	Value Line	Finance	Zacks	Average						
		Annualized	Stock	Dividend	Dividend	Earnings	Earnings	Earnings	Growth						
Company	Ticker	Dividend	Price	Yield	Yield	Growth	Growth	Growth	Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
Alliant Energy Corporation	LNT	\$1.61	\$54.53	2.95%	3.03%	5.50%	5.10%	5.60%	5.40%	8.13%	8.43%	8.64%	8.13%	8.43%	8.64%
Ameren Corporation	AEE	\$2.20	\$80.69	2.73%	2.82%	6.50%	7.70%	7.30%	7.17%	9.32%	9.99%	10.53%	9.32%	9.99%	10.53%
American Electric Power Company, Inc.	AEP	\$2.96	\$84.41	3.51%	3.61%	6.50%	6.03%	5.70%	6.08%	9.31%	9.69%	10.12%	9.31%	9.69%	10.12%
Avista Corporation	AVA	\$1.69	\$43.02	3.93%	4.02%	3.00%	6.20%	5.10%	4.77%	6.99%	8.79%	10.25%		8.79%	10.25%
CMS Energy Corporation	CMS	\$1.74	\$60.42	2.88%	2.98%	7.50%	6.18%	6.90%	6.86%	9.15%	9.84%	10.49%	9.15%	9.84%	10.49%
Duke Energy Corporation	DUK	\$3.94	\$97.61	4.04%	4.16%	7.00%	5.45%	5.30%	5.92%	9.44%	10.07%	11.18%	9.44%	10.07%	11.18%
Entergy Corporation	ETR	\$3.80	\$101.41	3.75%	3.80%	3.00%	3.85%	1.40%	2.75%	5.17%	6.55%	7.67%			7.67%
Evergy, Inc.	EVRG	\$2.14	\$60.23	3.55%	3.67%	8.00%	5.70%	5.80%	6.50%	9.35%	10.17%	11.70%	9.35%	10.17%	11.70%
IDACORP, Inc.	IDA	\$2.84	\$97.87	2.90%	2.96%	4.00%	3.20%	3.90%	3.70%	6.15%	6.66%	6.96%			
MGE Energy, Inc.	MGEE	\$1.55	\$72.76	2.13%	2.19%	4.50%	5.60%	5.60%	5.23%	6.68%	7.42%	7.79%		7.42%	7.79%
NextEra Energy, Inc.	NEE	\$1.54	\$77.14	2.00%	2.09%	10.50%	8.13%	8.30%	8.98%	10.21%	11.06%	12.60%	10.21%	11.06%	12.60%
NorthWestern Corporation	NWE	\$2.48	\$61.85	4.01%	4.09%	3.00%	4.50%	4.80%	4.10%	7.07%	8.19%	8.91%	7.07%	8.19%	8.91%
Otter Tail Corporation	OTTR	\$1.56	\$46.64	3.34%	3.46%	7.00%	9.00%	4.70%	6.90%	8.12%	10.36%	12.50%	8.12%	10.36%	12.50%
Pinnacle West Capital Corporation	PNW	\$3.32	\$81.00	4.10%	4.17%	5.00%	0.10%	5.00%	3.37%	4.20%	7.53%	9.20%		7.53%	9.20%
Portland General Electric Company	POR	\$1.72	\$46.73	3.68%	3.83%	8.50%	7.10%	8.60%	8.07%	10.91%	11.90%	12.44%	10.91%	11.90%	12.44%
Southern Company	SO	\$2.64	\$62.35	4.23%	4.36%	6.00%	6.50%	4.90%	5.80%	9.24%	10.16%	10.87%	9.24%	10.16%	10.87%
Xcel Energy Inc.	XEL	\$1.83	\$66.89	2.74%	2.82%	6.00%	6.30%	6.10%	6.13%	8.82%	8.95%	9.12%	8.82%	8.95%	9.12%
Mean				3.32%	3.41%	5.97%	5.68%	5.59%	5.75%	8.13%	9.16%	10.06%	9.09%	9.50%	10.25%
Flotation Cost										0.06%	0.06%	0.06%	0.06%	0.06%	0.06%
Flotation Cost-Adjusted Result										8.20%	9.23%	10.12%	9.15%	9.57%	10.31%

180-DAY CONSTANT GROWTH DCF -- MINNESOTA POWER PROXY GROUP

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 180-day average as of August 31, 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 the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826

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30-DAY TWO-GROWTH DCF -- MEAN GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[9]	[10]		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
					Expected	Average	Second					PV of			PV of			PV of			PV of			PV of		Year 5	PV of Year	Current
		Annualized	Stock	Dividend	Dividend	Growth	Growth	Mean		Year 1		Year	Year 2		Year	Year 3		Year	Year 4		Year	Year 5		Year	Year 6	Stock	5 Stock	Stock
Company	Ticker	Dividend	Price	Yield	Yield	Rate	Rate	ROE	Check	Div.	(1+k)^1	1 Div.	Div.	(1+k)^2	2 Div.	Div.	(1+k)^3	3 Div.	Div.	(1+k)^4	4 Div.	Div.	(1+k)^5	5 Div.	Div.	Price	Price	Price
Alliant Energy Corporation	LNT	\$1.61	\$60.22	2.67%	2.75%	5.40%	5.40%	8.15%	0.00	\$1.65	1.08	1.53	\$ \$1.74	1.17	1.49	\$1.84	1.26	1.45	\$1.94	1.37	1.42	\$2.04	1.48	1.38	\$2.15	\$78.33	\$52.95	\$60.22
Ameren Corporation	AEE	\$2.20	\$86.66	2.54%	2.63%	7.17%	7.17%	9.80%	0.00	\$2.28	1.10	2.08	\$ \$2.44	1.21	2.03	\$2.62	1.32	1.98	\$2.80	1.45	1.93	\$3.01	1.60	1.88	\$3.22	\$122.49	\$76.76	\$86.66
American Electric Power Company, Inc.	AEP	\$2.96	\$88.93	3.33%	3.43%	6.08%	6.08%	9.51%	0.00	\$3.05	1.10	2.79	\$3.24	1.20	2.70	\$3.43	1.31	2.61	\$3.64	1.44	2.53	\$3.86	1.57	2.45	\$4.10	\$119.44	÷ \$75.85	\$88.93
Avista Corporation	AVA	\$1.69	\$42.49	3.98%	4.07%	4.77%	4.77%	8.84%	0.00	\$1.73	1.09	1.59	\$1.81	1.18	1.53	\$1.90	1.29	1.47	\$1.99	1.40	1.42	\$2.08	1.53	1.36	\$2.18	\$53.62	<u> </u>	\$42.49
CMS Energy Corporation	CMS	\$1.74	\$63.20	2.75%	2.85%	6.86%	6.86%	9.71%	0.00	\$1.80	1.10	1.64	\$1.92	1.20	1.60	\$2.06	1.32	1.56	\$2.20	1.45	1.52	\$2.35	1.59	1.48	\$2.51	\$88.07	\$55.42	\$63.20
Duke Energy Corporation	DUK	\$3.94	\$105.87	3.72%	3.83%	5.92%	5.92%	9.75%	0.00	\$4.06	1.10	3.70	\$4.30	1.20	3.57	\$4.55	1.32	3.44	\$4.82	1.45	3.32	\$5.11	1.59	3.21	\$5.41	\$141.13	\$88.64	\$105.87
Entergy Corporation	ETR	\$3.80	\$107.87	3.52%	3.57%	2.75%	4.09%	7.49%	0.00	\$3.85	1.07	3.58	\$3.96	1.16	3.43	\$4.07	1.24	3.27	\$4.18	1.34	3.13	\$4.29	1.44	2.99	\$4.47	\$131.26	\$91.47	\$107.87
Evergy, Inc.	EVRG	\$2.14	\$67.13	3.19%	3.29%	6.50%	6.50%	9.79%	0.00	\$2.21	1.10	2.01	\$2.35	1.21	1.95	\$2.51	1.32	1.89	\$2.67	1.45	1.84	\$2.84	1.60	1.78	\$3.03	\$91.97	\$57.65	\$67.13
IDACORP, Inc.	IDA	\$2.84	\$106.21	2.67%	2.72%	3.70%	4.09%	6.77%	0.00	\$2.89	1.07	2.71	\$3.00	1.14	2.63	\$3.11	1.22	2.56	\$3.23	1.30	2.48	\$3.34	1.39	2.41	\$3.48	\$129.64	\$93.42	\$106.21
MGE Energy, Inc.	MGEE	\$1.55	\$79.68	1.95%	2.00%	5.23%	5.23%	7.23%	0.00	\$1.59	1.07	1.48	\$ \$1.67	1.15	1.46	\$1.76	1.23	1.43	\$1.85	1.32	1.40	\$1.95	1.42	1.38	\$2.05	\$102.83	\$72.53	\$79.68
NextEra Energy, Inc.	NEE	\$1.54	\$81.28	1.89%	1.98%	8.98%	7.41%	9.50%	0.00	\$1.61	1.10	1.47	'\$1.75	1.20	1.46	\$1.91	1.31	1.46	\$2.08	1.44	1.45	\$2.27	1.57	1.44	\$2.44	\$116.50	\$74.00	\$81.28
NorthWestern Corporation	NWE	\$2.48	\$63.01	3.94%	4.02%	4.10%	4.10%	8.12%	0.00	\$2.53	1.08	2.34	\$2.63	1.17	2.25	\$2.74	1.26	2.17	\$2.86	1.37	2.09	\$2.97	1.48	2.01	\$3.09	\$77.04	\$52.15	\$63.01
Otter Tail Corporation	OTTR	\$1.56	\$52.62	2.96%	3.07%	6.90%	6.90%	9.97%	0.00	\$1.61	1.10	1.47	'\$1.73	1.21	1.43	\$1.84	1.33	1.39	\$1.97	1.46	1.35	\$2.11	1.61	1.31	\$2.25	\$73.46	\$45.68 ن	\$52.62
Pinnacle West Capital Corporation	PNW	\$3.32	\$80.74	4.11%	4.18%	3.37%	4.09%	8.16%	0.00	\$3.38	1.08	3.12	\$3.49	1.17	2.98	\$3.61	1.27	2.85	\$3.73	1.37	2.72	\$3.85	1.48	2.60	\$4.01	\$98.39	\$66.46	\$80.74
Portland General Electric Company	POR	\$1.72	\$50.02	3.44%	3.58%	8.07%	7.41%	11.07%	0.00	\$1.79	1.11	1.61	\$1.93	1.23	1.57	\$2.09	1.37	1.53	\$2.26	1.52	1.48	\$2.44	1.69	1.44	\$2.62	\$71.64	\$42.39	\$50.02
Southern Company	SO	\$2.64	\$65.11	4.05%	4.17%	5.80%	5.80%	9.97%	0.00	\$2.72	1.10	2.47	′\$2.87	1.21	2.38	\$3.04	1.33	2.29	\$3.22	1.46	2.20	\$3.40	1.61	2.12	\$3.60	\$86.31	\$53.66	\$65.11
Xcel Energy Inc.	XEL	\$1.83	\$68.85	2.66%	2.74%	6.13%	6.13%	8.87%	0.00	\$1.89	1.09	1.73	\$ \$2.00	1.19	1.69	\$2.12	1.29	1.65	\$2.25	1.41	1.60	\$2.39	1.53	1.56	\$2.54	\$92.72	\$60.61	\$68.85
Mean				3.14%	3.23%	5.75%	5.76%	8.98%		<u> </u>																		
Mean (excluding ROE < 7%) [30]								9.12%																				
Flotation Cost								0.06%																				
Flotation Cost-Adjusted Result								9.18%		-																		
						4.000/																						
				Standard Devi	lation [6]	1.66%																						
				Avg. less Stan	Idard Dev [7]	4.09%																						
				Avg. plus Star	ndard Dev [8]	7.41%																						
Notes:				-																								

[1] Source: Schedule 6 [2] Source: Schedule 6 [2] Source: Schedule 6 [3] Equals [1] / [2] [4] Equals [3] x (1 + 0.50 x [5]) [5] Source: Schedule 6 [6] Standard Deviation of Column [5] [7] Mean of Column [5], minus [6] [8] Mean of Column [5], plus [6] [9] If [5] > [8], then [8]; If [5] < [7], then [7], Else [5] [10] ROE that sets [2] equal to [29] using Excel's goal seek function [11] = [2] x [4] [10] ROE that sets [2] [11] = [2] x [4] [12] = $(1 + [10]) ^ 1$ [13] = [11] / [12] [14] = [11] * (1 + [5])[15] = $(1 + [10]) ^ 2$ [16] = [14] / [15] [17] = [14] * (1 + [5])[18] = $(1 + [10]) ^ 3$ [19] = [17] / [18] [20] = [17] * (1 + [5])[20] = [17] * (1 + [5]) [21] = (1 + [10]) ^ 4 $\begin{bmatrix} 21 \\ - (1 + [10]) & 4 \\ \\ \begin{bmatrix} 22 \\ - 2 \end{bmatrix} = \begin{bmatrix} 20 \\ - 2 \end{bmatrix} / \begin{bmatrix} 21 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 23 \\ - 2 \end{bmatrix} = \begin{bmatrix} 20 \\ - 1 \end{bmatrix} / \begin{bmatrix} 1 + [5] \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 24 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 26 \\ - 2 \end{bmatrix} \\ \begin{bmatrix}$ $[20] = [23] \cdot (1 + [3])$ [27] = [26] / ([10] - [9]) [28] = [27] / [24] [29] = [13] + [16] + [19] + [22] + [25] + [28] [30] Excludes companies with ROEs less than the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826

90-DAY TWO-GROWTH DCF -- MEAN GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[9]	[10]		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
					Expected	Average	Second					PV of		Year 5	PV of Year	Current												
		Annualized	Stock	Dividend	Dividend	Growth	Growth	Mean		Year 1		Year	Year 2		Year	Year 3		Year	Year 4		Year	Year 5		Year	Year 6	Stock	5 Stock	Stock
Company	Ticker	Dividend	Price	Yield	Yield	Rate	Rate	ROE	Check	Div.	(1+k)^1	1 Div.	Div.	(1+k)^2	2 Div.	Div.	(1+k)^3	3 Div.	Div.	(1+k)^4	4 Div.	Div.	(1+k)^5	5 Div.	Div.	Price	Price	Price
Alliant Energy Corporation	LNT	\$1.61	\$58,15	2.77%	2.84%	5.40%	5.40%	8.24%	0.00	\$1.65	1.08	1.53	\$1.74	1.17	1.49	\$1.84	1.27	1.45	\$1.94	1.37	1.41	\$2.04	1.49	1.37	\$2,15	\$75.64	\$50.90	\$58,15
Ameren Corporation	AEE	\$2.20	\$84.71	2.60%	2.69%	7.17%	7.17%	9.86%	0.00	\$2.28	1.10	2.07	\$2.44	1.21	2.02	\$2.62	1.33	1.97	\$2.80	1.46	1.93	\$3.01	1.60	1.88	\$3.22	\$119.74	\$74.83	\$84.71
American Electric Power Company, Inc.	AEP	\$2.96	\$86.78	3.41%	3.51%	6.08%	6.08%	9.59%	0.00	\$3.05	1.10	2.78	\$3.24	1.20	2.69	\$3.43	1.32	2.61	\$3.64	1.44	2.52	\$3.86	1.58	2.44	\$4.10	\$116.55	\$73.73	\$86.78
Avista Corporation	AVA	\$1.69	\$43.99	3.84%	3.93%	4.77%	4.77%	8.70%	0.00	\$1.73	1.09	1.59	\$1.81	1.18	1.53	\$1.90	1.28	1.48	\$1.99	1.40	1.43	\$2.08	1.52	1.37	\$2.18	\$55.52	\$36.58	\$43.99
CMS Energy Corporation	CMS	\$1.74	\$62.23	2.80%	2.89%	6.86%	6.86%	9.75%	0.00	\$1.80	1.10	1.64	\$1.92	1.20	1.60	\$2.06	1.32	1.55	\$2.20	1.45	1.51	\$2.35	1.59	1.47	\$2.51	\$86.72	\$54.46	\$62.23
Duke Energy Corporation	DUK	\$3.94	\$102.73	3.84%	3.95%	5.92%	5.92%	9.87%	0.00	\$4.06	1.10	3.69	\$4.30	1.21	3.56	\$4.55	1.33	3.43	\$4.82	1.46	3.31	\$5.11	1.60	3.19	\$5.41	\$136.94	\$85.55	\$102.73
Entergy Corporation	ETR	\$3.80	\$106.09	3.58%	3.63%	2.75%	4.09%	7.55%	0.00	\$3.85	1.08	3.58	\$3.96	1.16	3.42	\$4.07	1.24	3.27	\$4.18	1.34	3.12	\$4.29	1.44	2.98	\$4.47	\$129.08	\$89.71	\$106.09
Everav. Inc.	EVRG	\$2.14	\$64.15	3.34%	3.44%	6.50%	6.50%	9.94%	0.00	\$2.21	1.10	2.01	\$2.35	1.21	1.95	\$2.51	1.33	1.89	\$2.67	1.46	1.83	\$2.84	1.61	1.77	\$3.03	\$87.89	\$54.71	\$64.15
DACORP. Inc.	IDA	\$2.84	\$102.15	2.78%	2.83%	3.70%	4.09%	6.88%	0.00	\$2.89	1.07	2.71	\$3.00	1.14	2.63	\$3.11	1.22	2.55	\$3.23	1.30	2.47	\$3.34	1.39	2.40	\$3.48	\$124.68	\$89.40	\$102.15
MGE Energy. Inc.	MGEE	\$1.55	\$76.66	2.02%	2.07%	5.23%	5.23%	7.31%	0.00	\$1.59	1.07	1.48	\$1.67	1.15	1.45	\$1.76	1.24	1.43	\$1.85	1.33	1.40	\$1.95	1.42	1.37	\$2.05	\$98.93	\$69.53	\$76.66
NextEra Energy, Inc.	NEE	\$1.54	\$76.61	2.01%	2.10%	8.98%	7.41%	9.63%	0.00	\$1.61	1.10	1.47	\$1.75	1.20	1.46	\$1.91	1.32	1.45	\$2.08	1.44	1.44	\$2.27	1.58	1.43	\$2.44	\$109.83	\$69.36	\$76.61
NorthWestern Corporation	NWE	\$2.48	\$63.40	3.91%	3.99%	4.10%	4.10%	8.09%	0.00	\$2.53	1.08	2.34	\$2.63	1.17	2.25	\$2.74	1.26	2.17	\$2.86	1.37	2.09	\$2.97	1.48	2.01	\$3.09	\$77.50	\$52.52	\$63.40
Otter Tail Corporation	OTTR	\$1.56	\$49.79	3.13%	3.24%	6.90%	6.90%	10.14%	0.00	\$1.61	1.10	1.47	\$1.73	1.21	1.42	\$1.84	1.34	1.38	\$1.97	1.47	1.34	\$2.11	1.62	1.30	\$2.25	\$69.51	\$42.89	\$49.79
Pinnacle West Capital Corporation	PNW	\$3.32	\$83.37	3.98%	4.05%	3.37%	4.09%	8.03%	0.00	\$3.38	1.08	3.12	\$3.49	1.17	2.99	\$3.61	1.26	2.86	\$3.73	1.36	2.74	\$3.85	1.47	2.62	\$4.01	\$101.61	\$69.04	\$83.37
Portland General Electric Company	POR	\$1.72	\$48.99	3.51%	3.65%	8.07%	7.41%	11.14%	0.00	\$1.79	1.11	1.61	\$1.93	1.24	1.57	\$2.09	1.37	1.52	\$2.26	1.53	1.48	\$2.44	1.70	1.44	\$2.62	\$70.17	\$41.38	\$48.99
Southern Company	SO	\$2.64	\$64.05	4.12%	4.24%	5.80%	5.80%	10.04%	0.00	\$2.72	1.10	2.47	\$2.87	1.21	2.37	\$3.04	1.33	2.28	\$3.22	1.47	2.19	\$3.40	1.61	2.11	\$3.60	\$84.91	\$52.63	\$64.05
Kcel Energy Inc.	XEL	\$1.83	\$69.17	2.65%	2.73%	6.13%	6.13%	8.86%	0.00	\$1.89	1.09	1.73	\$2.00	1.19	1.69	\$2.12	1.29	1.65	\$2.25	1.40	1.61	\$2.39	1.53	1.57	\$2.54	\$93.15	\$60.93	\$69.17
Mean				3.19%	3.28%	5.75%	5.76%	9.04%																				
Mean (excluding ROE < 7%) [30]								9.17%																				
Flotation Cost								0.06%																				
Flotation Cost-Adjusted Result								9.24%																				
				Standard Devi	ation [6]	1 66%																						

Avg. less Standard Dev [7] Avg. plus Standard Dev [8] 4.09% 7.41%

Notes: [1] Source: Schedule 6 [2] Source: Schedule 6 [2] Source: Schedule 6 [3] Equals [1] / [2] [4] Equals [3] x (1 + 0.50 x [5]) [5] Source: Schedule 6 [6] Standard Deviation of Column [5] [7] Mean of Column [5], minus [6] [8] Mean of Column [5], plus [6]
[9] If [5] > [8], then [8]; If [5] < [7], then [7], Else [5]
[10] ROE that sets [2] equal to [29] using Excel's goal seek function $[11] = [2] \times [4]$ $[12] = (1 + [10])^{1}$ $[12] = (1 + [10])^{1/3} + [13] = [11] / [12]$ [14] = [11] * (1 + [5]) $[15] = (1 + [10])^{2}$ [16] = [14] / [15][17] = [14] * (1 + [5]) $[18] = (1 + [10])^{3}$ [10] = [17] / [19][19] = [17] / [18] [20] = [17] * (1 + [5]) [21] = (1 + [10]) ^ 4 $\begin{bmatrix} 21 \\ = (1 + [10]) ^{4} \\ \begin{bmatrix} 22 \\ = [20] / [21] \\ \begin{bmatrix} 23 \\ = [20] * (1 + [5]) \\ \begin{bmatrix} 24 \\ = (1 + [10]) ^{5} \\ \begin{bmatrix} 25 \\ = [23] / [24] \\ \end{bmatrix} \\ \begin{bmatrix} 26 \\ = [23] * (1 + [9]) \\ \begin{bmatrix} 27 \\ = [26] / ([10] - [9]) \\ \begin{bmatrix} 28 \\ = [27] / [24] \\ \end{bmatrix} \\ \begin{bmatrix} 29 \\ = [13] + [16] + [19] + [22] + [25] + [28] \\ \end{bmatrix} \\ \begin{bmatrix} 30 \\ \end{bmatrix} \\ Excludes companies with ROEs less than the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826 \end{bmatrix}$

180-DAY TWO-GROWTH DCF -- MEAN GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[9]	[10]		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
					Expected	Average	Second					PV of			PV of			PV of			PV of			PV of		Year 5	PV of Year	Current
		Annualized	Stock	Dividend	Dividend	Growth	Growth	Mean		Year 1		Year	Year 2		Year	Year 3		Year	Year 4		Year	Year 5		Year	Year 6	Stock	5 Stock	Stock
Company	Ticker	Dividend	Price	Yield	Yield	Rate	Rate	ROE	Check	Div.	(1+k)^1	1 Div	Div.	(1+k)^2	2 Div.	Div.	(1+k)^3	3 Div.	Div.	(1+k)^4	4 Div.	Div.	(1+k)^5	5 Div.	Div.	Price	Price	Price
		• <i>i</i> • <i>i</i>	A - 4 - A	• • - • /						• · • • =			• • - ·			.			• • • • •						* • • -	• -• • •	• /= • •	A -4-A
Alliant Energy Corporation		\$1.61	\$54.53	2.95%	3.03%	5.40%	5.40%	8.43%	0.00	\$1.65	1.08	1.52	2 \$1.74	1.18	1.48	\$1.84	1.27	1.44	\$1.94	1.38	1.40	\$2.04	1.50	1.36	\$2.15	\$70.93	\$47.32	\$54.53
Ameren Corporation	AEE	\$2.20	\$80.69	2.73%	2.82%	7.17%	7.17%	9.99%	0.00	\$2.28	1.10	2.07	\$2.44	1.21	2.02	\$2.62	1.33	1.97	\$2.80	1.46	1.92	\$3.01	1.61	1.87	\$3.22	\$114.06	\$70.85	\$80.69
American Electric Power Company, Inc.	AEP	\$2.96	\$84.41	3.51%	3.61%	6.08%	6.08%	9.69%	0.00	\$3.05	1.10	2.78	\$ \$3.24	1.20	2.69	\$3.43	1.32	2.60	\$3.64	1.45	2.51	\$3.86	1.59	2.43	\$4.10	\$113.37	\$71.39	\$84.41
Avista Corporation	AVA	\$1.69	\$43.02	3.93%	4.02%	4.77%	4.77%	8.79%	0.00	\$1.73	1.09	1.59	\$1.81	1.18	1.53	\$1.90	1.29	1.48	\$1.99	1.40	1.42	\$2.08	1.52	1.37	\$2.18	\$54.30	\$35.63	\$43.02
CMS Energy Corporation	CMS	\$1.74	\$60.42	2.88%	2.98%	6.86%	6.86%	9.84%	0.00	\$1.80	1.10	1.64	\$1.92	1.21	1.59	\$2.06	1.33	1.55	\$2.20	1.46	1.51	\$2.35	1.60	1.47	\$2.51	\$84.19	\$52.66	\$60.42
Duke Energy Corporation	DUK	\$3.94	\$97.61	4.04%	4.16%	5.92%	5.92%	10.07%	0.00	\$4.06	1.10	3.69	\$4.30	1.21	3.55	\$4.55	1.33	3.41	\$4.82	1.47	3.28	\$5.11	1.62	3.16	\$5.41	\$130.11	\$80.53	\$97.61
Entergy Corporation	ETR	\$3.80	\$101.41	3.75%	3.80%	2.75%	4.09%	7.71%	0.00	\$3.85	1.08	3.58	\$ \$3.96	1.16	3.41	\$4.07	1.25	3.25	\$4.18	1.35	3.10	\$4.29	1.45	2.96	\$4.47	\$123.37	\$85.10	\$101.41
Evergy, Inc.	EVRG	\$2.14	\$60.23	3.55%	3.67%	6.50%	6.50%	10.17%	0.00	\$2.21	1.10	2.01	\$2.35	1.21	1.94	\$2.51	1.34	1.87	\$2.67	1.47	1.81	\$2.84	1.62	1.75	\$3.03	\$82.52	\$50.85	\$60.23
IDACORP, Inc.	IDA	\$2.84	\$97.87	2.90%	2.96%	3.70%	4.09%	7.00%	0.00	\$2.89	1.07	2.70	\$3.00	1.14	2.62	\$3.11	1.23	2.54	\$3.23	1.31	2.46	\$3.34	1.40	2.38	\$3.48	\$119.45	\$85.16	\$97.87
MGE Energy, Inc.	MGEE	\$1.55	\$72.76	2.13%	2.19%	5.23%	5.23%	7.42%	0.00	\$1.59	1.07	1.48	\$ \$1.67	1.15	1.45	\$1.76	1.24	1.42	\$1.85	1.33	1.39	\$1.95	1.43	1.36	\$2.05	\$93.89	\$65.65	\$72.76
NextEra Energy, Inc.	NEE	\$1.54	\$77.14	2.00%	2.09%	8.98%	7.41%	9.61%	0.00	\$1.61	1.10	1.47	'\$1.75	1.20	1.46	\$1.91	1.32	1.45	\$2.08	1.44	1.44	\$2.27	1.58	1.43	\$2.44	\$110.59	\$69.89	\$77.14
NorthWestern Corporation	NWE	\$2.48	\$61.85	4.01%	4.09%	4.10%	4.10%	8.19%	0.00	\$2.53	1.08	2.34	\$2.63	1.17	2.25	\$2.74	1.27	2.17	\$2.86	1.37	2.08	\$2.97	1.48	2.00	\$3.09	\$75.61	\$51.00	\$61.85
Otter Tail Corporation	OTTR	\$1.56	\$46.64	3.34%	3.46%	6.90%	6.90%	10.36%	0.00	\$1.61	1.10	1.46	\$1.73	1.22	1.42	\$1.84	1.34	1.37	\$1.97	1.48	1.33	\$2.11	1.64	1.29	\$2.25	\$65.11	\$39.77	\$46.64
Pinnacle West Capital Corporation	PNW	\$3.32	\$81.00	4.10%	4.17%	3.37%	4.09%	8.15%	0.00	\$3.38	1.08	3.12	\$3.49	1.17	2.98	\$3.61	1.26	2.85	\$3.73	1.37	2.73	\$3.85	1.48	2.60	\$4.01	\$98.71	\$66.71	\$81.00
Portland General Electric Company	POR	\$1.72	\$46.73	3.68%	3.83%	8.07%	7.41%	11.33%	0.00	\$1.79	1.11	1.61	\$1.93	1.24	1.56	\$2.09	1.38	1.51	\$2.26	1.54	1.47	\$2.44	1.71	1.43	\$2.62	\$66.93	\$39.15	\$46.73
Southern Company	SO	\$2.64	\$62.35	4.23%	4.36%	5.80%	5.80%	10.16%	0.00	\$2.72	1.10	2.47	′\$2.87	1.21	2.37	\$3.04	1.34	2.27	\$3.22	1.47	2.18	\$3.40	1.62	2.10	\$3.60	\$82.66	\$50.96	\$62.35
Xcel Energy Inc.	XEL	\$1.83	\$66.89	2.74%	2.82%	6.13%	6.13%	8.95%	0.00	\$1.89	1.09	1.73	\$ \$2.00	1.19	1.69	\$2.12	1.29	1.64	\$2.25	1.41	1.60	\$2.39	1.54	1.56	\$2.54	\$90.08	\$58.67	\$66.89
Mean				3.32%	3.41%	5.75%	5.76%	9.17%		·																		
Mean (excluding ROE < 7%) [30]								9.17%																				
Flotation Cost								0.06%																				
Flotation Cost-Adjusted Result								9.23%																				
										I																		
				Standard Devi	iation [6]	1.66%																						
				Avg. less Star	ndard Dev [7]	4.09%																						
				Avg. plus Star	ndard Dev [8]	7.41%																						
Notes:				0.																								
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[1] Source: Schedule 6 [2] Source: Schedule 6 [2] Source: Schedule 6 [3] Equals [1] / [2] [4] Equals [3] x (1 + 0.50 x [5]) [5] Source: Schedule 6 [6] Standard Deviation of Column [5] [7] Mean of Column [5], minus [6] [8] Mean of Column [5], plus [6] [9] If [5] > [8], then [8]; If [5] < [7], then [7], Else [5] [10] ROE that sets [2] equal to [29] using Excel's goal seek function [11] = [2] x [4] [10] ROE that sets [2] [11] = [2] x [4] [12] = $(1 + [10]) ^ 1$ [13] = [11] / [12] [14] = [11] * (1 + [5])[15] = $(1 + [10]) ^ 2$ [16] = [14] / [15] [17] = [14] * (1 + [5])[18] = $(1 + [10]) ^ 3$ [19] = [17] / [18] [20] = [17] * (1 + [5])[20] = [17] * (1 + [5]) [21] = (1 + [10]) ^ 4 $\begin{bmatrix} 21 \\ - (1 + [10]) & 4 \\ \\ \begin{bmatrix} 22 \\ - 2 \end{bmatrix} = \begin{bmatrix} 20 \\ - 2 \end{bmatrix} / \begin{bmatrix} 21 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 23 \\ - 2 \end{bmatrix} = \begin{bmatrix} 20 \\ - 1 \end{bmatrix} / \begin{bmatrix} 1 + [5] \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 24 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 24 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} \\ \begin{bmatrix} 26 \\ - 2 \end{bmatrix} = \begin{bmatrix} 23 \\ - 2 \end{bmatrix} / \begin{bmatrix} 26 \\ - 2 \end{bmatrix} \\ \begin{bmatrix}$ $[20] = [23] \cdot (1 + [3])$ [27] = [26] / ([10] - [9]) [28] = [27] / [24] [29] = [13] + [16] + [19] + [22] + [25] + [28] [30] Excludes companies with ROEs less than the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826

30-DAY TWO-GROWTH DCF -- LOW GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[9]	[10]		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
					Expected	Low	Second								PV of			PV of			PV of			PV of		Year 5	PV of Year	Current
		Annualized	Stock	Dividend	Dividend	Growth	Growth					PV of Year	Year 2		Year	Year 3		Year	Year 4		Year	Year 5		Year	Year 6	Stock	5 Stock	Stock
Company	Ticker	Dividend	Price	Yield	Yield	Rate	Rate	Mean ROE	Check	Year 1 Div.	(1+k)^1	1 Div.	Div.	(1+k)^2	2 Div.	Div.	(1+k)^3	3 Div.	Div.	(1+k)^4	4 Div.	Div.	(1+k)^5	5 Div.	Div.	Price	Price	Price
Alliant Energy Corporation		¢1 G1	¢60 00	0.670/	2 740/	E 100/	E 100/	7 0 4 0 /	0.00	¢1 65	1 00	1 50	¢1 71	1 16	1 40	<u> </u>	1 05	1 1 5	¢1 00	1 25	1 4 2	¢0.01	1 46	1 20	ድጋ 10	ቀ77 ባባ	¢50.04	¢60.00
		\$1.01 \$0.00	\$00.22 ¢00.00	2.07%	2.74%	5.10%	5.10%	7.04%	0.00	CO.1¢	1.00	1.55	φ1.74 ¢0.40	1.10	1.49	Φ1.0Z	1.20	1.45	Φ1.9Z	1.30	1.42	φ2.01	1.40	1.30	Φ2.1Z	Φ11.ZZ	\$02.94 ¢70.74	\$00.22 \$00.22
Ameren Corporation	AEE	\$2.20	\$80.00	2.54%	2.62%	6.50%	6.50%	9.12%	0.00	\$2.27	1.09	2.08	\$2.4Z	1.19	2.03	\$2.58	1.30	1.98	\$2.74	1.42	1.94	\$2.92	1.55	1.89	\$3.11	\$118.73	\$76.74	\$80.00
American Electric Power Company, Inc.	AEP	\$2.96	\$88.93	3.33%	3.42%	5.70%	5.70%	9.12%	0.00	\$3.04	1.09	2.79	\$3.22	1.19	2.70	\$3.40	1.30	2.62	\$3.60	1.42	2.54	\$3.80	1.55	2.46	\$4.02	\$117.34	\$75.83	\$88.93
Avista Corporation	AVA	\$1.69	\$42.49	3.98%	4.04%	3.00%	3.00%	7.04%	0.00	\$1.72	1.07	1.60	\$1.77	1.15	1.54	\$1.82	1.23	1.48	\$1.87	1.31	1.43	\$1.93	1.41	1.37	\$1.99	\$49.25	\$35.06	\$42.49
CMS Energy Corporation	CMS	\$1.74	\$63.20	2.75%	2.84%	6.18%	6.18%	9.02%	0.00	\$1.79	1.09	1.65	\$1.90	1.19	1.60	\$2.02	1.30	1.56	\$2.15	1.41	1.52	\$2.28	1.54	1.48	\$2.42	\$85.30	\$55.39	\$63.20
Duke Energy Corporation	DUK	\$3.94	\$105.87	3.72%	3.82%	5.30%	5.30%	9.12%	0.00	\$4.04	1.09	3.71	\$4.26	1.19	3.58	\$4.48	1.30	3.45	\$4.72	1.42	3.33	\$4.97	1.55	3.21	\$5.24	\$137.07	\$88.59	\$105.87
Entergy Corporation	ETR	\$3.80	\$107.87	3.52%	3.55%	1.40%	2.68%	6.07%	0.00	\$3.83	1.06	3.61	\$3.88	1.13	3.45	\$3.93	1.19	3.30	\$3.99	1.27	3.15	\$4.05	1.34	3.01	\$4.15	\$122.67	\$91.36	\$107.87
Evergy, Inc.	EVRG	\$2.14	\$67.13	3.19%	3.28%	5.70%	5.70%	8.98%	0.00	\$2.20	1.09	2.02	\$2.33	1.19	1.96	\$2.46	1.29	1.90	\$2.60	1.41	1.84	\$2.75	1.54	1.79	\$2.90	\$88.57	\$57.62	\$67.13
IDACORP, Inc.	IDA	\$2.84	\$106.21	2.67%	2.72%	3.20%	3.20%	5.92%	0.00	\$2.89	1.06	2.72	\$2.98	1.12	2.65	\$3.07	1.19	2.59	\$3.17	1.26	2.52	\$3.27	1.33	2.46	\$3.38	\$124.33	\$93.27	\$106.21
MGE Energy, Inc.	MGEE	\$1.55	\$79.68	1.95%	1.99%	4.50%	4.50%	6.49%	0.00	\$1.58	1.06	1.49	\$1.66	1.13	1.46	\$1.73	1.21	1.43	\$1.81	1.29	1.41	\$1.89	1.37	1.38	\$1.98	\$99.29	\$72.51	\$79.68
NextEra Energy, Inc.	NEE	\$1.54	\$81.28	1.89%	1.97%	8.13%	6.79%	8.85%	0.00	\$1.60	1.09	1.47	\$1.73	1.18	1.46	\$1.87	1.29	1.45	\$2.03	1.40	1.44	\$2.19	1.53	1.43	\$2.34	\$113.13	\$74.02	\$81.28
NorthWestern Corporation	NWE	\$2.48	\$63.01	3.94%	3.99%	3.00%	3.00%	6.99%	0.00	\$2.52	1.07	2.35	\$2.59	1.14	2.26	\$2.67	1.22	2.18	\$2.75	1.31	2.10	\$2.83	1.40	2.02	\$2.92	\$73.05	\$52.10	\$63.01
Otter Tail Corporation	OTTR	\$1.56	\$52.62	2.96%	3.03%	4.70%	4.70%	7.73%	0.00	\$1.60	1.08	1.48	\$1.67	1.16	1.44	\$1.75	1.25	1.40	\$1.83	1.35	1.36	\$1.92	1.45	1.32	\$2.01	\$66.20	\$45.61	\$52.62
Pinnacle West Capital Corporation	PNW	\$3.32	\$80.74	4.11%	4.11%	0.10%	2.68%	6.43%	0.00	\$3.32	1.06	3.12	\$3.32	1.13	2.94	\$3.33	1.21	2.76	\$3.33	1.28	2.60	\$3.33	1.37	2.44	\$3.42	\$91.35	\$66.88	\$80.74
Portland General Electric Company	POR	\$1.72	\$50.02	3.44%	3.56%	7.10%	6.79%	10.39%	0.00	\$1.78	1.10	1.61	\$1.91	1.22	1.57	\$2.04	1.35	1.52	\$2.19	1.48	1.47	\$2.34	1.64	1.43	\$2.50	\$69.52	\$42.42	\$50.02
Southern Company	SO	\$2.64	\$65.11	4.05%	4.15%	4.90%	4.90%	9.05%	0.00	\$2.70	1.09	2.48	\$2.84	1.19	2.39	\$2.98	1.30	2.29	\$3.12	1.41	2.21	\$3.28	1.54	2.12	\$3.44	\$82.71	\$53.62	\$65.11
Xcel Energy Inc.	XEL	\$1.83	\$68.85	2.66%	2.74%	6.00%	6.00%	8.74%	0.00	\$1.88	1.09	1.73	\$2.00	1.18	1.69	\$2.12	1.29	1.65	\$2.24	1.40	1.61	\$2.38	1.52	1.57	\$2.52	\$92.14	\$60.61	\$68.85
Mean				3.14%	3.21%	4.74%	4.87%	8.05%																				
Mean (excluding ROE < 7%) [30]								8.75%																				
Flotation Cost								0.06%																				
Flotation Cost-Adjusted Result								8.81%																				
· · · · · · · · · · · · · · · · · · ·								0.0170		•																		
				Standard	Deviation [6]	2.05%																						
			A	vg. less Stan	idard Dev [7]	2.68%																						

Avg. plus Standard Dev [8] 6.79%

Notes:

[1] Source: Schedule 6 [2] Source: Schedule 6 [3] Equals [1] / [2] [4] Equals [3] x (1 + 0.50 x [5]) [5] Source: Schedule 6 [6] Standard Deviation of Column [5] [7] Mean of Column [5], minus [6] [8] Mean of Column [5], plus [6] [9] If [5] > [8], then [8]; If [5] < [7], then [7], Else [5] [10] ROE that sets [2] equal to [29] using Excel's goal seek function [11] = [2] \times [4] $[11] = [2] \times [4]$ $[12] = (1 + [10])^{1}$ [13] = [11] / [12][14] = [11] * (1 + [5]) $[15] = (1 + [10])^{2}$ [16] = [14] / [15][17] = [14] * (1 + [5]) $[18] = (1 + [10])^{3}$ [19] = [17] / [18][20] = [17] * (1 + [5]) $[21] = (1 + [10])^{4}$ [22] = [20] / [21] $\begin{bmatrix} 23 \\ 23 \end{bmatrix} = \begin{bmatrix} 20 \\ 1 \end{bmatrix} * (1 + \begin{bmatrix} 5 \\ 1 \end{bmatrix})$ $\begin{bmatrix} 24 \\ 24 \end{bmatrix} = (1 + \begin{bmatrix} 10 \\ 1 \end{bmatrix}) ^{5}$ $\begin{bmatrix} 25 \\ 25 \end{bmatrix} = \begin{bmatrix} 23 \\ 24 \end{bmatrix}$ $\begin{bmatrix} 25 \\ -25$

90-DAY TWO-GROWTH DCF -- LOW GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[9]	[10]		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
					Expected	Low	Second								PV of		Year 5	PV of Year	Current									
		Annualized	Stock	Dividend	Dividend	Growth	Growth					PV of Year	Year 2		Year	Year 3		Year	Year 4		Year	Year 5		Year	Year 6	Stock	5 Stock	Stock
Company	Ticker	Dividend	Price	Yield	Yield	Rate	Rate	Mean ROE	Check	Year 1 Div.	(1+k)^1	1 Div.	Div.	(1+k)^2	2 Div.	Div.	(1+k)^3	3 Div.	Div.	(1+k)^4	4 Div.	Div.	(1+k)^5	5 Div.	Div.	Price	Price	Price
Alliant Energy Corporation	LNT	\$1.61	\$58.15	2.77%	2.84%	5.10%	5.10%	7.94%	0.00	\$1.65	1.08	1.53	\$1.74	1.17	1.49	\$1.82	1.26	1.45	\$1.92	1.36	1.41	\$2.01	1.47	1.37	\$2.12	\$74.57	\$50.89	\$58.15
Ameren Corporation	AEE	\$2.20	\$84.71	2.60%	2.68%	6.50%	6.50%	9.18%	0.00	\$2.27	1.09	2.08	\$2.42	1.19	2.03	\$2.58	1.30	1.98	\$2.74	1.42	1.93	\$2.92	1.55	1.88	\$3.11	\$116.06	\$74.81	\$84.71
American Electric Power Company, Inc.	AEP	\$2.96	\$86.78	3.41%	3.51%	5.70%	5.70%	9.21%	0.00	\$3.04	1.09	2.79	\$3.22	1.19	2.70	\$3.40	1.30	2.61	\$3.60	1.42	2.53	\$3.80	1.55	2.45	\$4.02	\$114.50	\$73.71	\$86.78
Avista Corporation	AVA	\$1.69	\$43.99	3.84%	3.90%	3.00%	3.00%	6.90%	0.00	\$1.72	1.07	1.60	\$1.77	1.14	1.55	\$1.82	1.22	1.49	\$1.87	1.31	1.44	\$1.93	1.40	1.38	\$1.99	\$50.99	\$36.53	\$43.99
CMS Energy Corporation	CMS	\$1.74	\$62.23	2.80%	2.88%	6.18%	6.18%	9.06%	0.00	\$1.79	1.09	1.64	\$1.90	1.19	1.60	\$2.02	1.30	1.56	\$2.15	1.41	1.52	\$2.28	1.54	1.48	\$2.42	\$83.99	\$54.43	\$62.23
Duke Energy Corporation	DUK	\$3.94	\$102.73	3.84%	3.94%	5.30%	5.30%	9.24%	0.00	\$4.04	1.09	3.70	\$4.26	1.19	3.57	\$4.48	1.30	3.44	\$4.72	1.42	3.32	\$4.97	1.56	3.20	\$5.24	\$133.00	\$85.51	\$102.73
Entergy Corporation	ETR	\$3.80	\$106.09	3.58%	3.61%	1.40%	2.68%	6.13%	0.00	\$3.83	1.06	3.61	\$3.88	1.13	3.44	\$3.93	1.20	3.29	\$3.99	1.27	3.14	\$4.05	1.35	3.00	\$4.15	\$120.63	\$89.60	\$106.09
Evergy, Inc.	EVRG	\$2.14	\$64.15	3.34%	3.43%	5.70%	5.70%	9.13%	0.00	\$2.20	1.09	2.02	\$2.33	1.19	1.95	\$2.46	1.30	1.89	\$2.60	1.42	1.83	\$2.75	1.55	1.77	\$2.90	\$84.64	\$54.68	\$64.15
IDACORP, Inc.	IDA	\$2.84	\$102.15	2.78%	2.82%	3.20%	3.20%	6.02%	0.00	\$2.89	1.06	2.72	\$2.98	1.12	2.65	\$3.07	1.19	2.58	\$3.17	1.26	2.51	\$3.27	1.34	2.44	\$3.38	\$119.57	\$89.24	\$102.15
MGE Energy, Inc.	MGEE	\$1.55	\$76.66	2.02%	2.07%	4.50%	4.50%	6.57%	0.00	\$1.58	1.07	1.49	\$1.66	1.14	1.46	\$1.73	1.21	1.43	\$1.81	1.29	1.40	\$1.89	1.37	1.38	\$1.98	\$95.53	\$69.51	\$76.66
NextEra Energy, Inc.	NEE	\$1.54	\$76.61	2.01%	2.09%	8.13%	6.79%	8.98%	0.00	\$1.60	1.09	1.47	\$1.73	1.19	1.46	\$1.87	1.29	1.45	\$2.03	1.41	1.44	\$2.19	1.54	1.43	\$2.34	\$106.64	\$69.37	\$76.61
NorthWestern Corporation	NWE	\$2.48	\$63.40	3.91%	3.97%	3.00%	3.00%	6.97%	0.00	\$2.52	1.07	2.35	\$2.59	1.14	2.27	\$2.67	1.22	2.18	\$2.75	1.31	2.10	\$2.83	1.40	2.02	\$2.92	\$73.49	\$52.47	\$63.40
Otter Tail Corporation	OTTR	\$1.56	\$49.79	3.13%	3.21%	4.70%	4.70%	7.91%	0.00	\$1.60	1.08	1.48	\$1.67	1.16	1.44	\$1.75	1.26	1.39	\$1.83	1.36	1.35	\$1.92	1.46	1.31	\$2.01	\$62.65	\$42.82	\$49.79
Pinnacle West Capital Corporation	PNW	\$3.32	\$83.37	3.98%	3.98%	0.10%	2.68%	6.31%	0.00	\$3.32	1.06	3.12	\$3.32	1.13	2.94	\$3.33	1.20	2.77	\$3.33	1.28	2.61	\$3.33	1.36	2.46	\$3.42	\$94.36	\$69.47	\$83.37
Portland General Electric Company	POR	\$1.72	\$48.99	3.51%	3.64%	7.10%	6.79%	10.46%	0.00	\$1.78	1.10	1.61	\$1.91	1.22	1.56	\$2.04	1.35	1.52	\$2.19	1.49	1.47	\$2.34	1.64	1.42	\$2.50	\$68.10	\$41.41	\$48.99
Southern Company	SO	\$2.64	\$64.05	4.12%	4.22%	4.90%	4.90%	9.12%	0.00	\$2.70	1.09	2.48	\$2.84	1.19	2.38	\$2.98	1.30	2.29	\$3.12	1.42	2.20	\$3.28	1.55	2.12	\$3.44	\$81.36	\$52.58	\$64.05
Xcel Energy Inc.	XEL	\$1.83	\$69.17	2.65%	2.73%	6.00%	6.00%	8.73%	0.00	\$1.88	1.09	1.73	\$2.00	1.18	1.69	\$2.12	1.29	1.65	\$2.24	1.40	1.61	\$2.38	1.52	1.57	\$2.52	\$92.56	\$60.93	\$69.17
Mean				3 19%	3 27%	4 74%	4 87%	8 11%																				
Mean (excluding ROF < 7%) [30]				0.1070	0.2170	1.1 170	1.07 /0	9.00%																				
Flotation Cost								0.06%																				
Flotation Cost-Adjusted Result								9.06%																				
								0.0070																				
				Standard	Deviation [6]	2.05%																						
			A	vg. less Star	ndard Dev [7]	2.68%																						
			A	vg. plus Star	ndard Dev [8]	6.79%																						
Notes:				_																								
[1] Source: Schedule 6																												

[2] Source: Schedule 6 [2] Source: Schedule 0 [3] Equals [1] / [2] [4] Equals [3] \times (1 + 0.50 \times [5]) [5] Source: Schedule 6 [6] Standard Deviation of Column [5] [7] Mean of Column [5], minus [6] [8] Mean of Column [5], plus [6] [8] Mean of Column [5], plus [6] [9] If [5] > [8], then [8]; If [5] < [7], then [7], Else [5] [10] ROE that sets [2] equal to [29] using Excel's goal seek function $[11] = [2] \times [4]$ $[12] = (1 + [10])^{1}$ [13] = [11] / [12][13] - [11] / [12] [14] = [11] * (1 + [5]) $[15] = (1 + [10]) ^ 2$ [16] = [14] / [15] [17] = [14] * (1 + [5]) $[18] = (1 + [10]) ^ 3$ [19] = [17] / [18] [20] = [17] / [18][20] = [17] * (1 + [5]) [21] = (1 + [10]) ^ 4 [22] = [20] / [21] [22] = [20] / [21] [23] = [20] * (1 + [5]) $[24] = (1 + [10]) ^ 5$ [25] = [23] / [24] [26] = [23] * (1 + [9]) [27] = [26] / ([10] - [9]) [29] = [27] / [24]

[28] = [27] / [24] [29] = [13] + [16] + [19] + [22] + [25] + [28] [30] Excludes companies with ROEs less than the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826

180-DAY TWO-GROWTH DCF -- LOW GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[9]	[10]		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
					Expected	Low	Second								PV of			PV of			PV of			PV of		Year 5	PV of Year	Current
		Annualized	Stock	Dividend	Dividend	Growth	Growth					PV of Year	Year 2		Year	Year 3		Year	Year 4		Year	Year 5		Year	Year 6	Stock	5 Stock	Stock
Company	Ticker	Dividend	Price	Yield	Yield	Rate	Rate	Mean ROE	Check	Year 1 Div.	(1+k)^1	1 Div.	Div.	(1+k)^2	2 Div.	Div.	(1+k)^3	3 Div.	Div.	(1+k)^4	4 Div.	Div.	(1+k)^5	5 Div.	Div.	Price	Price	Price
Alliant Energy Corporation	LNT	\$1.61	\$54.53	2.95%	3.03%	5.10%	5.10%	8.13%	0.00	\$1.65	1.08	1.53	\$1.74	1.17	1.48	\$1.82	1.26	1.44	\$1.92	1.37	1.40	\$2.01	1.48	1.36	\$2.12	\$69.93	\$47.31	\$54.53
Ameren Corporation	AEE	\$2.20	\$80.69	2.73%	2.82%	6.50%	6.50%	9.32%	0.00	\$2.27	1.09	2.08	, \$2.42	1.19	2.02	\$2.58	1.31	1.97	\$2.74	1.43	1.92	\$2.92	1.56	1.87	\$3.11	\$110.55	\$70.82	\$80.69
American Electric Power Company. Inc.	AEP	\$2.96	\$84.41	3.51%	3.61%	5.70%	5.70%	9.31%	0.00	\$3.04	1.09	2.79	\$3.22	1.19	2.69	\$3.40	1.31	2.60	\$3.60	1.43	2.52	\$3.80	1.56	2.44	\$4.02	\$111.37	\$71.37	\$84.41
Avista Corporation	AVA	\$1.69	\$43.02	3.93%	3.99%	3.00%	3.00%	6.99%	0.00	\$1.72	1.07	1.60	\$1.77	1.14	1.54	\$1.82	1.22	1.49	\$1.87	1.31	1.43	\$1.93	1.40	1.38	\$1.99	\$49.87	\$35.58	\$43.02
CMS Energy Corporation	CMS	\$1.74	\$60.42	2.88%	2.97%	6.18%	6.18%	9.15%	0.00	\$1.79	1.09	1.64	\$1.90	1.19	1.60	\$2.02	1.30	1.56	\$2.15	1.42	1.51	\$2.28	1.55	1.47	\$2.42	\$81.54	\$52.64	\$60.42
Duke Energy Corporation	DUK	\$3.94	\$97.61	4.04%	4.14%	5.30%	5.30%	9.44%	0.00	\$4.04	1.09	3.70	\$4.26	1.20	3.56	\$4.48	1.31	3.42	\$4.72	1.43	3.29	\$4.97	1.57	3.17	\$5.24	\$126.37	\$80.48	\$97.61
Entergy Corporation	ETR	\$3.80	\$101.41	3.75%	3.77%	1.40%	2.68%	6.29%	0.00	\$3.83	1.06	3.60	\$3.88	1.13	3.43	\$3.93	1.20	3.28	\$3.99	1.28	3.13	\$4.05	1.36	2.98	\$4.15	\$115.29	\$84.99	\$101.41
Evergy, Inc.	EVRG	\$2.14	\$60.23	3.55%	3.65%	5.70%	5.70%	9.35%	0.00	\$2.20	1.09	2.01	\$2.33	1.20	1.95	\$2.46	1.31	1.88	\$2.60	1.43	1.82	\$2.75	1.56	1.76	\$2.90	\$79.47	\$50.82	\$60.23
IDACORP, Inc.	IDA	\$2.84	\$97.87	2.90%	2.95%	3.20%	3.20%	6.15%	0.00	\$2.89	1.06	2.72	\$2.98	1.13	2.64	\$3.07	1.20	2.57	\$3.17	1.27	2.50	\$3.27	1.35	2.43	\$3.38	\$114.56	\$85.01	\$97.87
MGE Energy, Inc.	MGEE	\$1.55	\$72.76	2.13%	2.18%	4.50%	4.50%	6.68%	0.00	\$1.58	1.07	1.49	\$1.66	1.14	1.46	\$1.73	1.21	1.43	\$1.81	1.30	1.40	\$1.89	1.38	1.37	\$1.98	\$90.67	\$65.62	\$72.76
NextEra Energy, Inc.	NEE	\$1.54	\$77.14	2.00%	2.08%	8.13%	6.79%	8.97%	0.00	\$1.60	1.09	1.47	\$1.73	1.19	1.46	\$1.87	1.29	1.45	\$2.03	1.41	1.44	\$2.19	1.54	1.43	\$2.34	\$107.38	\$69.90	\$77.14
NorthWestern Corporation	NWE	\$2.48	\$61.85	4.01%	4.07%	3.00%	3.00%	7.07%	0.00	\$2.52	1.07	2.35	\$2.59	1.15	2.26	\$2.67	1.23	2.18	\$2.75	1.31	2.09	\$2.83	1.41	2.01	\$2.92	\$71.70	\$50.95	\$61.85
Otter Tail Corporation	OTTR	\$1.56	\$46.64	3.34%	3.42%	4.70%	4.70%	8.12%	0.00	\$1.60	1.08	1.48	\$1.67	1.17	1.43	\$1.75	1.26	1.38	\$1.83	1.37	1.34	\$1.92	1.48	1.30	\$2.01	\$58.68	\$39.71	\$46.64
Pinnacle West Capital Corporation	PNW	\$3.32	\$81.00	4.10%	4.10%	0.10%	2.68%	6.42%	0.00	\$3.32	1.06	3.12	\$3.32	1.13	2.94	\$3.33	1.21	2.76	\$3.33	1.28	2.60	\$3.33	1.37	2.44	\$3.42	\$91.65	\$67.14	\$81.00
Portland General Electric Company	POR	\$1.72	\$46.73	3.68%	3.81%	7.10%	6.79%	10.64%	0.00	\$1.78	1.11	1.61	\$1.91	1.22	1.56	\$2.04	1.35	1.51	\$2.19	1.50	1.46	\$2.34	1.66	1.41	\$2.50	\$64.95	\$39.18	\$46.73
Southern Company	SO	\$2.64	\$62.35	4.23%	4.34%	4.90%	4.90%	9.24%	0.00	\$2.70	1.09	2.48	\$2.84	1.19	2.38	\$2.98	1.30	2.28	\$3.12	1.42	2.19	\$3.28	1.56	2.11	\$3.44	\$79.20	\$50.92	\$62.35
Xcel Energy Inc.	XEL	\$1.83	\$66.89	2.74%	2.82%	6.00%	6.00%	8.82%	0.00	\$1.88	1.09	1.73	\$2.00	1.18	1.69	\$2.12	1.29	1.64	\$2.24	1.40	1.60	\$2.38	1.53	1.56	\$2.52	\$89.51	\$58.67	\$66.89
Mean				3.32%	3.40%	4.74%	4.87%	8.24%																				
Mean (excluding ROE < 7%) [30]								8.96%																				
Flotation Cost								0.06%																				
Flotation Cost-Adjusted Result								9.03%																				
				e		/																						
			,	Standard	Deviation [6]	2.05%																						

Avg. less Standard Dev [7]2.68%Avg. plus Standard Dev [8]6.79%

Notes:

[1] Source: Schedule 6 [2] Source: Schedule 6 [3] Equals [1] / [2] [4] Equals [3] x (1 + 0.50 x [5]) [5] Source: Schedule 6 [6] Standard Deviation of Column [5] [7] Mean of Column [5], minus [6] [8] Mean of Column [5], plus [6]
[9] If [5] > [8], then [8]; If [5] < [7], then [7], Else [5]
[10] ROE that sets [2] equal to [29] using Excel's goal seek function $[11] = [2] \times [4]$ $[12] = (1 + [10])^{1}$ [13] = [11] / [12][14] = [11] * (1 + [5]) [15] = (1 + [10]) ^ 2 [16] = [14] / [15] [17] = [14] * (1 + [5]) $[18] = (1 + [10])^{3}$ [19] = [17] / [18][20] = [17] * (1 + [5]) $[21] = (1 + [10])^{4}$ [22] = [20] / [21] $\begin{bmatrix} 23 \\ 23 \end{bmatrix} = \begin{bmatrix} 20 \\ 1 \end{bmatrix} * (1 + \begin{bmatrix} 5 \\ 1 \end{bmatrix})$ $\begin{bmatrix} 24 \\ 24 \end{bmatrix} = (1 + \begin{bmatrix} 10 \\ 1 \end{bmatrix}) ^{5}$ $\begin{bmatrix} 25 \\ 25 \end{bmatrix} = \begin{bmatrix} 23 \\ 24 \end{bmatrix}$ $\begin{bmatrix} 25 \\ -25$

30-DAY TWO-GROWTH DCF -- HIGH GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[9]	[10]		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
					Expected	High	Second								PV of			PV of			PV of			PV of		Year 5	PV of Year	Current
		Annualized	Stock	Dividend	Dividend	Growth	Growth					PV of Year	Year 2		Year	Year 3		Year	Year 4		Year	Year 5		Year	Year 6	Stock	5 Stock	Stock
Company	Ticker	Dividend	Price	Yield	Yield	Rate	Rate	Mean ROE	Check	Year 1 Div.	. (1+k)^1	1 Div.	Div.	(1+k)^2	2 Div.	Div.	(1+k)^3	3 Div.	Div.	(1+k)^4	4 Div.	Div.	(1+k)^5	5 Div.	Div.	Price	Price	Price
		• · • ·				/				• • •			··			• · • -			• · • • •			** **			* ~ /=	<u>.</u>		
Alliant Energy Corporation		\$1.61	\$60.22	2.67%	2.75%	5.60%	5.60%	8.35%	0.00	\$1.60	5 1.08	1.53	\$1.75	1.17	1.49	\$1.85	1.27	1.45	\$1.95	1.38	1.41	\$2.06	1.49	1.38	\$2.17	\$79.08	\$52.96	\$60.22
Ameren Corporation	AEE	\$2.20	\$86.66	2.54%	2.64%	7.70%	7.70%	10.34%	0.00	\$2.28	3 1.10	2.07	\$2.46	1.22	2.02	\$2.65	1.34	1.97	\$2.85	1.48	1.93	\$3.07	1.64	1.88	\$3.31	\$125.57	\$76.79	\$86.66
American Electric Power Company, Inc.	AEP	\$2.96	\$88.93	3.33%	3.44%	6.50%	6.50%	9.94%	0.00	\$3.06	5 1.10	2.78	\$3.25	1.21	2.69	\$3.47	1.33	2.61	\$3.69	1.46	2.53	\$3.93	1.61	2.45	\$4.19	\$121.84	\$75.87	\$88.93
Avista Corporation	AVA	\$1.69	\$42.49	3.98%	4.10%	6.20%	6.20%	10.30%	0.00	\$1.74	1.10	1.58	\$1.85	1.22	1.52	\$1.97	1.34	1.46	\$2.09	1.48	1.41	\$2.22	1.63	1.36	\$2.35	\$57.39	\$35.15	\$42.49
CMS Energy Corporation	CMS	\$1.74	\$63.20	2.75%	2.86%	7.50%	7.50%	10.36%	0.00	\$1.8 ⁻	1 1.10	1.64	\$1.94	1.22	1.59	\$2.09	1.34	1.55	\$2.24	1.48	1.51	\$2.41	1.64	1.47	\$2.59	\$90.74	\$55.44	\$63.20
Duke Energy Corporation	DUK	\$3.94	\$105.87	3.72%	3.85%	7.00%	7.00%	10.85%	0.00	\$4.08	3 1.11	3.68	\$4.36	1.23	3.55	\$4.67	1.36	3.43	\$5.00	1.51	3.31	\$5.35	1.67	3.19	\$5.72	\$148.49	\$88.72	\$105.87
Entergy Corporation	ETR	\$3.80	\$107.87	3.52%	3.59%	3.85%	4.83%	8.30%	0.00	\$3.87	7 1.08	3.58	\$4.02	1.17	3.43	\$4.18	1.27	3.29	\$4.34	1.38	3.15	\$4.50	1.49	3.02	\$4.72	\$136.18	\$91.40	\$107.87
Evergy, Inc.	EVRG	\$2.14	\$67.13	3.19%	3.32%	8.00%	8.00%	11.32%	0.00	\$2.23	3 1.11	2.00	\$2.40	1.24	1.94	\$2.60	1.38	1.88	\$2.80	1.54	1.83	\$3.03	1.71	1.77	\$3.27	\$98.63	\$57.71	\$67.13
IDACORP, Inc.	IDA	\$2.84	\$106.21	2.67%	2.73%	4.00%	4.83%	7.48%	0.00	\$2.90) 1.07	2.70	\$3.01	1.16	2.61	\$3.13	1.24	2.52	\$3.26	1.33	2.44	\$3.39	1.43	2.36	\$3.55	\$134.22	\$93.58	\$106.21
MGE Energy, Inc.	MGEE	\$1.55	\$79.68	1.95%	2.00%	5.60%	5.60%	7.60%	0.00	\$1.59	9 1.08	1.48	\$1.68	1.16	1.45	\$1.78	1.25	1.43	\$1.88	1.34	1.40	\$1.98	1.44	1.37	\$2.09	\$104.63	\$72.54	\$79.68
NextEra Energy, Inc.	NEE	\$1.54	\$81.28	1.89%	1.99%	10.50%	8.42%	10.56%	0.00	\$1.62	2 1.11	1.47	\$1.79	1.22	1.47	\$1.98	1.35	1.46	\$2.19	1.49	1.46	\$2.42	1.65	1.46	\$2.62	\$122.20	\$73.96	\$81.28
NorthWestern Corporation	NWE	\$2.48	\$63.01	3.94%	4.03%	4.80%	4.83%	8.86%	0.00	\$2.54	1.09	2.33	\$2.66	1.19	2.25	\$2.79	1.29	2.16	\$2.92	1.40	2.08	\$3.06	1.53	2.00	\$3.21	\$79.78	\$52.19	\$63.01
Otter Tail Corporation	OTTR	\$1.56	\$52.62	2.96%	3.10%	9.00%	8.42%	11.58%	0.00	\$1.63	3 1.12	1.46	\$1.78	1.25	1.43	\$1.94	1.39	1.39	\$2.11	1.55	1.36	\$2.30	1.73	1.33	\$2.49	\$78.95	\$45.64	\$52.62
Pinnacle West Capital Corporation	PNW	\$3.32	\$80.74	4.11%	4.21%	5.00%	5.00%	9.21%	0.00	\$3.40	0 1.09	3.12	\$3.57	1.19	3.00	\$3.75	1.30	2.88	\$3.94	1.42	2.77	\$4.14	1.55	2.66	\$4.34	\$103.04	\$66.31	\$80.74
Portland General Electric Company	POR	\$1.72	\$50.02	3.44%	3.59%	8.60%	8.42%	12.03%	0.00	\$1.79	9 1.12	1.60	\$1.95	1.26	1.55	\$2.12	1.41	1.50	\$2.30	1.58	1.46	\$2.50	1.76	1.41	\$2.71	\$74.97	\$42.49	\$50.02
Southern Company	SO	\$2.64	\$65.11	4.05%	4.19%	6.50%	6.50%	10.69%	0.00	\$2.73	3 1.11	2.46	\$2.90	1.23	2.37	\$3.09	1.36	2.28	\$3.29	1.50	2.19	\$3.51	1.66	2.11	\$3.73	\$89.21	\$53.69	\$65.11
Xcel Energy Inc.	XEL	\$1.83	\$68.85	2.66%	2.74%	6.30%	6.30%	9.04%	0.00	\$1.89	9 1.09	1.73	\$2.01	1.19	1.69	\$2.13	1.30	1.65	\$2.27	1.41	1.60	\$2.41	1.54	1.56	\$2.56	\$93.45	\$60.62	\$68.85
Mean				3.14%	3.24%	6.63%	6.57%	9.81%		·																		
Mean (excluding ROE < 7%) [30]								9.81%																				
Flotation Cost								0.06%																				
Flotation Cost-Adjusted Result								9.87%																				
				_																								
				Standard	Deviation [6]	1.79%																						
			A	Avg. less Stai	ndard Dev [7]	4.83%																						
			A	vg. plus Sta	ndard Dev [8]	8.42%																						

Notes: [1] Source: Schedule 6 [2] Source: Schedule 6 [3] Equals [1] / [2] [4] Equals [3] x (1 + 0.50 x [5]) [5] Source: Schedule 6 [6] Standard Deviation of Column [5][7] Mean of Column [5], minus [6] [8] Mean of Column [5], plus [6] [9] If [5] > [8], then [8]; If [5] < [7], then [7], Else [5] [10] ROE that sets [2] equal to [29] using Excel's goal seek function $[11] = [2] \times [4]$ $[12] = (1 + [10])^{1}$ [13] = [11] / [12][14] = [11] * (1 + [5]) $[15] = (1 + [10])^{2}$ [16] = [14] / [15] [17] = [14] * (1 + [5]) $[18] = (1 + [10])^{3}$ [19] = [17] / [18][20] = [17] * (1 + [5]) [21] = (1 + [10]) ^ 4 [22] = [20] / [21] [22] - [20] / [21] [23] = [20] * (1 + [5]) $[24] = (1 + [10]) ^{5}$ [25] = [23] / [24] [26] = [23] * (1 + [9]) [27] = [26] / ([10] - [9]) [28] = [27] / [24] [20] = [12] + [16] + [10] + [20]

[29] = [13] + [16] + [19] + [22] + [25] + [28] [30] Excludes companies with ROEs less than the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826

90-DAY TWO-GROWTH DCF -- HIGH GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[9]	[10]		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
					Expected	High	Second								PV of		Year 5	PV of Year	Current									
		Annualized	Stock	Dividend	Dividend	Growth	Growth					PV of Year	Year 2		Year	Year 3		Year	Year 4		Year	Year 5		Year	Year 6	Stock	5 Stock	Stock
Company	Ticker	Dividend	Price	Yield	Yield	Rate	Rate	Mean ROE	Check	Year 1 Div.	(1+k)^1	1 Div.	Div.	(1+k)^2	2 Div.	Div.	(1+k)^3	3 Div.	Div.	(1+k)^4	4 Div.	Div.	(1+k)^5	5 Div.	Div.	Price	Price	Price
Alliant Energy Corporation	LNT	\$1.61	\$58.15	2.77%	2.85%	5.60%	5.60%	8.45%	0.00	\$1.66	1.08	1.53	\$1.75	1.18	1.49	\$1.85	1.28	1.45	\$1.95	1.38	1.41	\$2.06	1.50	1.37	\$2.17	\$76.36	\$50.91	\$58.15
Ameren Corporation	AEE	\$2.20	\$84.71	2.60%	2.70%	7.70%	7.70%	10.40%	0.00	\$2.28	1.10	2.07	\$2.46	1.22	2.02	\$2.65	1.35	1.97	\$2.85	1.49	1.92	\$3.07	1.64	1.87	\$3.31	\$122.75	\$74.86	\$ \$84.71
American Electric Power Company, Inc.	AEP	\$2.96	\$86.78	3.41%	3.52%	6.50%	6.50%	10.02%	0.00	\$3.06	1.10	2.78	\$3.25	1.21	2.69	\$3.47	1.33	2.60	\$3.69	1.47	2.52	\$3.93	1.61	2.44	\$4.19	\$118.90	\$73.75	\$86.78
Avista Corporation	AVA	\$1.69	\$43.99	3.84%	3.96%	6.20%	6.20%	10.16%	0.00	\$1.74	1.10	1.58	\$1.85	1.21	1.52	\$1.97	1.34	1.47	\$2.09	1.47	1.42	\$2.22	1.62	1.37	\$2.35	\$59.42	\$36.63	\$43.99
CMS Energy Corporation	CMS	\$1.74	\$62.23	2.80%	2.90%	7.50%	7.50%	10.40%	0.00	\$1.81	1.10	1.64	\$1.94	1.22	1.59	\$2.09	1.35	1.55	\$2.24	1.49	1.51	\$2.41	1.64	1.47	\$2.59	\$89.35	\$54.48	\$62.23
Duke Energy Corporation	DUK	\$3.94	\$102.73	3.84%	3.97%	7.00%	7.00%	10.97%	0.00	\$4.08	1.11	3.67	\$4.36	1.23	3.54	\$4.67	1.37	3.42	\$5.00	1.52	3.29	\$5.35	1.68	3.18	\$5.72	\$144.09	\$85.63	\$\$102.73
Entergy Corporation	ETR	\$3.80	\$106.09	3.58%	3.65%	3.85%	4.83%	8.36%	0.00	\$3.87	1.08	3.57	\$4.02	1.17	3.43	\$4.18	1.27	3.28	\$4.34	1.38	3.15	\$4.50	1.49	3.02	\$4.72	\$133.92	\$89.65	\$106.09
Evergy, Inc.	EVRG	\$2.14	\$64.15	3.34%	3.47%	8.00%	8.00%	11.47%	0.00	\$2.23	1.11	2.00	\$2.40	1.24	1.93	\$2.60	1.39	1.87	\$2.80	1.54	1.82	\$3.03	1.72	1.76	\$3.27	\$94.25	\$54.77	\$64.15
IDACORP, Inc.	IDA	\$2.84	\$102.15	2.78%	2.84%	4.00%	4.83%	7.59%	0.00	\$2.90	1.08	2.69	\$3.01	1.16	2.60	\$3.13	1.25	2.52	\$3.26	1.34	2.43	\$3.39	1.44	2.35	\$3.55	\$129.07	\$89.55	\$102.15
MGE Energy, Inc.	MGEE	\$1.55	\$76.66	2.02%	2.08%	5.60%	5.60%	7.68%	0.00	\$1.59	1.08	1.48	\$1.68	1.16	1.45	\$1.78	1.25	1.42	\$1.88	1.34	1.40	\$1.98	1.45	1.37	\$2.09	\$100.67	\$69.54	\$76.66
NextEra Energy, Inc.	NEE	\$1.54	\$76.61	2.01%	2.12%	10.50%	8.42%	10.69%	0.00	\$1.62	1.11	1.46	\$1.79	1.23	1.46	\$1.98	1.36	1.46	\$2.19	1.50	1.46	\$2.42	1.66	1.45	\$2.62	\$115.20	\$69.32	\$76.61
NorthWestern Corporation	NWE	\$2.48	\$63.40	3.91%	4.01%	4.80%	4.83%	8.83%	0.00	\$2.54	1.09	2.33	\$2.66	1.18	2.25	\$2.79	1.29	2.16	\$2.92	1.40	2.08	\$3.06	1.53	2.01	\$3.21	\$80.26	\$52.56	\$63.40
Otter Tail Corporation	OTTR	\$1.56	\$49.79	3.13%	3.27%	9.00%	8.42%	11.76%	0.00	\$1.63	1.12	1.46	\$1.78	1.25	1.42	\$1.94	1.40	1.39	\$2.11	1.56	1.35	\$2.30	1.74	1.32	\$2.49	\$74.71	\$42.85	\$49.79
Pinnacle West Capital Corporation	PNW	\$3.32	\$83.37	3.98%	4.08%	5.00%	5.00%	9.08%	0.00	\$3.40	1.09	3.12	\$3.57	1.19	3.00	\$3.75	1.30	2.89	\$3.94	1.42	2.78	\$4.14	1.54	2.68	\$4.34	\$106.41	\$68.90	\$83.37
Portland General Electric Company	POR	\$1.72	\$48.99	3.51%	3.66%	8.60%	8.42%	12.10%	0.00	\$1.79	1.12	1.60	\$1.95	1.26	1.55	\$2.12	1.41	1.50	\$2.30	1.58	1.45	\$2.50	1.77	1.41	\$2.71	\$73.43	\$41.47	\$48.99
Southern Company	SO	\$2.64	\$64.05	4.12%	4.26%	6.50%	6.50%	10.76%	0.00	\$2.73	1.11	2.46	\$2.90	1.23	2.37	\$3.09	1.36	2.28	\$3.29	1.50	2.19	\$3.51	1.67	2.10	, \$3.73	\$87.76	\$52.66	\$64.05
Xcel Energy Inc.	XEL	\$1.83	\$69.17	2.65%	2.73%	6.30%	6.30%	9.03%	0.00	\$1.89	1.09	1.73	\$2.01	1.19	1.69	\$2.13	1.30	1.65	\$2.27	1.41	1.60	\$2.41	1.54	1.56	\$2.56	\$93.88	\$60.94	\$69.17
Mean				3.19%	3.30%	6.63%	6.57%	9.87%																				
Mean (excluding ROE < 7%) [30]								9.87%																				
Flotation Cost								0.06%																				
Flotation Cost-Adjusted Result								9.93%																				

Standard Deviation [6] 1.79% Avg. less Standard Dev [7] 4.83%

Avg. plus Standard Dev [8] 8.42%

Notes: [1] Source: Schedule 6 [2] Source: Schedule 6 [3] Equals [1] / [2] [4] Equals [3] x (1 + 0.50 x [5]) [5] Source: Schedule 6 [6] Standard Deviation of Column [5] [7] Mean of Column [5], minus [6] [8] Mean of Column [5], plus [6] [9] If [5] > [8], then [8]; If [5] < [7], then [7], Else [5] [10] ROE that sets [2] equal to [29] using Excel's goal seek function $\begin{bmatrix} 10 \\ 11 \end{bmatrix} \begin{bmatrix} 2 \\ 12 \end{bmatrix} \times \begin{bmatrix} 4 \\ 12 \end{bmatrix} = (1 + \begin{bmatrix} 10 \\ 12 \end{bmatrix})^{1}$ $\begin{bmatrix} 13 \\ 12 \end{bmatrix} = \begin{bmatrix} 11 \\ 12 \end{bmatrix}$ [14] = [11] * (1 + [5]) [15] = (1 + [10]) ^ 2 [13] = (1 + [13]) + 2 [16] = [14] / [15] [17] = [14] * (1 + [5]) $[18] = (1 + [10]) ^ 3$ [19] = [17] / [18] [10] = (17) + (17) + (17)[20] = [17] * (1 + [5]) [21] = (1 + [10]) ^ 4 $[21] = (1 + [10]) \times 4$ [22] = [20] / [21] $[23] = [20] \times (1 + [5])$ $[24] = (1 + [10]) \wedge 5$ [25] = [23] / [24] $[26] = [23] \times (1 + [9])$ [27] = [26] / ([10] - [9]) [29] = [27] / [24][28] = [27] / [24] [29] = [13] + [16] + [19] + [22] + [25] + [28] [30] Excludes companies with ROEs less than the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826

180-DAY TWO-GROWTH DCF -- HIGH GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[9]	[10]		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
					Expected	High	Second								PV of			PV of			PV of			PV of		Year 5	PV of Year	Current
		Annualized	Stock	Dividend	Dividend	Growth	Growth					PV of Year	Year 2		Year	Year 3		Year	Year 4		Year	Year 5		Year	Year 6	Stock	5 Stock	Stock
Company	Ticker	Dividend	Price	Yield	Yield	Rate	Rate	Mean ROE	Check	Year 1 Div.	(1+k)^1	1 Div.	Div.	(1+k)^2	2 Div.	Div.	(1+k)^3	3 Div.	Div. (1+k)^4	4 Div.	Div.	(1+k)^5	5 Div.	Div.	Price	Price	Price
Alliant Energy Corporation	LNT	\$1.61	\$54.53	2.95%	3.04%	5.60%	5.60%	8.64%	0.00	\$1.66	1.09	1.52	\$1.75	1.18	1.48	\$1.85	1.28	1.44	\$1.95	1.39	1.40	\$2.06	1.51	1.36	\$2.17	\$71.61	\$47.33	\$54.53
Ameren Corporation	AEE	\$2.20	\$80.69	2.73%	2.83%	7.70%	7.70%	10.53%	0.00	\$2.28	1.11	2.07	\$2.46	1.22	2.01	\$2.65	1.35	1.96	\$2.85	1.49	1.91	\$3.07	1.65	1.86	\$3.31	\$116.92	\$70.87	\$80.69
American Electric Power Company. Inc.	AEP	\$2.96	\$84.41	3.51%	3.62%	6.50%	6.50%	10.12%	0.00	\$3.06	1.10	2.78	\$3.25	1.21	2.68	\$3.47	1.34	2.60	\$3.69	1.47	2.51	\$3.93	1.62	2.43	\$4.19	\$115.65	\$71.42	\$84.41
Avista Corporation	AVA	\$1.69	\$43.02	3.93%	4.05%	6.20%	6.20%	10.25%	0.00	\$1.74	1.10	1.58	\$1.85	1.22	1.52	\$1.97	1.34	1.47	\$2.09	1.48	1.41	\$2.22	1.63	1.36	\$2.35	\$58.11	\$35.68	\$43.02
CMS Energy Corporation	CMS	\$1.74	\$60.42	2.88%	2.99%	7.50%	7.50%	10.49%	0.00	\$1.81	1.10	1.63	\$1.94	1.22	1.59	\$2.09	1.35	1.55	\$2.24	1.49	1.50	\$2.41	1.65	1.46	\$2.59	\$86.74	\$52.68	\$60.42
Duke Energy Corporation	DUK	\$3.94	\$97.61	4.04%	4.18%	7.00%	7.00%	11.18%	0.00	\$4.08	1.11	3.67	\$4.36	1.24	3.53	\$4.67	1.37	3.40	\$5.00	1.53	3.27	\$5.35	1.70	3.15	\$5.72	\$136.91	\$80.60	\$97.61
Entergy Corporation	ETR	\$3.80	\$101.41	3.75%	3.82%	3.85%	4.83%	8.52%	0.00	\$3.87	1.09	3.57	\$4.02	1.18	3.42	\$4.18	1.28	3.27	\$4.34	1.39	3.13	\$4.50	1.51	2.99	\$4.72	\$128.00	\$85.04	\$101.41
Evergy, Inc.	EVRG	\$2.14	\$60.23	3.55%	3.70%	8.00%	8.00%	11.70%	0.00	\$2.23	1.12	1.99	\$2.40	1.25	1.93	\$2.60	1.39	1.86	\$2.80	1.56	1.80	\$3.03	1.74	1.74	\$3.27	\$88.50	\$50.91	\$60.23
IDACORP, Inc.	IDA	\$2.84	\$97.87	2.90%	2.96%	4.00%	4.83%	7.71%	0.00	\$2.90	1.08	2.69	\$3.01	1.16	2.60	\$3.13	1.25	2.51	\$3.26	1.35	2.42	\$3.39	1.45	2.34	\$3.55	\$123.65	\$85.31	\$97.87
MGE Energy, Inc.	MGEE	\$1.55	\$72.76	2.13%	2.19%	5.60%	5.60%	7.79%	0.00	\$1.59	1.08	1.48	\$1.68	1.16	1.45	\$1.78	1.25	1.42	\$1.88	1.35	1.39	\$1.98	1.46	1.36	\$2.09	\$95.54	\$65.66	\$72.76
NextEra Energy, Inc.	NEE	\$1.54	\$77.14	2.00%	2.10%	10.50%	8.42%	10.68%	0.00	\$1.62	1.11	1.46	\$1.79	1.22	1.46	\$1.98	1.36	1.46	\$2.19	1.50	1.46	\$2.42	1.66	1.46	\$2.62	\$116.00	\$69.84	\$77.14
NorthWestern Corporation	NWE	\$2.48	\$61.85	4.01%	4.11%	4.80%	4.83%	8.93%	0.00	\$2.54	1.09	2.33	\$2.66	1.19	2.24	\$2.79	1.29	2.16	\$2.92	1.41	2.08	\$3.06	1.53	2.00	\$3.21	\$78.30	\$51.04	\$61.85
Otter Tail Corporation	OTTR	\$1.56	\$46.64	3.34%	3.50%	9.00%	8.42%	11.99%	0.00	\$1.63	1.12	1.46	\$1.78	1.25	1.42	\$1.94	1.40	1.38	\$2.11	1.57	1.34	\$2.30	1.76	1.31	\$2.49	\$69.99	\$39.74	\$46.64
Pinnacle West Capital Corporation	PNW	\$3.32	\$81.00	4.10%	4.20%	5.00%	5.00%	9.20%	0.00	\$3.40	1.09	3.12	\$3.57	1.19	3.00	\$3.75	1.30	2.88	\$3.94	1.42	2.77	\$4.14	1.55	2.66	\$4.34	\$103.38	\$66.57	\$81.00
Portland General Electric Company	POR	\$1.72	\$46.73	3.68%	3.84%	8.60%	8.42%	12.28%	0.00	\$1.79	1.12	1.60	\$1.95	1.26	1.55	\$2.12	1.42	1.49	\$2.30	1.59	1.45	\$2.50	1.78	1.40	\$2.71	\$70.04	\$39.24	\$46.73
Southern Company	SO	\$2.64	\$62.35	4.23%	4.37%	6.50%	6.50%	10.87%	0.00	\$2.73	1.11	2.46	\$2.90	1.23	2.36	\$3.09	1.36	2.27	\$3.29	1.51	2.18	\$3.51	1.68	2.09	\$3.73	\$85.43	\$50.99	\$62.35
Xcel Energy Inc.	XEL	\$1.83	\$66.89	2.74%	2.82%	6.30%	6.30%	9.12%	0.00	\$1.89	1.09	1.73	\$2.01	1.19	1.69	\$2.13	1.30	1.64	\$2.27	1.42	1.60	\$2.41	1.55	1.56	\$2.56	\$90.79	\$58.68	\$66.89
Mean				3.32%	3.43%	6.63%	6.57%	10.00%																				
Mean (excluding ROE < 7%) [30]								10.00%																				
Flotation Cost								0.06%																				
Flotation Cost-Adjusted Result								10.06%																				
				Standard	Deviation [6]	1,79%																						
			A	va. less Sta	ndard Dev [7]	4.83%																						
			A	va. plus Sta	ndard Dev [8]	8.42%																						
Notes:			•			0																						
[1] Source: Schedule 6																												
[2] Source: Schedule 6																												
[3] Equals [1] / [2]																												
[4] Equals [3] \times (1 + 0.50 \times [5])																												
[5] = 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1																												

[5] Source: Schedule 6
[6] Standard Deviation of Column [5]
[7] Mean of Column [5], minus [6]
[8] Mean of Column [5], plus [6] [9] If [5] > [8], then [8]; If [5] < [7], then [7], Else [5] [10] ROE that sets [2] equal to [29] using Excel's goal seek function [11] [2] x [4] [12] = (1 + [10]) ^ 1 [13] = [11] / [12] [14] = [11] * (1 + [5]) [15] = (1 + [10]) ^ 2 [13] = (1 + [13]) + 2 [16] = [14] / [15] [17] = [14] * (1 + [5]) $[18] = (1 + [10]) ^ 3$ [19] = [17] / [18] [20] = [47] * (4 + [5])[20] = [17] * (1 + [5]) [21] = (1 + [10]) ^ 4

[22] = [20] / [21]

[22] = [20] / [21] [23] = [20] * (1 + [5]) $[24] = (1 + [10]) ^ 5$ [25] = [23] / [24] [26] = [23] * (1 + [9]) [27] = [26] / ([10] - [9]) [28] = [27] / [24] [29] = [13] + [16] + [19] + [22] + [25] + [28] $[30] \text{ Excludes companies with ROEs less than the a 7.00% return, consistent with the Department position in Docket No. E-002/GR-15-826$

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

$K = Rf + \beta (Rm - Rf)$ K = Rf + 0.25 x (Rm - Rf) + 0.75 x β x (Rm - Rf)

		[1]	[2]	[3]	[4]	[5]	[6]
		Current 30-day					
		average of 30-year		Market	Market Risk		
		U.S. Treasury bond		Return	Premium		ECAPM
Company	Ticker	yield	Beta (β)	(Rm)	(Rm – Rf)	ROE (K)	ROE (K)
Alliant Energy Corporation	LNT	1.91%	0.85	14.56%	12.64%	12.66%	13.14%
Ameren Corporation	AEE	1.91%	0.80	14.56%	12.64%	12.03%	12.66%
American Electric Power Company, Inc.	AEP	1.91%	0.75	14.56%	12.64%	11.40%	12.19%
Avista Corporation	AVA	1.91%	0.95	14.56%	12.64%	13.93%	14.08%
CMS Energy Corporation	CMS	1.91%	0.80	14.56%	12.64%	12.03%	12.66%
Duke Energy Corporation	DUK	1.91%	0.90	14.56%	12.64%	13.29%	13.61%
Entergy Corporation	ETR	1.91%	0.95	14.56%	12.64%	13.93%	14.08%
Evergy, Inc.	EVRG	1.91%	0.95	14.56%	12.64%	13.93%	14.08%
IDACORP, Inc.	IDA	1.91%	0.85	14.56%	12.64%	12.66%	13.14%
MGE Energy, Inc.	MGEE	1.91%	0.75	14.56%	12.64%	11.40%	12.19%
NextEra Energy, Inc.	NEE	1.91%	0.95	14.56%	12.64%	13.93%	14.08%
NorthWestern Corporation	NWE	1.91%	0.95	14.56%	12.64%	13.93%	14.08%
Otter Tail Corporation	OTTR	1.91%	0.90	14.56%	12.64%	13.29%	13.61%
Pinnacle West Capital Corporation	PNW	1.91%	0.90	14.56%	12.64%	13.29%	13.61%
Portland General Electric Company	POR	1.91%	0.90	14.56%	12.64%	13.29%	13.61%
Southern Company	SO	1.91%	0.95	14.56%	12.64%	13.93%	14.08%
Xcel Energy Inc.	XEL	1.91%	0.80	14.56%	12.64%	12.03%	12.66%
Mean						13.00%	13.39%

Notes:

Notes: [1] Source: Bloomberg Professional, as of August 31, 2021 [2] Source: Value Line [3] Source: Schedule 11 [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

$K = Rf + \beta (Rm - Rf)$ K = Rf + 0.25 x (Rm - Rf) + 0.75 x β x (Rm - Rf)

		[1]	[2]	[3]	[4]	[5]	[6]
		Near-term projected					
		30-year U.S. Treasury		Market	Market Risk		
		bond yield		Return	Premium		ECAPM
Company	Ticker	(Q4 2021 - Q4 2022)	Beta (β)	(Rm)	(Rm – Rf)	ROE (K)	ROE (K)
Alliant Energy Corporation	LNT	2.42%	0.85	14.56%	12.14%	12.74%	13.19%
Ameren Corporation	AEE	2.42%	0.80	14.56%	12.14%	12.13%	12.74%
American Electric Power Company, Inc.	AEP	2.42%	0.75	14.56%	12.14%	11.52%	12.28%
Avista Corporation	AVA	2.42%	0.95	14.56%	12.14%	13.95%	14.10%
CMS Energy Corporation	CMS	2.42%	0.80	14.56%	12.14%	12.13%	12.74%
Duke Energy Corporation	DUK	2.42%	0.90	14.56%	12.14%	13.34%	13.65%
Entergy Corporation	ETR	2.42%	0.95	14.56%	12.14%	13.95%	14.10%
Evergy, Inc.	EVRG	2.42%	0.95	14.56%	12.14%	13.95%	14.10%
IDACORP, Inc.	IDA	2.42%	0.85	14.56%	12.14%	12.74%	13.19%
MGE Energy, Inc.	MGEE	2.42%	0.75	14.56%	12.14%	11.52%	12.28%
NextEra Energy, Inc.	NEE	2.42%	0.95	14.56%	12.14%	13.95%	14.10%
NorthWestern Corporation	NWE	2.42%	0.95	14.56%	12.14%	13.95%	14.10%
Otter Tail Corporation	OTTR	2.42%	0.90	14.56%	12.14%	13.34%	13.65%
Pinnacle West Capital Corporation	PNW	2.42%	0.90	14.56%	12.14%	13.34%	13.65%
Portland General Electric Company	POR	2.42%	0.90	14.56%	12.14%	13.34%	13.65%
Southern Company	SO	2.42%	0.95	14.56%	12.14%	13.95%	14.10%
Xcel Energy Inc.	XEL	2.42%	0.80	14.56%	12.14%	12.13%	12.74%
Mean						13.06%	13.43%

Notes:

Notes: [1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 9, September 1, 2021, at 2 [2] Source: Value Line [3] Source: Schedule 11 [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

$K = Rf + \beta (Rm - Rf)$ K = Rf + 0.25 x (Rm - Rf) + 0.75 x β x (Rm - Rf)

		[1]	[2]	[3]	[4]	[5]	[6]
		Projected 30-year					
		U.S. Treasury bond		Market	Market Risk		
		yield		Return	Premium		ECAPM
Company	Ticker	(2023 - 2027)	Beta (β)	(Rm)	(Rm – Rf)	ROE (K)	ROE (K)
Alliant Energy Corporation	LNT	3.50%	0.85	14.56%	11.06%	12.90%	13.31%
Ameren Corporation	AEE	3.50%	0.80	14.56%	11.06%	12.35%	12.90%
American Electric Power Company, Inc.	AEP	3.50%	0.75	14.56%	11.06%	11.79%	12.48%
Avista Corporation	AVA	3.50%	0.95	14.56%	11.06%	14.01%	14.14%
CMS Energy Corporation	CMS	3.50%	0.80	14.56%	11.06%	12.35%	12.90%
Duke Energy Corporation	DUK	3.50%	0.90	14.56%	11.06%	13.45%	13.73%
Entergy Corporation	ETR	3.50%	0.95	14.56%	11.06%	14.01%	14.14%
Evergy, Inc.	EVRG	3.50%	0.95	14.56%	11.06%	14.01%	14.14%
IDACORP, Inc.	IDA	3.50%	0.85	14.56%	11.06%	12.90%	13.31%
MGE Energy, Inc.	MGEE	3.50%	0.75	14.56%	11.06%	11.79%	12.48%
NextEra Energy, Inc.	NEE	3.50%	0.95	14.56%	11.06%	14.01%	14.14%
NorthWestern Corporation	NWE	3.50%	0.95	14.56%	11.06%	14.01%	14.14%
Otter Tail Corporation	OTTR	3.50%	0.90	14.56%	11.06%	13.45%	13.73%
Pinnacle West Capital Corporation	PNW	3.50%	0.90	14.56%	11.06%	13.45%	13.73%
Portland General Electric Company	POR	3.50%	0.90	14.56%	11.06%	13.45%	13.73%
Southern Company	SO	3.50%	0.95	14.56%	11.06%	14.01%	14.14%
Xcel Energy Inc.	XEL	3.50%	0.80	14.56%	11.06%	12.35%	12.90%
Mean						13.19%	13.53%

Notes:

 Notes:

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

 [2] Source: Value Line

 [3] Source: Schedule 11

 [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

$K = Rf + \beta (Rm - Rf)$ K = Rf + 0.25 x (Rm - Rf) + 0.75 x β x (Rm - Rf)

		[1]	[2]	[3]	[4]	[5]	[6]
		Current 30-day					
		average of 30-year		Market	Market Risk		
		U.S. Treasury bond		Return	Premium		ECAPM
Company	Ticker	yield	Beta (β)	(Rm)	(Rm – Rf)	ROE (K)	ROE (K)
Alliant Energy Corporation	LNT	1.91%	0.80	14.56%	12.64%	11.98%	12.63%
Ameren Corporation	AEE	1.91%	0.75	14.56%	12.64%	11.36%	12.16%
American Electric Power Company, Inc.	AEP	1.91%	0.77	14.56%	12.64%	11.68%	12.40%
Avista Corporation	AVA	1.91%	0.78	14.56%	12.64%	11.83%	12.51%
CMS Energy Corporation	CMS	1.91%	0.76	14.56%	12.64%	11.47%	12.25%
Duke Energy Corporation	DUK	1.91%	0.71	14.56%	12.64%	10.91%	11.83%
Entergy Corporation	ETR	1.91%	0.85	14.56%	12.64%	12.61%	13.10%
Evergy, Inc.	EVRG	1.91%	0.78	14.56%	12.64%	11.81%	12.50%
IDACORP, Inc.	IDA	1.91%	0.83	14.56%	12.64%	12.44%	12.97%
MGE Energy, Inc.	MGEE	1.91%	0.70	14.56%	12.64%	10.71%	11.67%
NextEra Energy, Inc.	NEE	1.91%	0.78	14.56%	12.64%	11.73%	12.44%
NorthWestern Corporation	NWE	1.91%	0.92	14.56%	12.64%	13.53%	13.79%
Otter Tail Corporation	OTTR	1.91%	0.89	14.56%	12.64%	13.13%	13.49%
Pinnacle West Capital Corporation	PNW	1.91%	0.84	14.56%	12.64%	12.55%	13.05%
Portland General Electric Company	POR	1.91%	0.81	14.56%	12.64%	12.15%	12.75%
Southern Company	SO	1.91%	0.77	14.56%	12.64%	11.63%	12.36%
Xcel Energy Inc.	XEL	1.91%	0.73	14.56%	12.64%	11.18%	12.02%
Mean						11.92%	12.58%

Notes:

[1] Source: Bloomberg Professional, as of August 31, 2021 [2] Source: Bloomberg Professional, based on 10-year weekly returns [3] Source: Schedule 11 [4] Equals [3] - [1] [5] Equals [1] + [2] x [4] [6] Equals [1] + $0.25 \times ([4]) + 0.75 \times ([2] \times [4])$

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

$K = Rf + \beta (Rm - Rf)$ K = Rf + 0.25 x (Rm - Rf) + 0.75 x β x (Rm - Rf)

		[1]	[2]	[3]	[4]	[5]	[6]
		Near-term projected					
		30-year U.S. Treasury		Market	Market Risk		
		bond yield		Return	Premium		ECAPM
Company	Ticker	(Q4 2021 - Q4 2022)	Beta (β)	(Rm)	(Rm – Rf)	ROE (K)	ROE (K)
Alliant Energy Corporation	LNT	2.42%	0.80	14.56%	12.14%	12.09%	12.70%
Ameren Corporation	AEE	2.42%	0.75	14.56%	12.14%	11.49%	12.26%
American Electric Power Company, Inc.	AEP	2.42%	0.77	14.56%	12.14%	11.80%	12.49%
Avista Corporation	AVA	2.42%	0.78	14.56%	12.14%	11.94%	12.59%
CMS Energy Corporation	CMS	2.42%	0.76	14.56%	12.14%	11.60%	12.34%
Duke Energy Corporation	DUK	2.42%	0.71	14.56%	12.14%	11.06%	11.93%
Entergy Corporation	ETR	2.42%	0.85	14.56%	12.14%	12.69%	13.16%
Evergy, Inc.	EVRG	2.42%	0.78	14.56%	12.14%	11.92%	12.58%
IDACORP, Inc.	IDA	2.42%	0.83	14.56%	12.14%	12.53%	13.03%
MGE Energy, Inc.	MGEE	2.42%	0.70	14.56%	12.14%	10.86%	11.78%
NextEra Energy, Inc.	NEE	2.42%	0.78	14.56%	12.14%	11.84%	12.52%
NorthWestern Corporation	NWE	2.42%	0.92	14.56%	12.14%	13.57%	13.82%
Otter Tail Corporation	OTTR	2.42%	0.89	14.56%	12.14%	13.19%	13.53%
Pinnacle West Capital Corporation	PNW	2.42%	0.84	14.56%	12.14%	12.63%	13.11%
Portland General Electric Company	POR	2.42%	0.81	14.56%	12.14%	12.25%	12.82%
Southern Company	SO	2.42%	0.77	14.56%	12.14%	11.75%	12.45%
Xcel Energy Inc.	XEL	2.42%	0.73	14.56 <u></u> %	12.14%	11.31%	<u>12.12%</u>
Mean						12.03%	12.66%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 9, September 1, 2021, at 2 [2] Source: Bloomberg Professional, based on 10-year weekly returns[3] Source: Schedule 11 [4] Equals [3] - [1] [5] Equals [1] + [2] x [4] [6] Equals [1] + $0.25 \times ([4]) + 0.75 \times ([2] \times [4])$

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

$K = Rf + \beta (Rm - Rf)$ K = Rf + 0.25 x (Rm - Rf) + 0.75 x β x (Rm - Rf)

		[1]	[2]	[3]	[4]	[5]	[6]
		Projected 30-year					
		U.S. Treasury bond		Market	Market Risk		
		yield		Return	Premium		ECAPM
Company	Ticker	(2023 - 2027)	Beta (β)	(Rm)	(Rm – Rf)	ROE (K)	ROE (K)
Alliant Energy Corporation	LNT	3.50%	0.80	14.56%	11.06%	12.31%	12.87%
Ameren Corporation	AEE	3.50%	0.75	14.56%	11.06%	11.76%	12.46%
American Electric Power Company, Inc.	AEP	3.50%	0.77	14.56%	11.06%	12.04%	12.67%
Avista Corporation	AVA	3.50%	0.78	14.56%	11.06%	12.17%	12.77%
CMS Energy Corporation	CMS	3.50%	0.76	14.56%	11.06%	11.86%	12.54%
Duke Energy Corporation	DUK	3.50%	0.71	14.56%	11.06%	11.37%	12.17%
Entergy Corporation	ETR	3.50%	0.85	14.56%	11.06%	12.85%	13.28%
Evergy, Inc.	EVRG	3.50%	0.78	14.56%	11.06%	12.16%	12.76%
IDACORP, Inc.	IDA	3.50%	0.83	14.56%	11.06%	12.71%	13.17%
MGE Energy, Inc.	MGEE	3.50%	0.70	14.56%	11.06%	11.19%	12.03%
NextEra Energy, Inc.	NEE	3.50%	0.78	14.56%	11.06%	12.08%	12.70%
NorthWestern Corporation	NWE	3.50%	0.92	14.56%	11.06%	13.66%	13.88%
Otter Tail Corporation	OTTR	3.50%	0.89	14.56%	11.06%	13.31%	13.62%
Pinnacle West Capital Corporation	PNW	3.50%	0.84	14.56%	11.06%	12.80%	13.24%
Portland General Electric Company	POR	3.50%	0.81	14.56%	11.06%	12.45%	12.98%
Southern Company	SO	3.50%	0.77	14.56%	11.06%	12.00%	12.64%
Xcel Energy Inc.	XEL	3.50%	0.73	14.56%	11.06%	11.60%	12.34%
Mean						12.25%	12.83%

Notes:

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: Schedule 11 [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 AVERAGE BETA

CAPM: $K = R_f + \beta (R_m - R_f) / ECAPM$: $K = Rf + 0.25(Rm - Rf) + 0.75\beta (Rm - Rf)$

	[4]	[5]	[6]	[7]	[8]	[9]
				Market		
	Risk-Free		Market	Risk		
	Rate	Beta	Return	Premium	CAPM	ECAPM
	(R _f)	(β)	(R_m)	$(R_m - R_f)$	(K)	(K)
Current 30-day average of 30-year U.S. Treasury bond yield [1]	1.91%	0.711	14.56%	12.64%	10.90%	11.82%
Near-term projected 30-year U.S. Treasury bond yield (Q4 2021 - Q4 2022) [2]	2.42%	0.711	14.56%	12.14%	11.05%	11.93%
Projected 30-year U.S. Treasury bond yield (2023 - 2027) [3]	3.50%	0.711	14.56%	11.06%	11.36%	12.16%
				Average:	11.10%	11.97%

Notes:

[1] Source: Bloomberg Professional, as of August 31, 2021

[2] Source: Blue Chip Financial Forecasts, Vol. 40, No. 9, September 1, 2021, at 2
[3] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14

[4] See Notes [1], [2], and [3] [5] Source: Schedule 10

[6] Source: Schedule 11

[7] Equals [6] - [4]

[8] Equals [4] + [5] x [7] [9] Equals [4] + 0.25 x ([7]) + 0.75 x ([5] x [7])

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	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
		0.75	0.70	0.75	0.00	0.00	0.70	0.70	0.00	0.00	0.05	0.70
Alliant Energy Corporation	LNI	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
CMS Energy Corporation	CMS	0.75	0.75	0.70	0.70	0.75	0.65	0.65	0.55	0.50	0.80	0.68
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
Pinnacle West Capital Corporation	PNW	0.70	0.70	0.70	0.70	0.75	0.70	0.70	0.60	0.55	0.85	0.70
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	0.70	0.71	0.73	0.74	0.68	0.68	0.58	0.56	0.85	0.71

HISTORICAL BETA - 2011 - 2020

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 Decenber 14, 2018.

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

 $\left[10\right]$ 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	1.34%
[2] Estimated Weighted Average Long-Term Growth Rate	13.13%
[3] S&P 500 Estimated Required Market Return	14.56%

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]
Name	Ticker	Weight in Index	Estimated Dividend Yield	Cap-Weighted d Dividend Yield	Long-Term Growth Est.	Long-Terr Growth Es
		0.000/	4 500/	0.000/	0.00%	0.04%
LyondeliBaseli Industries NV		0.09%	4.50%	0.00%	8.00%	0.01%
American Express Co		0.30%	1.04%	0.00%	8.50%	0.03%
Presdeem Inc	VZ	0.62%	4.50%	0.03%	3.50%	0.02%
Broadcom Inc	AVGO	0.55%	2.90%	0.02%	27.00%	0.15%
Boeing Co/The	BA	0.00%	n/a	n/a	n/a	n/a
Jaterpillar Inc		0.31%	2.11%	0.01%	9.00%	0.03%
IPMorgan Chase & Co	JPM	1.29%	2.25%	0.03%	6.50%	0.08%
Chevron Corp	CVX	0.51%	5.54%	0.03%	23.50%	0.12%
Coca-Cola Co/The	KO	0.66%	2.98%	0.02%	7.00%	0.05%
AbbVie Inc	ABBV	0.58%	4.31%	0.02%	6.50%	0.04%
Walt Disney Co/The	DIS	0.89%	n/a	n/a	14.00%	0.12%
FleetCor Technologies Inc	FLT	0.06%	n/a	n/a	11.00%	0.01%
Extra Space Storage Inc	EXR	0.07%	2.68%	0.00%	5.00%	0.00%
Exxon Mobil Corp	XOM	0.00%	6.38%	0.00%	n/a	n/a
Phillips 66	PSX	0.08%	5.06%	0.00%	20.00%	0.02%
General Electric Co	GE	0.31%	0.30%	0.00%	15.00%	0.05%
HP Inc	HPQ	0.10%	2.61%	0.00%	14.00%	0.01%
Home Depot Inc/The	HD	0.93%	2.02%	0.02%	8.00%	0.07%
Monolithic Power Systems Inc	MPWR	0.06%	0.48%	0.00%	17.50%	0.01%
International Business Machines Corp	IBM	0.34%	4 67%	0.02%	1.50%	0.01%
Johnson & Johnson	.IN.I	1 23%	2 45%	0.02%	10.00%	0.01%
McDonald's Corn		0.48%	2.40%	0.00%	10.00%	0.12%
Morok & Colleg		0.40%	2.17 /0	0.01%	7 50%	0.03%
		0.52%	J.41%	0.02%	1.30%	0.04%
	IVIIVIIVI	0.30%	3.04%	0.01%	4.50%	0.01%
American water Works Co Inc	AWK	0.09%	1.32%	0.00%	8.50%	0.01%
Bank of America Corp	BAC	0.95%	2.01%	0.02%	6.00%	0.06%
Baker Hughes Co	BKR	0.00%	3.16%	0.00%	n/a	n/a
Pfizer Inc	PFE	0.70%	3.39%	0.02%	8.00%	0.06%
Procter & Gamble Co/The	PG	0.94%	2.44%	0.02%	7.00%	0.07%
AT&T Inc	Т	0.53%	7.59%	0.04%	2.50%	0.01%
Travelers Cos Inc/The	TRV	0.11%	2.20%	0.00%	8.00%	0.01%
Raytheon Technologies Corp	RTX	0.35%	2 41%	0.01%	1 00%	0.00%
Analog Devices Inc		0.24%	1 60%	0.00%	8 50%	0.00%
Malmart Inc		1 1 2 9%	1.09%	0.00%	7 50%	0.02 /0
Ciaco Systema Ing/Deleware		1.12/0	1.4970	0.02 /0	7.30%	0.00%
		0.07 %	2.31%	0.02%	0.00%	0.04%
	INTC	0.59%	2.57%	0.02%	7.00%	0.04%
General Motors Co	GM	0.19%	n/a	n/a	11.00%	0.02%
Microsoft Corp	MSEI	6.14%	0.74%	0.05%	17.00%	1.04%
Dollar General Corp	DG	0.14%	0.75%	0.00%	10.50%	0.01%
Cigna Corp	CI	0.19%	1.89%	0.00%	10.00%	0.02%
Kinder Morgan Inc	KMI	0.10%	6.64%	0.01%	19.00%	0.02%
Citigroup Inc	С	0.39%	2.84%	0.01%	5.00%	0.02%
American International Group Inc	AIG	0.13%	2.35%	0.00%	28.50%	0.04%
Altria Group Inc	МО	0.25%	7.17%	0.02%	6.00%	0.02%
HCA Healthcare Inc	HCA	0.22%	0.76%	0.00%	12.00%	0.03%
Under Armour Inc	UAA	0.01%	n/a	n/a	11.00%	0.00%
International Paper Co	IP	0.06%	3 41%	0.00%	11 00%	0.01%
Hewlett Packard Enterprise Co	HPE	0.05%	3 10%	0.00%	6 50%	0.00%
Abbott Laboratories		0.60%	1 / 2%	0.00%	11 50%	0.00%
Albeit Eaberatories		0.01%	2 2 2 2 0	0.01%	9 50%	0.01%
Allac IIIC Air Braduata and Chamicala Inc		0.10%	2.33%	0.00%	0.00%	0.01%
All Products and Chemicals Inc	APD	0.10%	2.23%	0.00%	12.00%	0.02%
Royal Caribbean Cruises Ltd	RCL	0.00%	n/a	n/a	n/a	n/a
Hess Corp	HES	0.00%	1.45%	0.00%	n/a	n/a
Archer-Daniels-Midland Co	ADM	0.09%	2.47%	0.00%	8.50%	0.01%
Automatic Data Processing Inc	ADP	0.24%	1.78%	0.00%	9.00%	0.02%
Verisk Analytics Inc	VRSK	0.09%	0.57%	0.00%	8.00%	0.01%
AutoZone Inc	AZO	0.09%	n/a	n/a	14.50%	0.01%
Avery Dennison Corp	AVY	0.05%	1.21%	0.00%	9.00%	0.00%
Enphase Energy Inc	ENPH	0.06%	n/a	n/a	40.00%	0.03%
MSCI Inc	MSCI	0.14%	0.66%	0.00%	16.00%	0.02%
Ball Corp	BLL	0.08%	0.83%	0.00%	22.00%	0.02%
Carrier Global Corp	CARR	0.00%	0.83%	0.00%	n/a	n/a
Bank of New York Mellon Corp/The	BK	0.00%	2.46%	0.00%	5 00%	0.01%
Otis Worldwide Corp		0.10%	2.40%	0.00%	0.0070 n/o	0.0170
Olis Woldwide Colp		0.00%	1.04 /0	0.00%	11/a	11/a
	BAX	0.10%	1.47%	0.00%	8.50%	0.01%
Becton Dickinson and Co	BDX	0.20%	1.32%	0.00%	7.50%	0.01%
Berkshire Hathaway Inc	BRK/B	1.03%	n/a	n/a	6.00%	0.06%
Best Buy Co Inc	BBY	0.08%	2.40%	0.00%	8.50%	0.01%
Boston Scientific Corp	BSX	0.17%	n/a	n/a	17.50%	0.03%
Bristol-Myers Squibb Co	BMY	0.40%	2.93%	0.01%	12.50%	0.05%
Fortune Brands Home & Security Inc	FBHS	0.04%	1.07%	0.00%	10.00%	0.00%
Brown-Forman Corp	RF/R	0.06%	1.02%	0.00%	11.00%	0.01%
Cabot Oil & Gas Corp	000	0.02%	2 77%	0.00%	14 50%	0.00%
Campbell Soun Co		0.02 /0	2.11/0	0.0070	5 00%	0.0070 0.000/
Campbell Coup CO Kansas City Southarn		0.0370	0.0070	0.0070	10 E00/	0.00%
	KSU	0.07%	U.11%	0.00%	10.50%	0.01%
Hilton Worldwide Holdings Inc	HLT	0.00%	n/a	n/a	n/a	n/a
Carnival Corp	CCL	0.00%	n/a	n/a	n/a	n/a
Qorvo Inc	QRVO	0.06%	n/a	n/a	19.50%	0.01%
Lumen Technologies Inc	LUMN	0.04%	8.13%	0.00%	2.50%	0.00%
	UDR	0.04%	2.68%	0.00%	6.00%	0.00%
	CLX	0.04%	2 76%	0.00%	6.00%	0.00%
		0.0070	2.10/0	0.0070		0.00%
Paycom Software Inc	DAVO	U U00/	n/o	n/o		1111.000
Paycom Software Inc	PAYC	0.08%	n/a	n/a	19.50%	0.02%
Paycom Software Inc CMS Energy Corp	PAYC CMS	0.08% 0.05%	n/a 2.71%	n/a 0.00%	7.50%	0.02% 0.00%
Paycom Software Inc CMS Energy Corp Newell Brands Inc	PAYC CMS NWL	0.08% 0.05% 0.00%	n/a 2.71% 3.62%	n/a 0.00% 0.00%	7.50% n/a	0.02% 0.00% n/a

[6] [4] [5] [7] [8] Cap-Weighted Weight in Estimated Cap-Weighted Long-Term Long-Term Name Ticker Index Dividend Yield Dividend Yield Growth Est. Growth Est. 3.68% CMA 0.03% 0.00% 2.50% 0.00% Comerica Inc **IPG Photonics Corp** IPGP 0.02% 17.00% 0.00% n/a n/a CAG Conagra Brands Inc 0.04% 3.77% 0.00% 5.00% 0.00% ED Consolidated Edison Inc 0.07% 4.11% 0.00% 4.00% 0.00% Corning Inc GLW 0.09% 2.40% 0.00% 20.00% 0.02% Cummins Inc CMI 0.09% 2.46% 0.00% 7.00% 0.01% Caesars Entertainment Inc CZR 0.00% n/a n/a n/a n/a DHR 0.11% 0.63% 0.26% 0.00% 18.00% Danaher Corp TGT Target Corp 0.33% 1.46% 0.00% 13.00% 0.04% DE 0.32% 17.00% 0.05% Deere & Co 1.11% 0.00% Dominion Energy Inc D 0.17% 3.24% 0.01% 12.00% 0.02% DOV 0.07% 1.15% 0.00% 7.00% 0.00% Dover Corp 0.04% Alliant Energy Corp LNT 2.65% 0.00% 5.50% 0.00% DUK 0.22% 3.76% 0.01% 7.00% 0.02% Duke Energy Corp Regency Centers Corp REG 0.03% 3.47% 0.00% 10.00% 0.00% ETN 0.18% 5.50% 0.01% Eaton Corp PLC 1.81% 0.00% ECL Ecolab Inc 0.17% 0.85% 0.00% 6.00% 0.01% PerkinElmer Inc PKI 0.06% 0.15% 0.00% 11.00% 0.01% **Emerson Electric Co** EMR 0.17% 1.91% 0.00% 10.50% 0.02% EOG 0.11% 2.44% 0.00% 12.50% 0.01% EOG Resources Inc AON 0.18% 0.71% 0.00% 7.00% 0.01% Aon PLC ETR 0.06% 0.00% 0.00% Entergy Corp 3.44% 3.00% Equifax Inc EFX 0.09% 0.57% 0.00% 10.50% 0.01% IQVIA Holdings Inc IQV 0.13% n/a 14.00% 0.02% n/a Gartner Inc IT 0.07% n/a n/a 18.50% 0.01% FDX 0.19% 1.13% 0.00% 12.00% 0.02% FedEx Corp FMC 0.03% 2.05% 0.00% 9.50% 0.00% FMC Corp Ford Motor Co F 0.14% 47.50% 0.07% n/a n/a NextEra Energy Inc NEE 0.45% 1.83% 0.01% 10.50% 0.05% Franklin Resources Inc BEN 0.04% 3.45% 0.00% 11.50% 0.01% Freeport-McMoRan Inc FCX 0.14% 0.82% 0.00% 36.50% 0.05% GPS 0.00% Gap Inc/The 0.03% 1.80% 25.00% 0.01% DXCM 0.14% 34.00% 0.05% Dexcom Inc n/a n/a General Dynamics Corp GD 0.15% 2.38% 0.00% 5.00% 0.01% General Mills Inc GIS 0.09% 0.00% 3.53% 0.00% 3.00% Genuine Parts Co GPC 0.05% 2.67% 0.00% 7.00% 0.00% Atmos Energy Corp ATO 0.03% 2.56% 0.00% 7.00% 0.00% GWW WW Grainger Inc 0.06% 1.49% 0.00% 5.50% 0.00% HAL 0.05% 0.90% 0.00% 9.00% 0.00% Halliburton Co L3Harris Technologies Inc LHX 0.00% 1.75% 0.00% n/a n/a Healthpeak Properties Inc PEAK 0.05% 3.33% 0.00% -0.01% -12.00% Catalent Inc CTLT 0.06% n/a n/a 21.00% 0.01% Fortive Corp FTV 0.07% 0.38% 0.00% 6.00% 0.00% HSY 0.00% Hershey Co/The 0.07% 2.03% 5.50% 0.00% SYF 0.08% 1.77% 0.00% 4.50% 0.00% Synchrony Financial HRL Hormel Foods Corp 0.07% 2.15% 0.00% 9.00% 0.01% AJG 0.08% Arthur J Gallagher & Co 1.34% 0.00% 12.50% 0.01% Mondelez International Inc MDLZ 0.23% 2.26% 0.01% 8.00% 0.02% CenterPoint Energy Inc CNP 0.04% 2.55% 0.00% 8.00% 0.00% Humana Inc HUM 0.14% 0.69% 0.00% 12.00% 0.02%

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Willis Towers Watson PLC	WLTW	0.08%	1.45%	0.00%	8.00%	0.01%
Illinois Tool Works Inc	ITW	0.20%	2.10%	0.00%	11.00%	0.02%
CDW Corp/DE	CDW	0.07%	0.80%	0.00%	10.00%	0.01%
Trane Technologies PLC	TT	0.00%	1.19%	0.00%	n/a	n/a
Interpublic Group of Cos Inc/The	IPG	0.04%	2.90%	0.00%	12.00%	0.00%
International Flavors & Fragrances Inc	IFF	0.10%	2.09%	0.00%	7.50%	0.01%
Jacobs Engineering Group Inc	J	0.05%	0.62%	0.00%	15.00%	0.01%
Generac Holdings Inc	GNRC	0.07%	n/a	n/a	23.50%	0.02%
NXP Semiconductors NV	NXPI	0.15%	1.05%	0.00%	11.00%	0.02%
Hanesbrands Inc	HBI	0.02%	3.21%	0.00%	6.50%	0.00%
Kellogg Co	К	0.06%	3.67%	0.00%	3.50%	0.00%
Broadridge Financial Solutions Inc	BR	0.05%	1.49%	0.00%	8.50%	0.00%
Perrigo Co PLC	PRGO	0.01%	2.34%	0.00%	-2.00%	0.00%
Kimberly-Clark Corp	KMB	0.13%	3.31%	0.00%	5.50%	0.01%
Kimco Realty Corp	KIM	0.04%	3.12%	0.00%	-2.00%	0.00%
Oracle Corp	ORCL	0.67%	1.44%	0.01%	10.00%	0.07%
Kroger Co/The	KR	0.09%	1.82%	0.00%	5.00%	0.00%
Leggett & Platt Inc	LEG	0.02%	3.47%	0.00%	10.00%	0.00%
Lennar Corp	LEN	0.08%	0.93%	0.00%	9.00%	0.01%
Eli Lilly & Co	LLY	0.67%	1.32%	0.01%	11.00%	0.07%
Bath & Body Works Inc	BBWI	0.05%	0.89%	0.00%	23.50%	0.01%
Charter Communications Inc	CHTR	0.41%	n/a	n/a	26.50%	0.11%
Lincoln National Corp	LNC	0.03%	2.45%	0.00%	9.00%	0.00%
Loews Corp	L	0.04%	0.45%	0.00%	12.50%	0.00%
Lowe's Cos Inc	LOW	0.38%	1.57%	0.01%	14.00%	0.05%
IDEX Corp	IEX	0.05%	0.96%	0.00%	8.00%	0.00%
Marsh & McLennan Cos Inc	MMC	0.22%	1.36%	0.00%	11.00%	0.02%
Masco Corp	MAS	0.04%	1.55%	0.00%	9.00%	0.00%
S&P Global Inc	SPGI	0.29%	0.69%	0.00%	10.50%	0.03%
Medtronic PLC	MDT	0.49%	1.89%	0.01%	9.00%	0.04%
Viatris Inc	VTRS	0.00%	3.01%	0.00%	n/a	n/a
CVS Health Corp	CVS	0.31%	2.32%	0.01%	6.00%	0.02%
DuPont de Nemours Inc	DD	0.00%	1.62%	0.00%	n/a	n/a
Micron Technology Inc	MU	0.22%	0.54%	0.00%	11.50%	0.03%
Motorola Solutions Inc	MSI	0.11%	1.16%	0.00%	7.00%	0.01%
Cboe Global Markets Inc	CBOE	0.04%	1.52%	0.00%	12.00%	0.00%
Laboratory Corp of America Holdings	LH	0.08%	n/a	n/a	5.50%	0.00%
Newmont Corp	NEM	0.13%	3.79%	0.00%	14.50%	0.02%
NIKE Inc	NKE	0.57%	0.67%	0.00%	24.00%	0.14%
NiSource Inc	NI	0.03%	3.57%	0.00%	9.50%	0.00%
Norfolk Southern Corp	NSC	0.17%	1.72%	0.00%	10.00%	0.02%
Principal Financial Group Inc	PFG	0.05%	3.77%	0.00%	5.50%	0.00%
Eversource Energy	ES	0.08%	2.66%	0.00%	6.50%	0.01%
Northrop Grumman Corp	NOC	0.16%	1.71%	0.00%	7.00%	0.01%
Wells Fargo & Co	WFC	0.51%	1.75%	0.01%	-0.50%	0.00%
Nucor Corp	NUE	0.09%	1.38%	0.00%	8.00%	0.01%

[4] [5] [6] [7] [8] Cap-Weighted Weight in Estimated Cap-Weighted Long-Term Long-Term Name Ticker Index Dividend Yield Dividend Yield Growth Est. Growth Est. PVH Corp PVH 0.02% 12.50% 0.00% n/a n/a Occidental Petroleum Corp OXY 0.06% 0.16% 0.00% 36.50% 0.02% OMC 0.04% 3.82% Omnicom Group Inc 0.00% 6.00% 0.00% OKE ONEOK Inc 0.06% 7.12% 0.00% 9.50% 0.01% Raymond James Financial Inc RJF 0.05% 0.74% 0.00% 6.50% 0.00% Parker-Hannifin Corp PH 0.10% 1.39% 0.00% 13.00% 0.01% Rollins Inc ROL 0.05% 0.82% 0.00% 11.50% 0.01% PPL PPL Corp 0.06% 5.66% 0.00% -7.00% 0.00% COP ConocoPhillips 0.20% 3.10% 0.01% 13.50% 0.03% PHM 0.04% 11.00% 0.00% PulteGroup Inc 1.04% 0.00% Pinnacle West Capital Corp PNW 0.02% 4.32% 0.00% 5.00% 0.00% PNC Financial Services Group Inc/The PNC 0.22% 2.62% 0.01% 10.00% 0.02% PPG Industries Inc PPG 0.10% 1.48% 0.00% 3.00% 0.00% Progressive Corp/The PGR 0.15% 0.42% 0.00% 5.00% 0.01% PEG Public Service Enterprise Group Inc 0.09% 3.19% 0.00% 3.50% 0.00% Robert Half International Inc RHI 0.03% 1.47% 0.00% 7.50% 0.00% **Edison International** EIX 0.00% 4.58% 0.00% n/a n/a Schlumberger NV SLB 0.11% 1.78% 0.00% 8.50% 0.01% Charles Schwab Corp/The SCHW 0.36% 0.99% 0.00% 7.00% 0.02% Sherwin-Williams Co/The SHW 0.22% 0.72% 0.00% 10.50% 0.02% WST 0.09% 0.00% 17.00% 0.02% West Pharmaceutical Services Inc 0.15% J M Smucker Co/The 0.04% 0.00% 0.00% SJM 3.20% 4.00% Snap-on Inc SNA 0.03% 2.19% 0.00% 4.50% 0.00% AMETEK Inc AME 0.09% 0.59% 0.00% 10.00% 0.01% Southern Co/The SO 0.19% 4.02% 0.01% 6.00% 0.01% TFC 0.21% 3.36% 0.01% 7.00% 0.01% Truist Financial Corp LUV 0.08% 34.50% 0.03% Southwest Airlines Co n/a n/a W R Berkley Corp WRB 0.04% 0.69% 0.00% 14.50% 0.01% Stanley Black & Decker Inc SWK 0.09% 1.64% 0.00% 6.00% 0.01% Public Storage PSA 0.15% 2.47% 0.00% 2.50% 0.00% Arista Networks Inc ANET 0.08% n/a 4.50% 0.00% n/a 10.00% Sysco Corp SYY 0.11% 2.36% 0.00% 0.01% CTVA 0.00% 0.00% Corteva Inc 1.27% n/a n/a Texas Instruments Inc TXN 0.48% 2.14% 0.01% 8.50% 0.04% 0.04% 0.00% Textron Inc TXT 0.11% 0.00% 8.00% Thermo Fisher Scientific Inc тмо 0.59% 0.19% 0.00% 14.50% 0.09% TJX Cos Inc/The TJX 0.24% 1.43% 0.00% 12.00% 0.03% Globe Life Inc GL 0.03% 0.82% 0.00% 8.00% 0.00% JCI 0.14% 1.44% 0.00% 8.50% 0.01% Johnson Controls International plc Ulta Beauty Inc ULTA 0.06% 12.50% 0.01% n/a n/a Union Pacific Corp 0.38% 0.04% UNP 1.97% 0.01% 10.00% Keysight Technologies Inc KEYS 0.09% n/a n/a 17.00% 0.02% UnitedHealth Group Inc UNH 1.06% 1.39% 0.01% 12.00% 0.13% UNM 0.00% Unum Group 0.01% 4.51% 3.50% 0.00% MRO 0.03% 1.70% 0.00% 69.00% 0.02% Marathon Oil Corp **Bio-Rad Laboratories Inc** BIO 0.05% 11.50% 0.01% n/a n/a VTR 0.00% Ventas Inc 0.06% 3.22% 0.00% 4.50% VF Corp VFC 0.08% 2.56% 0.00% 5.50% 0.00% Vornado Realty Trust VNO 0.02% 5.06% 0.00% -19.00% 0.00%

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Weyerhaeuser Co	WY	0.07%	1.89%	0.00%	21.00%	0.02%
Whirlpool Corp	WHR	0.04%	2.53%	0.00%	5.50%	0.00%
Williams Cos Inc/The	WMB	0.08%	6.64%	0.01%	10.50%	0.01%
WEC Energy Group Inc	WEC	0.08%	2.87%	0.00%	6.50%	0.01%
Adobe Inc	ADBE	0.86%	n/a	n/a	15.50%	0.13%
AES Corp/The	AES	0.04%	2.52%	0.00%	24.00%	0.01%
Amgen Inc	AMGN	0.35%	3.12%	0.01%	5.50%	0.02%
Apple Inc	AAPL	6.79%	0.58%	0.04%	14.50%	0.98%
Autodesk Inc	ADSK	0.18%	n/a	n/a	18.00%	0.03%
Cintas Corp	CTAS	0.11%	0.96%	0.00%	12.50%	0.01%
Comcast Corp	CMCSA	0.75%	1.65%	0.01%	11.00%	0.08%
Molson Coors Beverage Co	TAP	0.03%	2.86%	0.00%	41.00%	0.01%
KLA Corp	KLAC	0.14%	1.24%	0.00%	18.00%	0.03%
Marriott International Inc/MD	MAR	0.12%	n/a	n/a	17.50%	0.02%
McCormick & Co Inc/MD	MKC	0.06%	1.58%	0.00%	6.00%	0.00%
PACCAR Inc	PCAR	0.08%	1.66%	0.00%	5.50%	0.00%
Costco Wholesale Corp	COST	0.54%	0.69%	0.00%	10.50%	0.06%
First Republic Bank/CA	FRC	0.10%	0.44%	0.00%	13.50%	0.01%
Stryker Corp	SYK	0.28%	0.91%	0.00%	11.00%	0.03%
Tyson Foods Inc	TSN	0.06%	2.27%	0.00%	6.00%	0.00%
Lamb Weston Holdings Inc	LW	0.03%	1.44%	0.00%	2.50%	0.00%
Applied Materials Inc	AMAT	0.33%	0.71%	0.00%	16.00%	0.05%
American Airlines Group Inc	AAL	0.00%	n/a	n/a	n/a	n/a
Cardinal Health Inc	CAH	0.04%	3.74%	0.00%	12.00%	0.00%
Cerner Corp	CERN	0.06%	1.15%	0.00%	11.00%	0.01%
Cincinnati Financial Corp	CINF	0.05%	2.04%	0.00%	13.50%	0.01%
ViacomCBS Inc	VIAC	0.07%	2.32%	0.00%	7.00%	0.00%
DR Horton Inc	DHI	0.09%	0.84%	0.00%	14.50%	0.01%
Electronic Arts Inc	EA	0.11%	0.47%	0.00%	12.50%	0.01%
Expeditors International of Washington Inc	EXPD	0.06%	0.93%	0.00%	10.00%	0.01%
Fastenal Co	FAST	0.09%	2.01%	0.00%	9.00%	0.01%
M&T Bank Corp	MTB	0.05%	3.14%	0.00%	8.00%	0.00%
Xcel Energy Inc	XEL	0.10%	2.66%	0.00%	6.00%	0.01%
Fiserv Inc	FISV	0.21%	n/a	n/a	13.00%	0.03%
Fifth Third Bancorp	FITB	0.07%	2.78%	0.00%	8.00%	0.01%
Gilead Sciences Inc	GILD	0.25%	3.90%	0.01%	3.50%	0.01%
Hasbro Inc	HAS	0.04%	2.77%	0.00%	12.50%	0.00%
Huntington Bancshares Inc/OH	HBAN	0.06%	3.86%	0.00%	8.50%	0.01%
Welltower Inc	WELL	0.10%	2.79%	0.00%	-1.50%	0.00%
Biogen Inc	BIIB	0.14%	n/a	n/a	7.00%	0.01%
Northern Trust Corp	NTRS	0.07%	2.36%	0.00%	7.00%	0.00%
Packaging Corp of America	PKG	0.04%	2.64%	0.00%	5.00%	0.00%
Pavchex Inc	PAYX	0.11%	2.31%	0.00%	7.00%	0.01%
People's United Financial Inc	PBCT	0.02%	4.44%	0.00%	4.00%	0.00%
QUALCOMM Inc	MOJO	0.45%	1.85%	0.01%	14.00%	0.06%
Roper Technologies Inc	ROP	0.14%	0.47%	0.00%	8.00%	0.01%

VMC

0.07%

0.80%

0.00%

10.00%

0.01%

Vulcan Materials Co

[4] [5] [6] [7] [8] Cap-Weighted Weight in Estimated Cap-Weighted Long-Term Long-Term Name Ticker Index Dividend Yield Dividend Yield Growth Est. Growth Est. ROST 0.11% 0.96% 0.00% 7.50% 0.01% Ross Stores Inc 0.02% **IDEXX** Laboratories Inc IDXX 0.16% 14.50% n/a n/a SBUX Starbucks Corp 0.37% 1.53% 0.01% 16.00% 0.06% 0.05% KeyCorp KEY 3.64% 0.00% 9.50% 0.00% Fox Corp FOXA 0.00% 1.28% 0.00% n/a n/a FOX 0.00% 1.39% 0.00% Fox Corp n/a n/a State Street Corp STT 0.09% 2.45% 0.00% 7.00% 0.01% NCLH Norwegian Cruise Line Holdings Ltd 0.00% n/a n/a n/a n/a USB 0.01% US Bancorp 0.23% 2.93% 0.01% 6.50% AOS 0.03% A O Smith Corp 1.43% 0.00% 9.50% 0.00% NortonLifeLock Inc NLOK 0.04% 1.88% 0.00% 7.00% 0.00% T Rowe Price Group Inc TROW 0.14% 1.93% 0.00% 8.00% 0.01% Waste Management Inc WΜ 0.18% 1.48% 0.00% 7.50% 0.01% **Constellation Brands Inc** STZ 0.10% 1.44% 0.00% 7.00% 0.01% Xilinx Inc XLNX 0.10% n/a n/a 7.50% 0.01% DENTSPLY SIRONA Inc XRAY 0.04% 5.50% 0.00% 0.71% 0.00% Zions Bancorp NA ZION 0.03% 2.63% 0.00% 8.50% 0.00% Alaska Air Group Inc ALK 0.02% n/a 80.00% 0.02% n/a Invesco Ltd IVZ 0.03% 2.69% 0.00% 15.00% 0.00% Linde PLC LIN 0.00% 1.35% 0.00% n/a n/a INTU 0.42% 0.48% 0.00% 0.07% Intuit Inc 16.00% 0.52% 8.50% 0.04% Morgan Stanley MS 2.68% 0.01% Microchip Technology Inc MCHP 0.12% 1.11% 0.00% 9.00% 0.01% Chubb Ltd CB 0.22% 1.74% 0.00% 12.50% 0.03% Hologic Inc HOLX 0.05% n/a n/a 25.00% 0.01% CFG 0.05% 3.56% 0.00% 8.50% 0.00% Citizens Financial Group Inc ORLY 0.11% 11.00% 0.01% O'Reilly Automotive Inc n/a n/a Allstate Corp/The ALL 0.11% 2.40% 0.00% 5.00% 0.01% Equity Residential EQR 0.09% 2.87% 0.00% 2.00% 0.00% BorgWarner Inc BWA 0.03% 1.59% 0.00% 5.50% 0.00% Organon & Co OGN 0.00% 3.30% 0.00% n/a n/a 0.00% Host Hotels & Resorts Inc HST 0.03% 10.00% n/a n/a INCY 0.05% 58.50% 0.03% Incyte Corp n/a n/a Simon Property Group Inc SPG 0.12% 4.46% 0.01% 1.50% 0.00% EMN 0.04% 0.00% 10.50% 0.00% Eastman Chemical Co 2.44% Twitter Inc TWTR 0.14% n/a 35.00% 0.05% n/a AvalonBay Communities Inc AVB 0.09% 2.77% 0.00% 1.00% 0.00% PRU Prudential Financial Inc 0.11% 4.34% 0.00% 4.50% 0.00% United Parcel Service Inc UPS 0.39% 2.09% 0.01% 10.50% 0.04% Walgreens Boots Alliance Inc WBA 0.12% 3.76% 0.00% 6.00% 0.01% STERIS PLC STE 0.06% 0.00% 0.01% 0.80% 10.00% McKesson Corp MCK 0.09% 0.92% 0.00% 9.00% 0.01% Lockheed Martin Corp LMT 0.27% 2.89% 0.01% 7.50% 0.02% ABC 0.00% AmerisourceBergen Corp 0.07% 1.44% 6.50% 0.00% COF 0.20% 1.45% 0.00% 5.50% 0.01% Capital One Financial Corp Waters Corp WAT 0.07% 6.00% 0.00% n/a n/a Dollar Tree Inc DLTR 0.06% n/a n/a 9.50% 0.01% Darden Restaurants Inc DRI 0.05% 2.92% 0.00% 19.00% 0.01% Domino's Pizza Inc DPZ 0.05% 0.73% 0.00% 15.00% 0.01%

STANDARD AND POOR'S 500 INDEX

NetApp Inc	NTAP	0.05%	2.25%	0.00%	6.50%	0.00%
Citrix Systems Inc	CTXS	0.03%	1.44%	0.00%	8.50%	0.00%
DXC Technology Co	DXC	0.03%	n/a	n/a	6.50%	0.00%
Old Dominion Freight Line Inc	ODFL	0.09%	0.28%	0.00%	9.50%	0.01%
DaVita Inc	DVA	0.04%	n/a	n/a	16.00%	0.01%
Hartford Financial Services Group Inc/The	HIG	0.06%	2.08%	0.00%	8.50%	0.01%
Iron Mountain Inc	IRM	0.04%	5.18%	0.00%	8.00%	0.00%
Estee Lauder Cos Inc/The	EL	0.21%	0.62%	0.00%	11.00%	0.02%
Cadence Design Systems Inc	CDNS	0.12%	n/a	n/a	9.50%	0.01%
Tyler Technologies Inc	TYL	0.05%	n/a	n/a	12.50%	0.01%
Universal Health Services Inc	UHS	0.03%	0.51%	0.00%	11.00%	0.00%
Skyworks Solutions Inc	SWKS	0.08%	1.22%	0.00%	13.50%	0.01%
NOV Inc	NOV	0.00%	n/a	n/a	n/a	n/a
Quest Diagnostics Inc	DGX	0.05%	1.62%	0.00%	7.50%	0.00%
Activision Blizzard Inc	ATVI	0.17%	0.57%	0.00%	13.00%	0.02%
Rockwell Automation Inc	ROK	0.10%	1.32%	0.00%	6.50%	0.01%
Kraft Heinz Co/The	KHC	0.12%	4.45%	0.01%	1.50%	0.00%
American Tower Corp	AMT	0.36%	1.74%	0.01%	9.50%	0.03%
Regeneron Pharmaceuticals Inc	REGN	0.19%	n/a	n/a	12.50%	0.02%
Amazon.com Inc	AMZN	4.76%	n/a	n/a	30.00%	1.43%
Jack Henry & Associates Inc	JKHY	0.04%	1.04%	0.00%	9.50%	0.00%
Ralph Lauren Corp	RL	0.02%	2.37%	0.00%	6.00%	0.00%
Boston Properties Inc	BXP	0.05%	3.47%	0.00%	-2.00%	0.00%
Amphenol Corp	APH	0.12%	0.76%	0.00%	10.50%	0.01%
Howmet Aerospace Inc	HWM	0.04%	0.25%	0.00%	12.00%	0.00%
Pioneer Natural Resources Co	PXD	0.10%	1.50%	0.00%	20.00%	0.02%
Valero Energy Corp	VLO	0.07%	5.91%	0.00%	13.00%	0.01%
Synopsys Inc	SNPS	0.14%	n/a	n/a	12.50%	0.02%
Western Union Co/The	WU	0.02%	4.34%	0.00%	6.00%	0.00%
Etsy Inc	ETSY	0.07%	n/a	n/a	30.00%	0.02%
CH Robinson Worldwide Inc	CHRW	0.03%	2.27%	0.00%	8.00%	0.00%
Accenture PLC	ACN	0.58%	1.05%	0.01%	10.00%	0.06%
TransDigm Group Inc	TDG	0.09%	n/a	n/a	11.00%	0.01%
Yum! Brands Inc	YUM	0.10%	1.53%	0.00%	10.50%	0.01%
Prologis Inc	PLD	0.27%	1.87%	0.01%	8.50%	0.02%
FirstEnergy Corp	FE	0.06%	4.01%	0.00%	11.50%	0.01%
VeriSign Inc	VRSN	0.07%	n/a	n/a	8.50%	0.01%
Quanta Services Inc	PWR	0.04%	0.24%	0.00%	12.50%	0.00%
Henry Schein Inc	HSIC	0.03%	n/a	n/a	6.50%	0.00%
Ameren Corp	AEE	0.06%	2.51%	0.00%	6.50%	0.00%
ANSYS Inc	ANSS	0.09%	n/a	n/a	8.00%	0.01%
NVIDIA Corp	NVDA	1.51%	0.07%	0.00%	15.50%	0.23%
Sealed Air Corp	SEE	0.02%	1.31%	0.00%	13.50%	0.00%
Cognizant Technology Solutions Corp	CTSH	0.11%	1.26%	0.00%	6.50%	0.01%
SVB Financial Group	SIVB	0.09%	n/a	n/a	8.00%	0.01%
Intuitive Surgical Inc	ISRG	0.34%	n/a	n/a	15.00%	0.05%

NVR

0.05%

n/a

8.00%

n/a

0.00%

NVR Inc

[4] [5] [6] [7] [8] Cap-Weighted Weight in Estimated Cap-Weighted Long-Term Long-Term Name Ticker Index Dividend Yield Dividend Yield Growth Est. Growth Est. TTWO 0.05% 12.00% 0.01% Take-Two Interactive Software Inc n/a n/a 1.48% RSG 0.11% 0.00% 7.50% 0.01% Republic Services Inc 0.94% EBAY 0.14% 0.02% eBay Inc 0.00% 16.50% Goldman Sachs Group Inc/The GS 0.38% 1.93% 0.01% 7.00% 0.03% SBA Communications Corp SBAC 0.11% 0.65% 0.00% 45.00% 0.05% SRE 0.11% 3.32% 0.00% 10.00% 0.01% Sempra Energy Moody's Corp MCO 0.19% 0.65% 0.00% 8.50% 0.02% BKNG **Booking Holdings Inc** 0.26% 14.00% 0.04% n/a n/a F5 Networks Inc FFIV 0.03% n/a n/a 7.00% 0.00% AKAM 0.00% Akamai Technologies Inc 0.05% n/a n/a 9.50% Charles River Laboratories International Inc CRL 0.06% 7.00% 0.00% n/a n/a MKTX 0.05% 0.55% 0.00% 14.00% 0.01% MarketAxess Holdings Inc Devon Energy Corp DVN 0.05% 1.49% 0.00% 20.00% 0.01% TECH 0.05% 0.26% 0.00% 13.00% 0.01% Bio-Techne Corp GOOGL Alphabet Inc 0.00% n/a n/a n/a n/a **Teleflex Inc** 0.05% 0.01% TFX 0.34% 0.00% 14.50% Allegion plc ALLE 0.03% 1.00% 0.00% 8.50% 0.00% Netflix Inc NFLX 0.68% n/a 23.50% 0.16% n/a Agilent Technologies Inc А 0.14% 0.44% 0.00% 11.50% 0.02% Trimble Inc TRMB 0.06% 14.00% 0.01% n/a n/a ANTM 0.25% 0.00% 13.00% 0.03% Anthem Inc 1.20% CME 0.20% 0.00% 8.50% 0.02% CME Group Inc 1.78% Juniper Networks Inc JNPR 0.03% 2.76% 0.00% 7.00% 0.00% BlackRock Inc BLK 0.39% 1.75% 0.01% 9.50% 0.04% DTE Energy Co DTE 0.06% 2.74% 0.00% 6.00% 0.00% CE 0.05% 1.72% 0.00% 6.50% 0.00% Celanese Corp NDAQ 0.09% 0.00% 6.50% 0.01% Nasdaq Inc 1.10% Philip Morris International Inc ΡM 0.43% 4.66% 0.02% 6.50% 0.03% Ingersoll Rand Inc IR 0.00% n/a n/a n/a n/a salesforce.com Inc CRM 0.70% n/a 20.00% 0.14% n/a Huntington Ingalls Industries Inc HII 0.02% 2.23% 0.00% 7.00% 0.00% 0.00% MetLife Inc MET 0.14% 3.10% 6.50% 0.01% UA 0.00% Under Armour Inc n/a n/a n/a n/a Tapestry Inc TPR 0.03% 2.48% 0.00% 1.50% 0.00% CSX 0.20% 11.50% 0.02% CSX Corp 1.14% 0.00% Edwards Lifesciences Corp ΕW 0.20% n/a 13.00% 0.03% n/a Ameriprise Financial Inc AMP 0.08% 1.66% 0.00% 13.50% 0.01% Zebra Technologies Corp ZBRA 0.08% 12.50% 0.01% n/a n/a Zimmer Biomet Holdings Inc ZBH 0.09% 0.64% 0.00% 8.50% 0.01% CBRE Group Inc CBRE 0.09% 10.50% 0.01% n/a n/a Mastercard Inc 0.92% 12.50% 0.11% MA 0.51% 0.00% CarMax Inc KMX 0.06% n/a n/a 12.50% 0.01% Intercontinental Exchange Inc ICE 0.18% 1.10% 0.00% 8.00% 0.01% FIS 0.00% Fidelity National Information Services Inc 0.21% 1.22% 28.00% 0.06% CMG 0.14% 22.00% 0.03% Chipotle Mexican Grill Inc n/a n/a Wynn Resorts Ltd WYNN 0.03% 27.00% 0.01% n/a n/a LYV Live Nation Entertainment Inc 0.00% n/a n/a n/a n/a

STANDARD AND POOR'S 500 INDEX

Regions Financial Corp	RF	0.05%	3.33%	0.00%	9.50%	0.01%
Mosaic Co/The	MOS	0.03%	0.93%	0.00%	33.50%	0.01%
Expedia Group Inc	EXPE	0.00%	n/a	n/a	n/a	n/a
Evergy Inc	EVRG	0.04%	3.13%	0.00%	8.00%	0.00%
Discovery Inc	DISCA	0.01%	n/a	n/a	13.50%	0.00%
CF Industries Holdings Inc	CF	0.03%	2.64%	0.00%	19.50%	0.01%
APA Corp	APA	0.02%	0.51%	0.00%	72.50%	0.01%
Leidos Holdings Inc	LDOS	0.04%	1.47%	0.00%	9.00%	0.00%
Alphabet Inc	GOOG	2.52%	n/a	n/a	21.00%	0.53%
Cooper Cos Inc/The	COO	0.06%	0.01%	0.00%	14.50%	0.01%
TE Connectivity Ltd	TEL	0.13%	1.33%	0.00%	9.00%	0.01%
Discover Financial Services	DFS	0.10%	1.56%	0.00%	16.00%	0.02%
Visa Inc	V	1.05%	0.56%	0.01%	12.00%	0.13%
Mid-America Apartment Communities Inc	MAA	0.06%	2.13%	0.00%	0.50%	0.00%
Xylem Inc/NY	XYL	0.07%	0.82%	0.00%	10.50%	0.01%
Marathon Petroleum Corp	MPC	0.00%	3.91%	0.00%	n/a	n/a
Advanced Micro Devices Inc	AMD	0.36%	n/a	n/a	26.50%	0.10%
Tractor Supply Co	TSCO	0.06%	1.07%	0.00%	10.00%	0.01%
ResMed Inc	RMD	0.11%	0.58%	0.00%	8.50%	0.01%
Mettler-Toledo International Inc	MTD	0.10%	n/a	n/a	12.00%	0.01%
Copart Inc	CPRT	0.09%	n/a	n/a	10.00%	0.01%
Fortinet Inc	FTNT	0.14%	n/a	n/a	20.00%	0.03%
Albemarle Corp	ALB	0.07%	0.66%	0.00%	6.50%	0.00%
Moderna Inc	MRNA	0.00%	n/a	n/a	n/a	n/a
Essex Property Trust Inc	ESS	0.06%	2.53%	0.00%	-0.50%	0.00%
Realty Income Corp	0	0.08%	3.91%	0.00%	6.00%	0.00%
Westrock Co	WRK	0.04%	1.84%	0.00%	8.00%	0.00%
IHS Markit Ltd	INFO	0.13%	0.66%	0.00%	10.50%	0.01%
Westinghouse Air Brake Technologies Corp	WAB	0.05%	0.53%	0.00%	9.50%	0.00%
Pool Corp	POOL	0.05%	0.65%	0.00%	15.00%	0.01%
Western Digital Corp	WDC	0.05%	n/a	n/a	1.00%	0.00%
PepsiCo Inc	PEP	0.58%	2.75%	0.02%	6.50%	0.04%
Diamondback Energy Inc	FANG	0.00%	2.33%	0.00%	n/a	n/a
ServiceNow Inc	NOW	0.35%	n/a	n/a	44.50%	0.15%
Church & Dwight Co Inc	CHD	0.06%	1.21%	0.00%	8.00%	0.00%
Duke Realty Corp	DRE	0.05%	1.94%	0.00%	-1.00%	0.00%
Federal Realty Investment Trust	FRT	0.03%	3.51%	0.00%	-2.00%	0.00%
MGM Resorts International	MGM	0.06%	0.02%	0.00%	25.00%	0.01%
American Electric Power Co Inc	AEP	0.12%	3.30%	0.00%	6.50%	0.01%
PTC Inc	PTC	0.00%	n/a	n/a	n/a	n/a
JB Hunt Transport Services Inc	JBHT	0.05%	0.68%	0.00%	8.00%	0.00%
Lam Research Corp	LRCX	0.23%	0.99%	0.00%	17.50%	0.04%
Mohawk Industries Inc	MHK	0.04%	n/a	n/a	6.50%	0.00%
Pentair PLC	PNR	0.03%	1.04%	0.00%	11.00%	0.00%
Vertex Pharmaceuticals Inc	VRTX	0.14%	n/a	n/a	17.00%	0.02%
Amcor PLC	AMCR	0.00%	3.66%	0.00%	n/a	n/a

AIZ

NRG

MNST

0.03%

0.03%

0.14%

1.55%

2.85%

n/a

0.00%

0.00%

n/a

11.50%

-1.50%

11.50%

0.00%

0.00%

0.02%

Assurant Inc

NRG Energy Inc

Monster Beverage Corp

		[4]	[5]	[6]	[7]	[8]
						Cap-Weighted
		Weight in	Estimated	Cap-Weighted	Long-Term	Long-Term
Name	Ticker	Index	Dividend Yield	Dividend Yield	Growth Est.	Growth Est.
Faceback Inc	ED	2 15%	n/o	n/a	18 50%	0 45%
T Mobile US Inc		2.45%	n/a	n/a	10.00% 8 50%	0.45%
I-MODILE US IIIC		0.40%	n/a	n/a	0.00%	0.04%
Alexendria Deal Estate Equities Inc		0.07%	11/a	n/a	10.50%	0.01%
	ARE	0.09%	2.17%	0.00%	13.00%	0.01%
	HUN	0.43%	1.60%	0.01%	9.50%	0.04%
	ABMD	0.04%	n/a	n/a	9.50%	0.00%
Delta Air Lines Inc	DAL	0.07%	n/a	n/a	49.00%	0.03%
United Airlines Holdings Inc	UAL	0.00%	n/a	n/a	n/a	n/a
Seagate Technology Holdings PLC	STX	0.05%	3.06%	0.00%	4.00%	0.00%
News Corp	NWS	0.00%	0.91%	0.00%	n/a	n/a
Centene Corp	CNC	0.10%	n/a	n/a	9.50%	0.01%
Martin Marietta Materials Inc	MLM	0.06%	0.64%	0.00%	6.00%	0.00%
Teradyne Inc	TER	0.05%	0.33%	0.00%	13.00%	0.01%
PayPal Holdings Inc	PYPL	0.92%	n/a	n/a	16.00%	0.15%
Tesla Inc	TSLA	0.00%	n/a	n/a	n/a	n/a
DISH Network Corp	DISH	0.03%	n/a	n/a	2.50%	0.00%
Penn National Gaming Inc	PENN	0.03%	n/a	n/a	30.00%	0.01%
Dow Inc	DOW	0.00%	4.45%	0.00%	n/a	n/a
Everest Re Group Ltd	RE	0.03%	2.34%	0.00%	10.50%	0.00%
Teledvne Technologies Inc	TDY	0.06%	n/a	n/a	14.50%	0.01%
News Corp	NWSA	0.00%	0.89%	0.00%	n/a	n/a
Exelon Corp	FXC	0.13%	3 12%	0.00%	5 50%	0.01%
Global Payments Inc	GPN	0.13%	0.61%	0.00%	16 50%	0.02%
Crown Castle International Corp	CCI	0.23%	2 73%	0.01%	8.50%	0.02%
Antiv PLC	APTV	0.11%	n/a	n/a	15 50%	0.02%
Advance Auto Parts Inc	ΔΔΡ	0.03%	1 97%	0.00%	11.00%	0.00%
Align Technology Inc		0.00%	n/a	n/a	17.00%	0.00%
Illumina Inc		0.10%	n/a	n/a	14.00%	0.00%
		0.10%	n/a	n/a	12 00%	0.00%
Nielsen Heldings PLC		0.04 %	1 1 1 0 %	0.00%	12.00 /0	0.0170
Cormin Ltd		0.00%	1.12/0	0.00%	0.00%	0.01%
		0.09%	0.400/	0.00%	9.00% 10.50%	0.01%
Lucus IIIu Digital Dealty Truct Inc		0.20%	0.4970	0.00%	7 000/	0.03%
		0.13%	2.03% 1.00%	0.00%	1.00%	0.01%
	EQIX	0.20%	1.30%	0.00%	17.00%	0.03%
Las vegas Sands Corp	LVS	0.09%	n/a	n/a	17.50%	0.02%
Discovery Inc	DISCK	0.00%	n/a	n/a	n/a	n/a

STANDARD AND POOR'S 500 INDEX

Notes: [1] Equals sum of Col. [6] [2] Equals sum of Col. [8] [3] Equals ([1] x (1 + (0.5 x [2]))) + [2] [4] Equals weight in S&P 500 based on market capitalization [5] Source: Bloomberg Professional, as of August 31, 2021. [6] Equals [4] x [5]

[6] Equals [4] x [5]
[7] Source: Value Line, as of August 31, 2021.
[8] Equals [4] x [7]

BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
	Average	U.S. Govt.	Diale
	Electric ROF	ou-year Treasury	Premium
	Electric ROE	Treasury	Treman
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	11.04%	7.07% 6.86%	4.77% 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%	7.90% 7.63%	3.28% 1.31%
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%	0.02% 6.81%	4.94% 4.27%
1997.1	11.00%	6.93%	4.27 %
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% 5.37%	7.20% 5.03%
1999.1	10.40%	5 79%	5.05%
1993.3	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% 5.44%	6.81% 5.02%
2001.1	11.38%	5.44%	5.93%
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% 4.85%	0.04% 6.87%
2003.1	11.16%	4.60%	6.56%
2003.3	10.50%	5.11%	5.39%
2003.4	11.34%	5.11%	6.23%
2004.1	11.00%	4.88%	6.12%
2004.2	10.64%	5.32%	5.32%
2004.3	10.75%	5.06%	5.69%
2004.4 2005 1	11.24%	4.80% 1.60%	0.38% 5.03%
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%
2000.4 2007 1	10.00% 10.50%	4.74% 2 80%	5.91% 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% 3.65%	5.98% 6.74%
2000.4 2009 1	10.39%	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%
∠010.4 2011 1	10.38% 10.00%	4.17% 156%	0.21% 5.53%
2011.2	10.26%	4.34%	5.92%
2011.3	10.57%	3.69%	6.88%

BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
	Average	U.S. Govt.	
	Authorized VI	30-year	Risk
	Electric ROE	Treasury	Premium
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%
2014.1	10 10%	3 44%	6.66%
2014.2	9 90%	3 26%	6.64%
2014.0	9.50%	2.20%	6.98%
2014.4	9.9470	2.50%	7.08%
2015.1	0.83%	2.00%	6.04%
2015.2	9.03%	2.00%	6 4 4 %
2015.3	9.40%	2.90%	0.44 <i>%</i>
2015.4	9.00%	2.90%	6.90%
2016.1	9.70%	2.72%	0.98%
2016.2	9.48%	2.57%	6.91%
2016.3	9.74%	2.28%	7.46%
2016.4	9.83%	2.83%	7.00%
2017.1	9.72%	3.04%	6.67%
2017.2	9.64%	2.90%	6.75%
2017.3	10.00%	2.82%	7.18%
2017.4	9.91%	2.82%	7.09%
2018.1	9.69%	3.02%	6.66%
2018.2	9.75%	3.09%	6.66%
2018.3	9.69%	3.06%	6.63%
2018.4	9.52%	3.27%	6.25%
2019.1	9.72%	3.01%	6.71%
2019.2	9.58%	2.78%	6.79%
2019.3	9.53%	2.29%	7.24%
2019.4	9.89%	2.25%	7.63%
2020.1	9.72%	1.89%	7.83%
2020.2	9.58%	1.38%	8.20%
2020.3	9.30%	1.37%	7.93%
2020.4	9.56%	1.62%	7.94%
2021.1	9.45%	2.07%	7.38%
2021.2	9.47%	2.25%	7.21%
2021.3	9.50%	1.93%	7.57%
	0.0070		
AVERAGE	10.65%	4.62%	6.03%
MEDIAN	10.59%	4.63%	6.18%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.91389
R Square	0.83519
Adjusted R Square	0.83378
Standard Error	0.00421
Observations	119

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.010516	0.010516	592.907723	0.000000
Residual	117	0.002075	0.000018		
Total	118	0 012592			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0868	0.00115	75.22	0.000000	0.084488	0.089058	0.084488	0.089058
U.S. Govt. 30-year Treasury	(0.5726)	0.02352	(24.35)	0.000000	(0.619194)	(0.526047)	(0.619194)	(0.526047)

	[7]	[8]	[9]
	U.S. Govt.		
	30-year	Risk	
	Treasury	Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	1.91%	7.58%	9.50%
Blue Chip Near-Term Projected Forecast (Q4 2021 - Q4 2022) [5]	2.42%	7.29%	9.71%
Blue Chip Long-Term Projected Forecast (2023-2027) [6]	3.50%	6.67%	10.17%
AVERAGE			9.79%

Notes:

[3] Equals Column [1] – Column [2]

[7] See notes [4], [5] & [6] [8] Equals 0.086773 + (-0.572621 x Column [7]) [9] Equals Column [7] + Column [8]

^[1] Source: Regulatory Research Associates, rate cases through August 31, 2021

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

^[4] Source: Bloomberg Professional, 30-day average as of August 31, 2021

^[5] Source: Blue Chip Financial Forecasts, Vol. 40, No. 9, September 1, 2021, at 2

^[6] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2020, at 14

CAPITAL STRUCTURE ANALYSIS

COMMON EQUITY RATIO [1]										
Proxy Group Company	Ticker	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	2019Q3	Average
Alliant Energy Corporation	LNT	51.79%	51.51%	50.53%	50.88%	50.12%	50.84%	49.95%	50.45%	50.76%
Ameren Corporation	AEE	51.72%	52.15%	52.63%	53.04%	52.20%	50.80%	51.05%	51.63%	51.90%
American Electric Power Company, Inc.	AEP	47.03%	46.68%	47.12%	47.05%	46.72%	47.04%	47.41%	48.31%	47.17%
Avista Corporation	AVA	48.04%	49.14%	48.55%	48.02%	47.83%	49.14%	48.79%	49.17%	48.58%
CMS Energy Corporation	CMS	52.21%	51.42%	50.05%	51.36%	49.93%	49.61%	50.94%	51.48%	50.88%
Duke Energy Corporation	DUK	52.33%	52.51%	52.05%	52.42%	51.82%	51.37%	52.24%	52.13%	52.11%
Entergy Corporation	ETR	46.18%	45.13%	46.21%	47.57%	47.38%	47.07%	47.98%	47.64%	46.90%
Evergy, Inc.	EVRG	57.60%	56.66%	58.26%	58.71%	56.61%	56.48%	57.92%	58.44%	57.58%
IDACORP, Inc.	IDA	54.41%	51.83%	53.96%	54.04%	51.25%	55.18%	55.14%	54.92%	53.84%
MGE Energy, Inc.	MGEE	60.63%	60.79%	60.03%	61.32%	60.64%	59.14%	58.67%	57.15%	59.79%
NextEra Energy, Inc.	NEE	60.03%	60.68%	58.13%	60.08%	62.57%	58.70%	56.64%	58.24%	59.38%
NorthWestern Corporation	NWE	46.39%	46.04%	46.12%	47.15%	47.49%	47.78%	47.59%	47.80%	47.05%
Otter Tail Corporation	OTTR	52.01%	52.34%	53.60%	52.72%	52.84%	50.85%	51.12%	52.11%	52.20%
Pinnacle West Capital Corporation	PNW	49.62%	50.67%	51.35%	51.58%	50.91%	51.65%	52.80%	54.24%	51.60%
Portland General Electric Company	POR	46.04%	46.17%	44.88%	45.94%	47.04%	49.90%	49.85%	51.78%	47.70%
Southern Company	SO	53.26%	54.61%	54.26%	54.50%	53.21%	53.82%	53.17%	52.96%	53.72%
Xcel Energy Inc.	XEL	53.75%	53.44%	53.79%	54.19%	52.76%	53.84%	54.04%	53.99%	53.72%
MEAN		51.94%	51.87%	51.85%	52.39%	51.84%	51.95%	52.08%	52.50%	52.05%
LOW		46.04%	45.13%	44.88%	45.94%	46.72%	47.04%	47.41%	47.64%	46.90%
HIGH		60.63%	60.79%	60.03%	61.32%	62.57%	59.14%	58.67%	58.44%	59.79%

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES [2]

Company Name	Ticker	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	2019Q3	Average
Interstate Power and Light Company	LNT	50.98%	50.73%	50.92%	50.68%	48.89%	49.75%	48.74%	48.56%	49.91%
Wisconsin Power and Light Company	LNT	52.95%	52.65%	49.96%	51.18%	51.95%	52.41%	51.71%	53.30%	52.01%
Ameren Illinois Company	AEE	53.76%	53.90%	54.68%	54.57%	55.46%	53.49%	52.22%	51.81%	53.74%
Union Electric Company	AEE	49.91%	50.57%	50.81%	51.59%	49.16%	48.36%	49.98%	51.47%	50.23%
AEP Texas, Inc.	AEP	40.97%	41.23%	42.04%	42.05%	43.01%	43.75%	43.77%	46.42%	42.90%
Appalachian Power Company	AEP	47.55%	47.17%	47.10%	47.10%	46.65%	47.21%	47.43%	48.51%	47.34%
Indiana Michigan Power Company	AEP	47.22%	48.04%	47.80%	47.02%	46.22%	46.55%	45.77%	45.65%	46.78%
Kentucky Power Company	AEP	43.17%	43.91%	43.70%	43.67%	43.58%	44.34%	44.31%	44.58%	43.91%
Kingsport Power Company	AEP	48.90%	49.66%	49.33%	47.78%	47.59%	47.86%	49.14%	49.54%	48.72%
Ohio Power Company	AEP	48.61%	48.63%	49.90%	49.98%	50.32%	50.88%	52.99%	53.42%	50.59%
Public Service Company of Oklahoma	AEP	55.57%	51.23%	50.21%	50.58%	48.70%	48.26%	49.69%	49.89%	50.52%
Southwestern Electric Power Company	AEP	47.80%	47.09%	49.58%	49.87%	48.46%	47.57%	48.22%	48.63%	48.40%
Wheeling Power Company	AEP	50.79%	52.03%	51.48%	50.33%	49.60%	50.93%	49.71%	50.90%	50.72%
Avista Corporation	AVA	47.46%	48.61%	48.04%	47.44%	47.25%	48.62%	48.33%	48.57%	48.04%
Alaska Electric Light and Power Company	AVA	61.14%	60.87%	59.83%	60.67%	60.62%	60.34%	58.51%	61.28%	60.41%
Consumers Energy Company	CMS	52.21%	51.42%	50.05%	51.36%	49.93%	49.61%	50.94%	51.48%	50.88%
Duke Energy Carolinas, LLC	DUK	50.49%	51.66%	51.30%	51.93%	51.30%	50.26%	52.05%	51.69%	51.34%
Duke Energy Florida, LLC	DUK	52.37%	51.98%	51.88%	51.86%	50.29%	50.16%	49.91%	51.38%	51.23%
Duke Energy Indiana, LLC	DUK	54.84%	54.32%	52.96%	52.58%	50.12%	50.22%	52.66%	51.52%	52.40%
Duke Energy Kentucky, Inc.	DUK	51.15%	47.71%	47.09%	47.96%	48.48%	46.90%	46.44%	45.44%	47.64%
Duke Energy Ohio, Inc.	DUK	59.88%	61.17%	61.55%	61.71%	61.73%	62.24%	62.67%	62.90%	61.73%
Duke Energy Progress, LLC	DUK	51.08%	50.59%	49.89%	50.65%	51.51%	51.18%	51.10%	50.63%	50.83%
Entergy Arkansas, Inc.	ETR	47.04%	46.62%	45.94%	44.42%	47.93%	47.46%	47.90%	47.72%	46.88%
Entergy Louisiana, LLC	ETR	44.51%	43.54%	45.62%	48.23%	46.62%	46.00%	47.47%	47.13%	46.14%
Entergy Mississippi, Inc.	ETR	46.65%	45.91%	48.19%	47.91%	47.09%	48.92%	48.60%	48.35%	47.70%
Entergy New Orleans, LLC	ETR	49.06%	48.65%	48.25%	44.14%	43.23%	42.79%	46.69%	50.33%	46.64%
Entergy Texas, Inc.	ETR	50.03%	47.26%	46.68%	51.82%	50.71%	50.08%	49.93%	48.13%	49.33%
Kansas City Power & Light Company	EVRG	49.86%	48.10%	48.69%	48.77%	46.87%	45.82%	48.42%	49.70%	48.28%
Kansas Gas and Electric Company	EVRG	82.90%	82.73%	82.66%	82.55%	82.18%	82.03%	81.96%	81.84%	82.36%
KCP&L Greater Missouri Operations Company	EVRG	41.97%	40.14%	47.22%	49.89%	46.95%	45.68%	47.14%	47.94%	45.87%
Westar Energy (KPL)	EVRG	56.37%	56.25%	56.66%	56.97%	54.25%	55.10%	56.04%	56.24%	55.99%
Idaho Power Co.	IDA	54.41%	51.83%	53.96%	54.04%	51.25%	55.18%	55.14%	54.92%	53.84%
Madison Gas and Electric Company	MGEE	60.63%	60.79%	60.03%	61.32%	60.64%	59.14%	58.67%	57.15%	59.79%
Florida Power & Light Company	NEE	60.22%	60.70%	57.81%	59.99%	63.02%	59.82%	57.82%	59.04%	59.80%
Gulf Power Company	NEE	58.37%	60.51%	60.94%	60.84%	58.47%	48.83%	45.12%	50.20%	55.41%
NorthWestern Corporation	NWE	46.39%	46.04%	46.12%	47.15%	47.49%	47.78%	47.59%	47.80%	47.05%
Otter Tail Power Company	OTTR	52.01%	52.34%	53.60%	52.72%	52.84%	50.85%	51.12%	52.11%	52.20%
Arizona Public Service Company	PNW	49.62%	50.67%	51.35%	51.58%	50.91%	51.65%	52.80%	54.24%	51.60%
Portland General Electric Company	POR	46.04%	46.17%	44.88%	45.94%	47.04%	49.90%	49.85%	51.78%	47.70%
Alabama Power Company	SO	52.51%	53.31%	51.55%	51.15%	52.15%	52.24%	50.23%	50.60%	51.72%
Georgia Power Company	SO	54.29%	55.33%	55.93%	56.59%	53.71%	54.81%	55.37%	54.87%	55.11%
Mississippi Power Company	SO	48.99%	55.88%	54.87%	55.53%	54.92%	54.12%	50.84%	50.23%	53.17%
Northern States Power Company - MN	XEL	52.07%	51.37%	52.44%	52.20%	50.13%	52.55%	52.06%	51.78%	51.82%
Northern States Power Company - WI	XEL	53.99%	54.48%	53.34%	53.13%	52.61%	52.69%	52.32%	51.56%	53.01%
Public Service Company of Colorado	XEL	55.38%	54.91%	55.97%	56.26%	54.56%	55.67%	56.10%	56.31%	55.64%
Southwestern Public Service Company	XEL	53.68%	54.27%	52.03%	54.06%	54.22%	52.75%	54.14%	54.21%	53.67%

<u>Notes:</u> [1] Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of Operating Subsidiaries. [2] Electric Operating Subsidiaries with data listed as N/A from S&P Global have been excluded from the analysis.
CAPITAL STRUCTURE ANALYSIS

	L	ONG-TEF	RM DEBT	RATIO [1]					
Proxy Group Company	Ticker	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	2019Q3	Average
Alliant Energy Corporation	LNT	45.02%	45.62%	45.70%	46.28%	47.80%	45.77%	46.72%	47.67%	46.32%
Ameren Corporation	AEE	47.66%	44.55%	46.52%	44.79%	45.91%	47.22%	46.32%	44.66%	45.95%
American Electric Power Company, Inc.	AEP	52.07%	51.26%	50.73%	51.27%	50.61%	50.69%	50.60%	50.63%	50.98%
Avista Corporation	AVA	45.21%	46.31%	46.65%	48.31%	44.53%	46.14%	46.43%	47.50%	46.39%
CMS Energy Corporation	CMS	47.41%	47.86%	47.77%	48.26%	49.69%	50.00%	48.04%	48.10%	48.39%
Duke Energy Corporation	DUK	45.75%	45.90%	46.24%	47.05%	47.25%	47.38%	47.16%	46.93%	46.71%
Entergy Corporation	ETR	53.72%	54.77%	53.69%	52.31%	52.50%	52.81%	51.89%	52.23%	52.99%
Evergy, Inc.	EVRG	39.06%	38.47%	40.35%	40.59%	40.97%	38.02%	38.92%	39.37%	39.47%
IDACORP, Inc.	IDA	45.59%	45.94%	46.04%	45.96%	48.75%	44.82%	44.86%	44.57%	45.81%
MGE Energy, Inc.	MGEE	37.33%	35.57%	36.36%	38.68%	39.36%	40.64%	41.33%	38.63%	38.49%
NextEra Energy, Inc.	NEE	38.96%	37.57%	38.04%	39.47%	36.74%	39.51%	38.77%	40.22%	38.66%
NorthWestern Corporation	NWE	53.61%	53.96%	51.66%	50.55%	50.20%	52.22%	52.41%	52.20%	52.10%
Otter Tail Corporation	OTTR	43.62%	44.03%	45.35%	47.28%	47.16%	49.15%	48.88%	41.90%	45.92%
Pinnacle West Capital Corporation	PNW	46.48%	47.72%	48.65%	48.42%	47.21%	44.60%	47.20%	45.74%	47.00%
Portland General Electric Company	POR	50.50%	50.38%	52.54%	50.08%	50.29%	49.73%	50.15%	48.22%	50.24%
Southern Company	SO	45.62%	44.34%	45.00%	44.93%	45.27%	44.60%	45.46%	45.90%	45.14%
Xcel Energy Inc.	XEL	45.97%	46.50%	44.33%	45.57%	47.21%	44.83%	45.50%	45.75%	45.71%
MEAN		46.09%	45.93%	46.21%	46.46%	46.55%	46.36%	46.51%	45.90%	46.25%
LOW		37.33%	35.57%	36.36%	38.68%	36.74%	38.02%	38.77%	38.63%	38.49%
HIGH		53.72%	54.77%	53.69%	52.31%	52.50%	52.81%	52.41%	52.23%	52.99%

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

Company Name	Ticker	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	2019Q3	Average
Interstate Power and Light Company	LNT	46.33%	46.57%	46.38%	46.60%	48.30%	47.32%	48.28%	48.44%	47.28%
Wisconsin Power and Light Company	LNT	43.15%	44.23%	44.70%	45.79%	47.06%	43.52%	44.45%	46.51%	44.93%
Ameren Illinois Company	AEE	45.73%	42.16%	44.41%	41.90%	43.30%	45.00%	46.31%	43.32%	44.02%
Union Electric Company	AEE	49.35%	46.70%	48.39%	47.52%	48.34%	49.25%	46.33%	45.87%	47.72%
AEP Texas, Inc.	AEP	59.03%	55.17%	57.08%	57.93%	52.49%	55.32%	56.23%	52.41%	55.71%
Appalachian Power Company	AEP	52.45%	52.83%	52.70%	52.90%	53.35%	48.82%	49.88%	51.02%	51.74%
Indiana Michigan Power Company	AEP	52.78%	49.82%	50.41%	50.22%	50.41%	51.61%	52.17%	52.51%	51.24%
Kentucky Power Company	AEP	56.29%	52.19%	52.81%	53.64%	54.20%	55.07%	49.28%	50.39%	52.98%
Kingsport Power Company	AEP	42.49%	42.86%	43.01%	38.43%	38.97%	39.10%	40.82%	41.79%	40.93%
Ohio Power Company	AEP	50.41%	51.37%	45.30%	45.96%	46.93%	48.54%	44.24%	46.20%	47.37%
Public Service Company of Oklahoma	AEP	41.03%	42.37%	44.75%	46.78%	47.61%	49.23%	50.31%	50.11%	46.52%
Southwestern Electric Power Company	AEP	50.19%	51.44%	48.06%	48.75%	49.03%	49.57%	50.59%	51.37%	49.88%
Wheeling Power Company	AEP	43.78%	44.43%	43.67%	43.11%	43.02%	43.58%	43.18%	43.95%	43.59%
Avista Corporation	AVA	45.49%	46.63%	46.97%	48.72%	44.77%	46.44%	46.75%	47.93%	46.71%
Alaska Electric Light and Power Company	AVA	38.86%	39.13%	39.64%	39.33%	39.38%	39.66%	39.64%	38.72%	39.29%
Consumers Energy Company	CMS	47.41%	47.86%	47.77%	48.26%	49.69%	50.00%	48.04%	48.10%	48.39%
Duke Energy Carolinas, LLC	DUK	47.73%	46.39%	46.73%	48.07%	48.19%	49.74%	47.84%	48.11%	47.85%
Duke Energy Florida, LLC	DUK	45.22%	46.13%	46.77%	47.68%	48.08%	47.62%	50.09%	45.89%	47.19%
Duke Energy Indiana, LLC	DUK	45.16%	45.68%	45.59%	46.48%	49.88%	49.78%	46.99%	48.48%	47.25%
Duke Energy Kentucky, Inc.	DUK	46.83%	47.15%	47.96%	49.36%	45.92%	46.77%	47.62%	54.56%	48.27%
Duke Energy Ohio, Inc.	DUK	34.86%	35.95%	37.00%	37.57%	38.27%	32.63%	33.43%	34.02%	35.46%
Duke Energy Progress, LLC	DUK	47.50%	48.54%	48.52%	48.46%	47.12%	47.58%	48.54%	48.93%	48.15%
Entergy Arkansas, Inc.	ETR	52.96%	53.38%	54.06%	55.58%	52.07%	52.54%	52.10%	52.28%	53.12%
Entergy Louisiana, LLC	ETR	55.49%	56.46%	54.38%	51.77%	53.38%	54.00%	52.53%	52.87%	53.86%
Entergy Mississippi, Inc.	ETR	53.35%	54.09%	51.81%	52.09%	52.91%	51.08%	51.40%	51.65%	52.30%
Entergy New Orleans, LLC	ETR	50.94%	51.35%	51.75%	55.86%	56.77%	57.21%	53.31%	49.67%	53.36%
Entergy Texas, Inc.	ETR	49.21%	51.98%	52.55%	47.32%	48.41%	49.03%	49.08%	50.84%	49.80%
Kansas City Power & Light Company	EVRG	50.14%	49.95%	51.31%	51.23%	52.59%	45.88%	47.83%	48.86%	49.72%
Kansas Gas and Electric Company	EVRG	17.10%	17.27%	17.34%	17.45%	17.82%	17.97%	18.04%	18.16%	17.64%
KCP&L Greater Missouri Operations Company	EVRG	43.66%	37.27%	43.64%	44.41%	43.79%	44.74%	46.50%	45.72%	43.72%
Westar Energy (KPL)	EVRG	40.05%	40.72%	42.69%	43.03%	42.95%	40.03%	40.63%	41.29%	41.42%
Idaho Power Co.	IDA	45.59%	45.94%	46.04%	45.96%	48.75%	44.82%	44.86%	44.57%	45.81%
Madison Gas and Electric Company	MGEE	37.33%	35.57%	36.36%	38.68%	39.36%	40.64%	41.33%	38.63%	38.49%
Florida Power & Light Company	NEE	39.75%	38.10%	38.47%	40.01%	36.76%	39.64%	38.17%	39.71%	38.83%
Gulf Power Company	NEE	32.04%	32.85%	34.17%	34.74%	36.59%	38.41%	44.58%	45.39%	37.35%
NorthWestern Corporation	NWE	53.61%	53.96%	51.66%	50.55%	50.20%	52.22%	52.41%	52.20%	52.10%
Otter Tail Power Company	OTTR	43.62%	44.03%	45.35%	47.28%	47.16%	49.15%	48.88%	41.90%	45.92%
Arizona Public Service Company	PNW	46.48%	47.72%	48.65%	48.42%	47.21%	44.60%	47.20%	45.74%	47.00%
Portland General Electric Company	POR	50.50%	50.38%	52.54%	50.08%	50.29%	49.73%	50.15%	48.22%	50.24%
Alabama Power Company	SO	46.02%	45.19%	46.88%	47.31%	46.24%	46.14%	48.10%	47.74%	46.70%
Georgia Power Company	SO	44.70%	44.00%	43.86%	43.41%	44.67%	43.60%	43.29%	44.20%	43.97%
Mississippi Power Company	SO	51.01%	42.49%	44.34%	44.47%	44.95%	44.63%	49.16%	49.76%	46.35%
Northern States Power Company - MN	XEL	47.92%	48.62%	46.16%	47.79%	49.86%	47.44%	47.67%	48.20%	47.96%
Northern States Power Company - WI	XEL	44.40%	44.88%	45.71%	46.87%	47.39%	43.28%	44.16%	44.71%	45.18%
Public Service Company of Colorado	XEL	44.55%	45.03%	42.54%	43.22%	45.37%	42.72%	43.51%	43.61%	43.82%
Southwestern Public Service Company	XEL	45.38%	45.73%	44.03%	45.77%	45.78%	44.69%	45.86%	45.79%	45.38%

<u>Notes:</u> [1] Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of Operating Subsidiaries. [2] Electric Operating Subsidiaries with data listed as N/A from S&P Global have been excluded from the analysis.

CAPITAL STRUCTURE ANALYSIS

PREFERRED EQUITY RATIO [1]											
Proxy Group Company	Ticker	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	2019Q3	Average	
Alliant Energy Corporation	LNT	1.59%	1.61%	1.61%	1.63%	1.69%	1.74%	1.77%	1.80%	1.68%	
Ameren Corporation	AEE	0.63%	0.65%	0.75%	0.80%	0.82%	0.85%	0.87%	0.89%	0.78%	
American Electric Power Company, Inc.	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Avista Corporation	AVA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
CMS Energy Corporation	CMS	0.22%	0.22%	0.22%	0.22%	0.22%	0.23%	0.25%	0.25%	0.23%	
Duke Energy Corporation	DUK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Entergy Corporation	ETR	0.10%	0.10%	0.11%	0.11%	0.12%	0.12%	0.13%	0.13%	0.11%	
Evergy, Inc.	EVRG	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
IDACORP, Inc.	IDA	0.00%	2.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	
MGE Energy, Inc.	MGEE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
NextEra Energy, Inc.	NEE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
NorthWestern Corporation	NWE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Otter Tail Corporation	OTTR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Pinnacle West Capital Corporation	PNW	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Portland General Electric Company	POR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Southern Company	SO	0.55%	0.56%	0.58%	0.57%	0.59%	0.60%	0.62%	0.62%	0.58%	
Xcel Energy Inc.	XEL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
MEAN		0.18%	0.32%	0.19%	0.20%	0.20%	0.21%	0.21%	0.22%	0.22%	
LOW		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
HIGH		1.59%	2.23%	1.61%	1.63%	1.69%	1.74%	1.77%	1.80%	1.68%	

PREFERRED EQUITY RATIO - UTILITY OPERATING COMPANIES [2]

Company Name	Ticker	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	2019Q3	Average
Interstate Power and Light Company	LNT	2.69%	2.71%	2.70%	2.72%	2.82%	2.93%	2.98%	2.99%	2.82%
Wisconsin Power and Light Company	LNT	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ameren Illinois Company	AEE	0.50%	0.52%	0.69%	0.72%	0.74%	0.77%	0.79%	0.81%	0.69%
Union Electric Company	AEE	0.74%	0.77%	0.80%	0.88%	0.90%	0.92%	0.95%	0.96%	0.86%
AEP Texas, Inc.	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Appalachian Power Company	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Indiana Michigan Power Company	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Kentucky Power Company	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Kingsport Power Company	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ohio Power Company	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Public Service Company of Oklahoma	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Southwestern Electric Power Company	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Wheeling Power Company	AEP	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Avista Corporation	AVA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Alaska Electric Light and Power Company	AVA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Consumers Energy Company	CMS	0.22%	0.22%	0.22%	0.22%	0.22%	0.23%	0.25%	0.25%	0.23%
Duke Energy Carolinas, LLC	DUK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Duke Energy Florida, LLC	DUK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Duke Energy Indiana, LLC	DUK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Duke Energy Kentucky, Inc.	DUK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Duke Energy Ohio, Inc.	DUK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Duke Energy Progress, LLC	DUK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Entergy Arkansas, Inc.	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Entergy Louisiana, LLC	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Entergy Mississippi, Inc.	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Entergy New Orleans, LLC	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Entergy Texas, Inc.	ETR	0.76%	0.76%	0.77%	0.86%	0.88%	0.89%	0.99%	1.03%	0.87%
Kansas City Power & Light Company	EVRG	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Kansas Gas and Electric Company	EVRG	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
KCP&L Greater Missouri Operations Compa	r EVRG	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Westar Energy (KPL)	EVRG	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Idaho Power Co.	IDA	0.00%	2.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%
Madison Gas and Electric Company	MGEE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Florida Power & Light Company	NEE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Gulf Power Company	NEE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NorthWestern Corporation	NWE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Otter Tail Power Company	OTTR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Arizona Public Service Company	PNW	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Portland General Electric Company	POR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Alabama Power Company	SO	1.47%	1.51%	1.56%	1.54%	1.61%	1.62%	1.67%	1.66%	1.58%
Georgia Power Company	SO	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mississippi Power Company	SO	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Northern States Power Company - MN	XEL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Northern States Power Company - WI	XEL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Public Service Company of Colorado	XEL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Southwestern Public Service Company	XEL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

<u>Notes:</u> [1] Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of Operating Subsidiaries. [2] Electric Operating Subsidiaries with data listed as N/A from S&P Global have been excluded from the analysis.

CAPITAL STRUCTURE ANALYSIS

	S	HORT-TE	ERM DEB	T RATIO	[1]					
Proxy Group Company	Ticker	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	2019Q3	Average
Alliant Energy Corporation	LNT	1.60%	1.27%	2.15%	1.21%	0.40%	1.66%	1.56%	0.08%	1.24%
Ameren Corporation	AEE	0.00%	2.65%	0.10%	1.37%	1.07%	1.13%	1.76%	2.82%	1.36%
American Electric Power Company, Inc.	AEP	0.90%	2.06%	2.15%	1.68%	2.67%	2.27%	2.00%	1.05%	1.85%
Avista Corporation	AVA	6.75%	4.55%	4.80%	3.68%	7.64%	4.72%	4.78%	3.33%	5.03%
CMS Energy Corporation	CMS	0.16%	0.50%	1.96%	0.16%	0.16%	0.16%	0.77%	0.17%	0.51%
Duke Energy Corporation	DUK	1.91%	1.59%	1.71%	0.53%	0.93%	1.25%	0.60%	0.93%	1.18%
Entergy Corporation	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Evergy, Inc.	EVRG	3.35%	4.87%	1.39%	0.70%	2.42%	5.50%	3.16%	2.18%	2.95%
IDACORP, Inc.	IDA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.51%	0.06%
MGE Energy, Inc.	MGEE	2.05%	3.65%	3.61%	0.00%	0.00%	0.22%	0.00%	4.22%	1.72%
NextEra Energy, Inc.	NEE	1.01%	1.75%	3.83%	0.45%	0.69%	1.79%	4.59%	1.53%	1.96%
NorthWestern Corporation	NWE	0.00%	0.00%	2.22%	2.30%	2.31%	0.00%	0.00%	0.00%	0.85%
Otter Tail Corporation	OTTR	4.36%	3.63%	1.05%	0.00%	0.00%	0.00%	0.00%	5.99%	1.88%
Pinnacle West Capital Corporation	PNW	3.90%	1.61%	0.00%	0.00%	1.89%	3.76%	0.00%	0.03%	1.40%
Portland General Electric Company	POR	3.46%	3.45%	2.58%	3.98%	2.67%	0.38%	0.00%	0.00%	2.06%
Southern Company	SO	0.57%	0.49%	0.16%	0.00%	0.93%	0.99%	0.76%	0.52%	0.55%
Xcel Energy Inc.	XEL	0.28%	0.06%	1.87%	0.24%	0.03%	1.33%	0.46%	0.25%	0.57%
MEAN		1.78%	1.89%	1.74%	0.96%	1.40%	1.48%	1.20%	1.39%	1.48%
LOW		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HIGH		6.75%	4.87%	4.80%	3.98%	7.64%	5.50%	4.78%	5.99%	5.03%

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

Company Name	Ticker	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	2019Q3	Average
Interstate Power and Light Company	LNT	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Wisconsin Power and Light Company	LNT	3.90%	3.12%	5.34%	3.03%	0.99%	4.07%	3.84%	0.19%	3.06%
Ameren Illinois Company	AEE	0.00%	3.43%	0.22%	2.82%	0.50%	0.75%	0.68%	4.06%	1.56%
Union Electric Company	AEE	0.00%	1.95%	0.00%	0.00%	1.60%	1.48%	2.74%	1.70%	1.18%
AEP Texas, Inc.	AEP	0.00%	3.60%	0.88%	0.03%	4.51%	0.93%	0.00%	1.17%	1.39%
Appalachian Power Company	AEP	0.00%	0.00%	0.20%	0.00%	0.00%	3.96%	2.69%	0.47%	0.92%
Indiana Michigan Power Company	AEP	0.00%	2.14%	1.79%	2.76%	3.37%	1.84%	2.06%	1.84%	1.98%
Kentucky Power Company	AEP	0.54%	3.90%	3.48%	2.69%	2.22%	0.59%	6.41%	5.03%	3.11%
Kingsport Power Company	AEP	8.61%	7.48%	7.66%	13.79%	13.44%	13.05%	10.03%	8.68%	10.34%
Ohio Power Company	AEP	0.98%	0.00%	4.80%	4.06%	2.75%	0.58%	2.77%	0.38%	2.04%
Public Service Company of Oklahoma	AEP	3.41%	6.40%	5.05%	2.64%	3.69%	2.51%	0.00%	0.00%	2.96%
Southwestern Electric Power Company	AEP	2.01%	1.47%	2.35%	1.38%	2.51%	2.87%	1.18%	0.00%	1.72%
Wheeling Power Company	AEP	5.43%	3.54%	4.85%	6.56%	7.39%	5.49%	7.11%	5.15%	5.69%
Avista Corporation	AVA	7.05%	4.75%	4.99%	3.84%	7.99%	4.94%	4.92%	3.50%	5.25%
Alaska Electric Light and Power Company	AVA	0.00%	0.00%	0.53%	0.00%	0.00%	0.00%	1.85%	0.00%	0.30%
Consumers Energy Company	CMS	0.16%	0.50%	1.96%	0.16%	0.16%	0.16%	0.77%	0.17%	0.51%
Duke Energy Carolinas, LLC	DUK	1.77%	1.95%	1.97%	0.00%	0.51%	0.00%	0.12%	0.20%	0.82%
Duke Energy Florida, LLC	DUK	2.41%	1.89%	1.34%	0.46%	1.64%	2.21%	0.00%	2.74%	1.59%
Duke Energy Indiana, LLC	DUK	0.00%	0.00%	1.45%	0.94%	0.00%	0.00%	0.34%	0.00%	0.34%
Duke Energy Kentucky, Inc.	DUK	2.03%	5.14%	4.95%	2.68%	5.60%	6.33%	5.94%	0.00%	4.08%
Duke Energy Ohio, Inc.	DUK	5.27%	2.88%	1.45%	0.72%	0.00%	5.12%	3.90%	3.08%	2.80%
Duke Energy Progress, LLC	DUK	1.42%	0.87%	1.59%	0.89%	1.38%	1.24%	0.36%	0.44%	1.02%
Entergy Arkansas, Inc.	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Entergy Louisiana, LLC	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Entergy Mississippi, Inc.	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Entergy New Orleans, LLC	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Entergy Texas, Inc.	ETR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Kansas City Power & Light Company	EVRG	0.00%	1.95%	0.00%	0.00%	0.54%	8.30%	3.75%	1.44%	2.00%
Kansas Gas and Electric Company	EVRG	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
KCP&L Greater Missouri Operations Company	EVRG	14.36%	22.59%	9.14%	5.70%	9.25%	9.58%	6.36%	6.34%	10.42%
Westar Energy (KPL)	EVRG	3.58%	3.03%	0.65%	0.00%	2.81%	4.87%	3.33%	2.47%	2.59%
Idaho Power Co.	IDA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.51%	0.06%
Madison Gas and Electric Company	MGEE	2.05%	3.65%	3.61%	0.00%	0.00%	0.22%	0.00%	4.22%	1.72%
Florida Power & Light Company	NEE	0.03%	1.20%	3.72%	0.00%	0.23%	0.54%	4.00%	1.25%	1.37%
Gulf Power Company	NEE	9.59%	6.63%	4.90%	4.42%	4.94%	12.76%	10.31%	4.41%	7.25%
NorthWestern Corporation	NWE	0.00%	0.00%	2.22%	2.30%	2.31%	0.00%	0.00%	0.00%	0.85%
Otter Tail Power Company	OTTR	4.36%	3.63%	1.05%	0.00%	0.00%	0.00%	0.00%	5.99%	1.88%
Arizona Public Service Company	PNW	3.90%	1.61%	0.00%	0.00%	1.89%	3.76%	0.00%	0.03%	1.40%
Portland General Electric Company	POR	3.46%	3.45%	2.58%	3.98%	2.67%	0.38%	0.00%	0.00%	2.06%
Alabama Power Company	SO	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Georgia Power Company	SO	1.02%	0.68%	0.20%	0.00%	1.62%	1.59%	1.34%	0.93%	0.92%
Mississippi Power Company	SO	0.00%	1.63%	0.79%	0.00%	0.13%	1.26%	0.00%	0.01%	0.48%
Northern States Power Company - MN	XEL	0.01%	0.01%	1.40%	0.01%	0.01%	0.01%	0.27%	0.01%	0.22%
Northern States Power Company - WI	XEL	1.60%	0.64%	0.95%	0.00%	0.00%	4.03%	3.52%	3.73%	1.81%
Public Service Company of Colorado	XEL	0.06%	0.06%	1.49%	0.53%	0.07%	1.62%	0.39%	0.08%	0.54%
Southwestern Public Service Company	XEL	0.94%	0.00%	3.94%	0.16%	0.00%	2.56%	0.00%	0.00%	0.95%

Notes:

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

[2] Electric Operating Subsidiaries with data listed as N/A from S&P Global have been excluded from the analysis.



MP Exhibit___ (Bulkley) Attachment A Docket No. E015/GR-21-335 Resume of Ann E. Bulkley

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.

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 saleleaseback 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.

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.

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 Comm	ission			
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 Cor	nmissio	n		
Arkansas Oklahoma Gas Corporation	10/13	Arkansas Oklahoma Gas Corporation	Docket No. 13-078-U	Return on Equity
Colorado Public Utilities Co	mmissio	n		
Public Service Company of Colorado	07/21	Public Service Company of Colorado	21AL-0317E	Return on Equity
Public Service Company of Colorado	02/20	Public Service Company of Colorado	20AL-0049G	Return on Equity
Public Service Company of Colorado	05/19	Public Service Company of Colorado	19AL-0268E	Return on Equity
Public Service Company of Colorado	01/19	Public Service Company of Colorado	19AL-0063ST	Return on Equity
Atmos Energy Corporation	05/15	Atmos Energy Corporation	Docket No. 15AL-0299G	Return on Equity
Atmos Energy Corporation	04/14	Atmos Energy Corporation	Docket No. 14AL-0300G	Return on Equity
Atmos Energy Corporation	05/13	Atmos Energy Corporation	Docket No. 13AL-0496G	Return on Equity
Connecticut Public Utilities	Regulat	ory Authority		
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	Commis	sion		



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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 Comm	ission			
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 Commiss	ion			
North Shore Gas Company	02/21	North Shore Gas Company	No. 20-0810	Return on Equity
Indiana Utility Regulatory C	ommiss	ion		
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



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO	. SUBJECT
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 Comme	erce Util	ities Board		
Iowa-American Water Company	08/20	Iowa-American Water Company	Docket No. RPU-2020 0001)- Return on Equity
Kansas Corporation Commi	ssion			
Atmos Energy Corporation	08/15	Atmos Energy Corporation	Docket No. 16-ATMG- 079-RTS	Return on Equity
Kentucky Public Service Con	nmissio	n		
Kentucky American Water Company	11/18	Kentucky American Water Company	Docket No. 2018-00358	8 Return on Equity
Maine Public Utilities Comm	nission			
Central Maine Power	10/18	Central Maine Power	Docket No. 2018-194	Return on Equity
Maryland Public Service Co	mmissio	n		
Maryland American Water Company	06/18	Maryland American Water Company	Case No. 9487	Return on Equity
Massachusetts Appellate Ta	x 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 Publi	c 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 Con	nmissio	n		
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				



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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 C	ommiss	ion		
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 Con	nmission	1		
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 Con	nmissio	n		
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 T	ax 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
New Hampshire Public Utili	ties Con	ımission		
Public Service Company of New Hampshire	05/19	Public Service Company of New Hampshire	DE-19-057	Return on Equity



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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-Rockingha	m Super	ior 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 Regulati	on Com	mission		
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 Publ	ic Service		
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



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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	05/19	New York State Electric and Gas Company	19-E-0378 19-G-0379 19-E-0380	Return on Equity
Rochester Gas and Electric		Rochester Gas and Electric	19-G-0381	
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	e Commi	ssion		
Montana-Dakota Utilities Co.	08/20	Montana-Dakota Utilities Co.	C-PU-20-379	Return on Equity
Northern States Power Company	12/12	Northern States Power Company	C-PU-12-813	Return on Equity
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity
Oklahoma Corporation Com	mission	I		
Arkansas Oklahoma Gas Corporation	01/13	Arkansas Oklahoma Gas Corporation	Cause No. PUD 201200236	Return on Equity
Oregon Public Service Com	nission			
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	Commis	sion		



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT				
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.	11/18	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				
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	04/18	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								



SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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