MONTANA-DAKOTA UTILITIES CO.

BEFORE THE NORTH DAKOTA PUBLIC SERVICE COMMISSION

CASE NO. PU-20___

PREPARED DIRECT TESTIMONY OF

ANN E. BULKLEY

Q1. Please state your name and business address.

A1. My name is Ann E. Bulkley. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

Q2. What is your position with Concentric Energy Advisors, Inc. ("Concentric")?

A2. I am employed by Concentric as a Senior Vice President.

Q3. On whose behalf are you submitting this Direct Testimony?

A3. I am submitting this Direct Testimony before the North Dakota Public Service Commission ("Commission") on behalf of Montana-Dakota Utilities Co. My testimony addresses the regulated natural gas operations of Montana-Dakota Utilities Co. within North Dakota ("Montana-Dakota" or the "Company").

Q4. Please describe your education and experience.

A4. I hold a Bachelor's degree in Economics and Finance from Simmons College and a Master's degree in Economics from Boston University, with more than 20 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 primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking

purposes. I have included my resume and a summary of testimony that I have filed in other proceedings as Exhibit No.___(AEB-2), Schedule 1.

Q5. Please describe Concentric's activities in energy and utility engagements.

A5. Concentric provides financial and economic advisory services to many and various energy and utility clients across North America. Our regulatory, economic, and market analysis services include utility ratemaking and regulatory advisory services; energy market assessments; market entry and exit analysis; corporate and business unit strategy development; demand forecasting; resource planning; and energy contract negotiations. Our financial advisory activities include buy and sell-side merger, acquisition, and divestiture assignments; due diligence and valuation assignments; project and corporate finance services; and transaction support services. In addition, we provide litigation support services on a wide range of financial and economic issues on behalf of clients throughout North America.

Q6. Have you testified before any regulatory authorities?

A6. Yes. A list of proceedings in which I have provided testimony is provided in Exhibit No.___(AEB-2), Schedule 1.

I. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY

Q7. Please describe the purpose of your Direct Testimony.

A7. The purpose of my Direct Testimony is to present evidence and provide a recommendation regarding the appropriate Return on Equity ("ROE") [1] for

[1] Throughout my direct testimony, I interchangeably use the terms "ROE" and "cost of equity".

Montana-Dakota's natural gas operations in North Dakota to be used for ratemaking purposes. I also address the appropriateness of the Company's proposed capital structure. My analyses and recommendations are supported by the data presented in Exhibit No.___(AEB-2), Schedules 2 through 10, which were prepared by me or under my direction.

Q8. Please provide a brief overview of the analyses that led to your ROE recommendation.

A8. As discussed in more detail in Section VI, I applied the Constant Growth form of a Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), a Bond Yield Plus Risk Premium analysis, and an Expected Earnings analysis. My recommendation also takes into consideration: (1) the Company's small size; (2) flotation costs; (3) the Company's capital expenditure requirements; (4) the regulatory environment in which the Company operates; and (5) the Company's adjustment mechanisms. Finally, I considered the Company's proposed capital structure as compared to the capital structures of the proxy companies.[2] While I did not make any specific adjustments to my ROE estimates for any of these factors, I did take them into consideration in aggregate when determining where the Company's ROE falls within the range of analytical results.

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

Q9. How is the remainder of your Direct Testimony organized?

A9. Section II provides a summary of my analyses and conclusions. Section III reviews the regulatory guidelines pertinent to the development of the cost of capital. Section IV discusses current and projected capital market conditions and the effect of those conditions on Montana-Dakota's cost of equity in North Dakota. Section V explains my selection of a proxy group of natural gas utilities. Section VI describes my analyses and the analytical basis for the recommendation of the appropriate ROE for Montana-Dakota. Section VII provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for the Company in this case. Section VIII assesses the Company's proposed capital structure as compared to the proxy group. Section IX presents my conclusions and recommendations for the market cost of equity.

II. SUMMARY OF ANALYSIS AND CONCLUSIONS

Q10. Please summarize the key factors considered in your analyses and upon which you base your recommended ROE.

A10. In developing my recommended ROE for Montana-Dakota, I considered the following:

- The *Hope* and *Bluefield* decisions[3] 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.

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

- The effect of current and projected capital market conditions on investors' return requirements.
- The results of several analytical approaches that provide estimates of the Company's cost of equity.
- The Company's regulatory, business, and financial risks relative to the proxy group of comparable companies, and the implications of those risks.

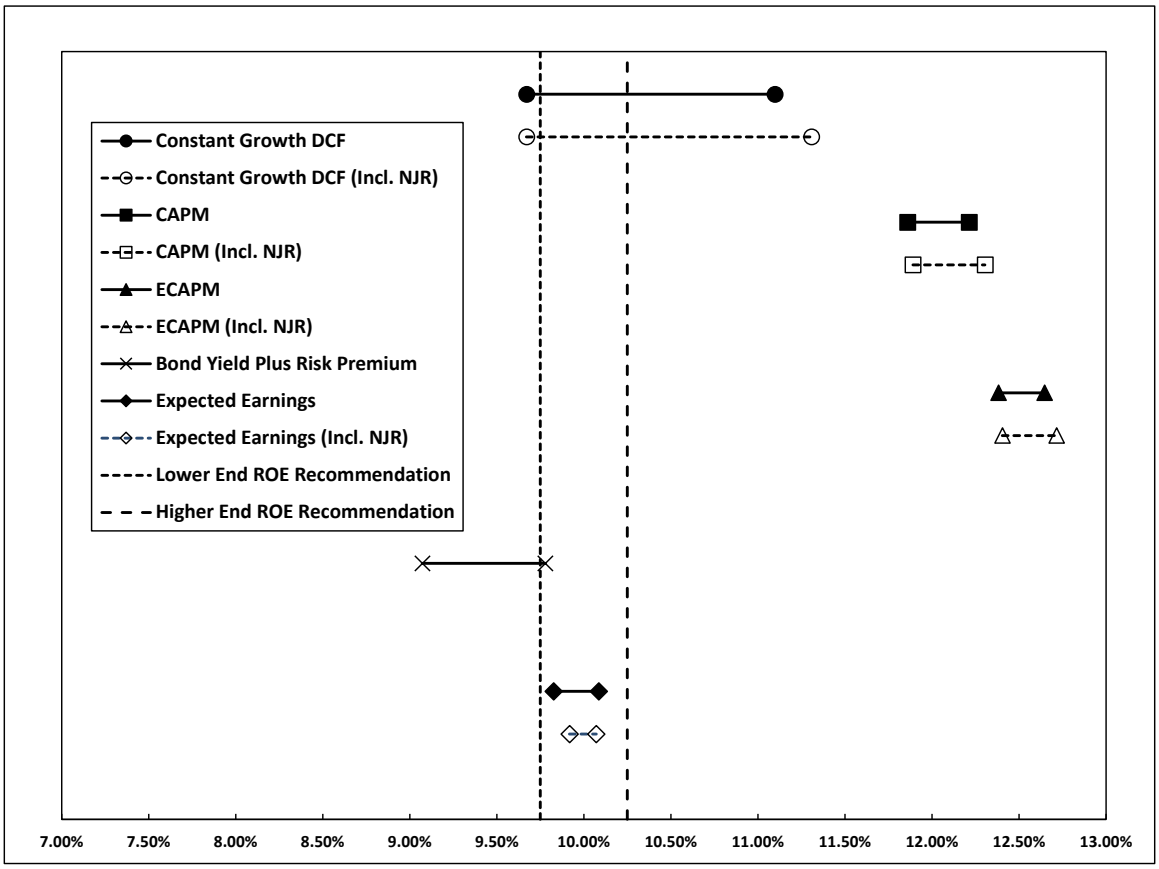
Q11. Please explain how you considered those factors.

A11. I relied on several analytical approaches to estimate Montana-Dakota's cost of equity based on a proxy group of publicly traded companies. As shown in Figure 1, those ROE estimation models produce a wide range of results. My conclusion about where within that range of results Montana-Dakota's cost of equity falls is based on the Company's business and financial risk relative to the proxy group. Although the companies in my proxy group are generally comparable to Montana-Dakota, each company is unique, and no two companies have the exact business and financial risk profiles. Accordingly, I selected a proxy group with similar, but not the same risk profiles; and I adjusted the results of my analysis either upwards or downwards within the reasonable range of results to account for any residual differences in risk.

Q12. Please summarize the results of the ROE estimation models that you considered to establish the range of ROEs for Montana-Dakota.

A12. Figure 1 summarizes the range of results produced by the Constant Growth DCF, CAPM, ECAPM, Bond Yield Plus Risk Premium, and Expected Earnings analyses.

Figure 1: Summary of Cost of Equity Analytical Results [4,5]



As shown in Figure 1 (and in Exhibit No.___(AEB-2), Schedule 2), the range of results produced by the ROE estimation models is wide. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results is wide in order to appropriately consider the factors that have resulted in the diverging range of results.

Based on current market conditions, my ROE recommendation considers the results of a DCF model, forward looking CAPM and ECAPM analyses, a Bond Yield Plus

[4] The analytical results reflect the results of the Constant Growth DCF analysis excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent.

[5] Results displayed are for the proxy group excluding and including NJR.

Risk Premium analysis, and an Expected Earnings analysis. I also consider company-specific risk factors and current and prospective capital market conditions.

Q13. What is your recommended ROE for Montana-Dakota?

A13. Considering the analytical results presented in Figure 1, as well as the level of regulatory, business, and financial risk faced by Montana-Dakota's natural gas operations in North Dakota relative to the proxy group, I believe a range from 9.75 to 10.25 percent is reasonable**.** This recommendation reflects the range of results for the proxy group companies, the relative risk of Montana-Dakota's natural gas operations in North Dakota as compared to the proxy group, and current capital market conditions. Within that range, a return of 10.20 percent is reasonable.

Q14. Please summarize the analysis you conducted in determining that Montana-Dakota's requested capital structure is reasonable and appropriate.

A14. Based on the analysis presented in Section VIII of my testimony, I conclude that Montana-Dakota's proposed 50.306 percent common equity is reasonable. To determine if Montana-Dakota's requested capital structure was reasonable, I reviewed the capital structures of the utility subsidiaries of the proxy companies. As shown in Exhibit No.___(AEB-2), Schedule 10, the results of that analysis demonstrate that the average equity ratios for the proxy group range from 48.52 percent to 63.55 percent, with an average of 55.73 percent. Comparing the proposed equity ratio to the proxy group demonstrates that the Company's requested equity ratio is well within the range of equity ratios for the utility operating subsidiaries of the proxy group companies. Further, the Company's

proposed equity ratio is reasonable considering that federal tax reform legislation has had a negative effect on the cash flows and credit metrics of regulated utilities.

III. REGULATORY GUIDELINES

Q15. Please describe the guiding principles to be used in establishing the cost of capital for a regulated utility.

A15. 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.[6]

Q16. Why is it important for a utility to be allowed the opportunity to earn an ROE that is adequate to attract capital at reasonable terms?

A16. An ROE that is adequate to attract capital at reasonable terms enables the Company to continue to provide safe, reliable natural gas service while maintaining its financial integrity. To the extent the Company is provided the opportunity to earn its market-based cost of capital, neither customers nor shareholders are disadvantaged.

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

Q17. Is a utility's ability to attract capital also affected by the ROEs that are authorized for other utilities?

A17. Yes. Utilities compete directly for capital with other investments of similar risk, which include other natural gas and electric utilities. Therefore, the ROE awarded to a utility sends an important signal to investors regarding whether there is regulatory support for financial integrity, dividends, growth, and 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 of comparable risk, investors have an incentive to direct their capital to those investments. Thus, an authorized ROE significantly below authorized ROEs for other natural gas and electric utilities can inhibit the utility's ability to attract capital for investment in North Dakota.

While Montana-Dakota is committed to investing the required capital to provide safe and reliable service, because Montana-Dakota is a subsidiary of MDU Resources, the Company competes with the other MDU Resources subsidiaries for discretionary investment capital. In determining how to allocate its finite discretionary capital resources, it would be reasonable for MDU Resources to consider the authorized ROE of each of its subsidiaries.

Q18. What are your conclusions regarding regulatory guidelines?

A18. The ratemaking process is premised on the principle that 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.

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

IV. CAPITAL MARKET CONDITIONS

Q19. Why is it important to analyze capital market conditions?

A19. The ROE estimation models rely on market data that are either specific to the proxy group, in the case of the DCF model, or the expectations of market risk, in the case of the CAPM. The results of ROE estimation models can be affected by prevailing market conditions at the time the analysis is performed. While the ROE that is established in a rate proceeding is intended to be forward-looking, the practitioner uses current and projected market data, specifically stock prices, dividends, growth

rates and interest rates in the ROE estimation models to estimate the required return for the subject company.

As discussed in the remainder of this section, current market conditions affect the results of 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 to be determined 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 return during that rate period. Therefore, it is very important to consider projected market data to estimate the return for that forward-looking period.

Q20. What factors are affecting the cost of equity for regulated utilities in the current and prospective capital markets?

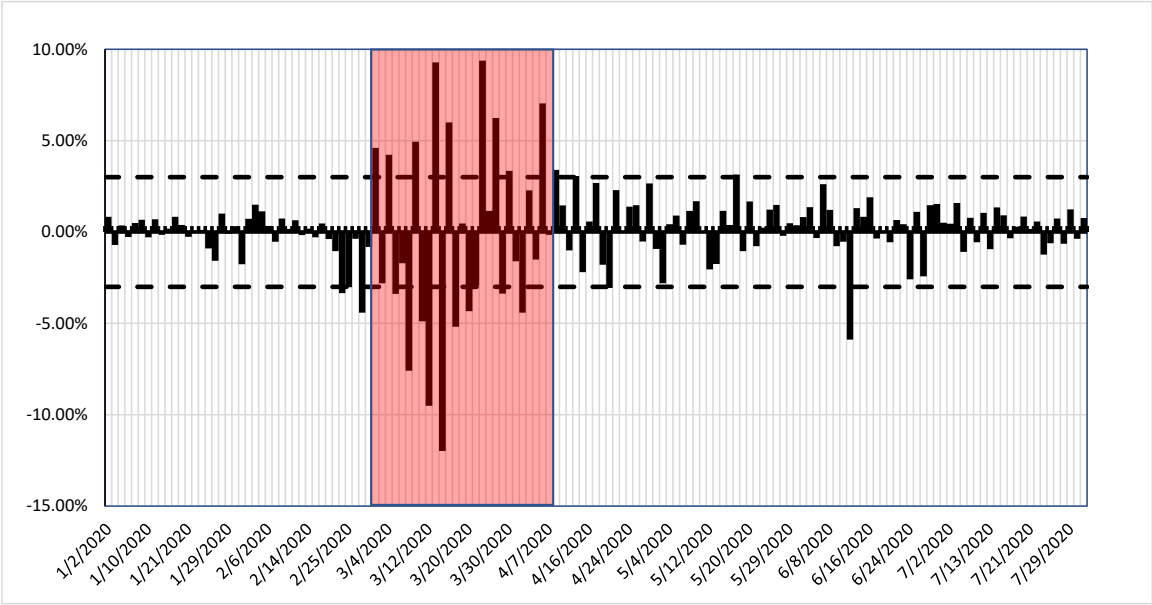
A20. The cost of equity for regulated utility companies is being affected by several factors in the current and prospective capital markets, including: (1) the current market volatility has created a short-term aberration in the market which must be carefully considered when selecting the inputs for the ROE estimation models; 2) utility stock valuations, which are inversely related to dividend yields, are currently unsustainably high given investors' demand for defensive sectors during the short-term market dislocation; and (3) the effect of recent Federal tax reform on utility cash flows. In this section, I discuss each of these factors and how it affects the models used to estimate the cost of equity for regulated utilities.

A. Current Market Conditions

Q21. Please summarize current market conditions.

A21. In 2020, market conditions have been extremely volatile. In January and early February 2020, major market indices were generally increasing, many reaching new threshold levels. By mid-February, as the global health pandemic became more apparent, market conditions became increasingly more volatile. In mid-February, utility stock prices reached an all-time high, followed by a significant decline in the overall market and utility stocks. Market conditions in March 2020 were more volatile than the last half of February. As shown in Figure 2 below, the S&P 500 Index swung more than 3 percent in 16 of the 22 trading days in the month of March.

Figure 2: S&P 500 Index – Daily Price Change – January-July 2020[7]



[7] Source: S&P Global Market Intelligence.

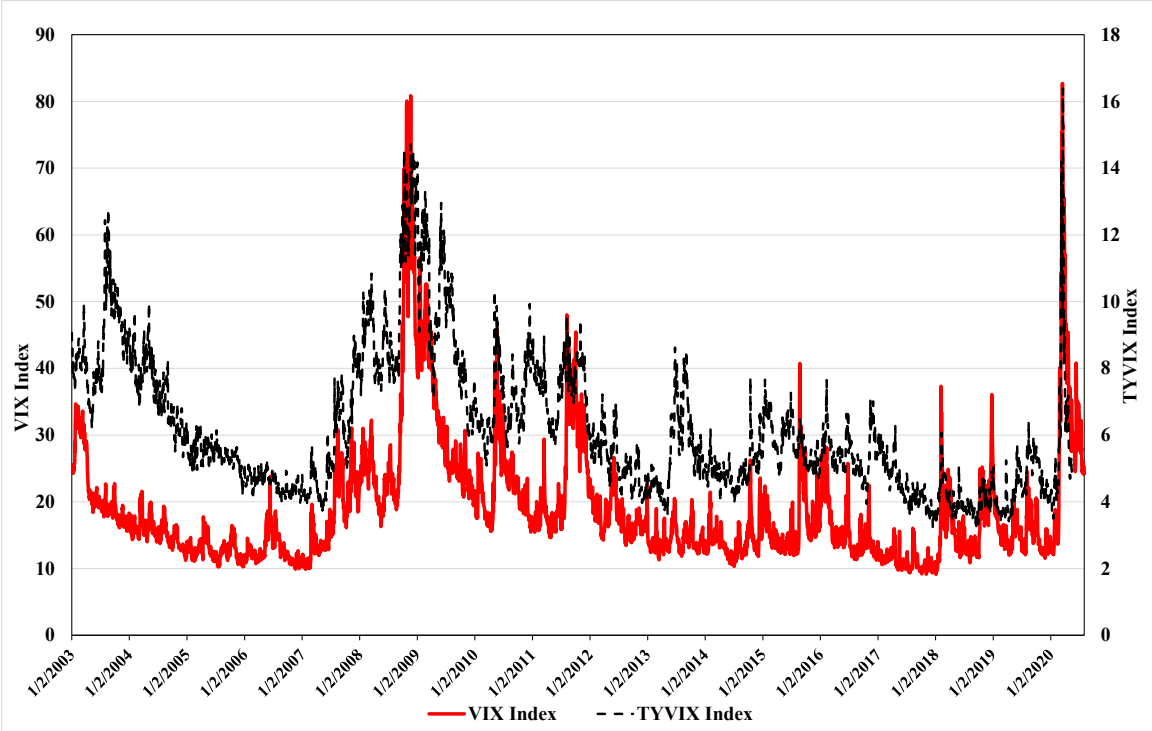
Q22. Have you reviewed any other indicators that measure volatility in the financial markets?

A22. Yes. I reviewed two other measures of volatility in financial markets: 1) the CBOE Volatility Index ("VIX"), and 2) the U.S. Treasury Note Volatility Index ("TYVIX"). The VIX measures investors' expectation of volatility in the S&P 500 over the next 30 days. The TYVIX, also published by CBOE, measures investors' expectation of volatility in the 10-year Treasury Bond over the next 30 days. As shown in Figure 3, the VIX and TYVIX have recently reached levels not seen since the Great Recession of 2008/09. For example, the VIX was 82.69 on March 16, 2020. The VIX has not reached 80.00 since November of 2008; however, it is important to note that the highest level reached during the Great Recession of 2008/09 was 80.86. Similarly, the TYVIX was 16.39 on March 19, 2020. Since at least January 2003, the TYVIX has never exceeded 15.00 including during the Great Recession of 2008/09. While the VIX and the TYVIX have declined since the March peaks, in response to the efforts of the Federal Reserve, these indicators show that COVID-19 has caused an increase in the level of uncertainty and volatility in the market even greater than during the Great Recession of 2008/09.

Furthermore, as shown in Figure 3, while the VIX has declined between April and July, this measure of volatility still remains well above levels seen prior to COVID-19 in January and February 2020. It is important to view the declines in the VIX in the context of the unprecedented response by the Federal Reserve and Congress. As discussed in more detail below, the Federal Reserve's corporate bond buying programs are providing liquidity to bond markets and therefore reducing some of

the uncertainty that was driving the volatility seen in March. However, there is still much uncertainty regarding the near-term effect of COVID-19 on the economy and the financial markets, which is why the VIX is still above its long-term average.

Figure 3: CBOE VIX and TYVIX – January 2003 to July 2020[8]



Q23. Have rating agencies commented on the effects of current market conditions on regulated utilities?

A23. Yes. Standard & Poor's ("S&P") recently downgraded the outlook on the entire North American utilities sector indicating that 25 percent of the industry was previously on a negative outlook or CreditWatch with negative implications and that S&P expected that COVID-19 would create incremental pressure and that a recession would lead to an increasing number of downgrades and negative

[8] Source: Bloomberg Professional. The CBOE did not renew the contract for the TYVIX; therefore, the data for this index is not available after May 15, 2020.

outlooks.[9] In May, S&P also noted that many utilities already faced ratings pressure due to several factors including the adverse effects of tax reform of 2019 and historically high capital spending. S&P noted that, as a result of these types of factors, there is an unusually high number of negative outlooks for utilities.[10]

Q24. What steps have the Fed and Congress taken to stabilize financial markets and support the economy?

A24. In response to effects of COVID-19, the Federal Reserve met on March 15, 2020 and acknowledged that the spread of COVID-19 posed increased risks to economic activity in the U.S. In response, the Federal Reserve reduced the federal funds rate by 100 basis points, resulting in a target range of 0.00 percent to 0.25 percent.[11] This was the second unscheduled meeting in March 2020, with the first occurring on March 3rd, when the Federal Reserve reduced the federal funds rate by 50 basis points. In addition to the reduction in the federal funds rate, the Federal Reserve also announced plans to increase its holdings of both Treasury and mortgage-backed securities.[12] On March 23, 2020, the Federal Reserve began expansive programs to support credit to large employers; the Primary Market Corporate Credit Facility ("PMCCF") to provide liquidity for new issuances of corporate bonds, and the Secondary Market Corporate Credit Facility ("SMCCF") to provide liquidity for outstanding corporate debt issuances. These programs initially targeted

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

10 Standard & Poor's Ratings Direct: North American Regulated Utilities Face Tough Financial Policy tradeoffs To Avoid Ratings Pressure Amid The COVID-19 Pandemic, May 11, 2020, p. 3.

11 FOMC, Federal Reserve Board Press Release, March 15, 2020, at 1.

12 *Id.,* at 2.

investment grade corporations, but in April 2020 were expanded to include corporations that were rated investment grade as of March 22, 2020. The PMCF and SCCF programs were initially funded at $75 billion, but the combined size of these programs, including the addition of below investment grade corporate debt is proposed to be up to $750 billion.[13] Further, the Federal Reserve supported the flow of credit to consumers and businesses through the Term Asset-Backed Securities Loan Facility ("TALF").[14]

In addition to the Federal Reserve, the U.S. Congress also passed fiscal stimulus programs. On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security ("CARES") Act was signed into law. The CARES Act is a large fiscal stimulus package aimed at mitigating the economic effects of the coronavirus. While these expansive programs have provided for greater price stability, as shown in Figure 3, the VIX remains well above long-term historical normal levels.

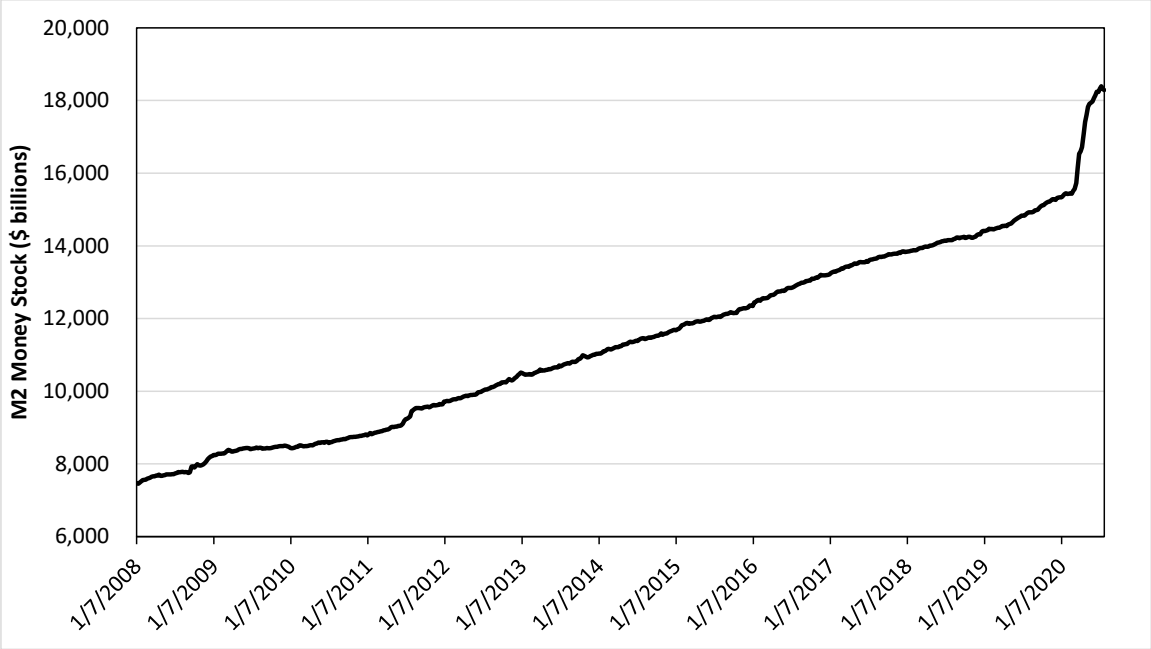
Q25. How do the Federal Reserve's recently announced programs affect the economy and financial markets?

A25. The programs allow the Federal Reserve to purchase, from banks, government bonds and corporate bonds. The banks then receive cash from the Federal Reserve, which results in an expansion of the money supply. The increase in the money supply keeps interest rates low and increases the ability of banks to lend to consumers and businesses. This is very important given current market

[13] FOMC Term Sheet, Primary and Secondary Corporate Credit Facilities, April 9, 2020.
[14] Federal Reserve Board Press Release, "Federal Reserve announces extensive new measures to support the economy", March 23, 2020.

circumstances because it allows companies to continue to get access to the liquidity needed to offset the negative effects of COVID-19 on business operations. As shown in Figure 4 below, the programs enacted by the Federal Reserve have resulted in an unprecedented expansion of the money supply, as measured by M2[15], in recent months—much greater than the increase seen following the Federal Reserve's response to the Great Recession of 2008/2009.

Figure 4: M2 Money Stock – January 2008 – July 27, 2020[16]



Q26. How has the market responded to the unprecedented intervention by the Federal Reserve?

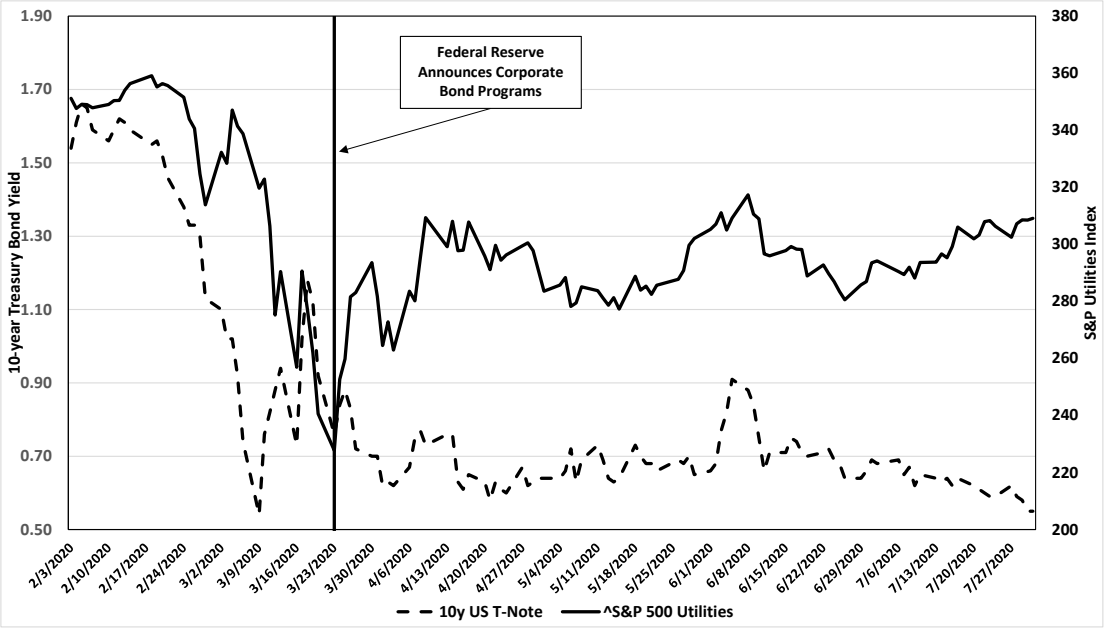
A26. The uncertainty surrounding the spread of COVID-19 resulted in a flight to quality, as investors purchased safer assets such as U.S. Treasuries due to increased fears

[15] M2 is defined by the Federal Reserve as follows: M2 includes a broader set of financial assets held principally by households. M2 consists of M1 plus: (1) savings deposits (which include money market deposit accounts, or MMDAs); (2) small-denomination time deposits (time deposits in amounts of less than $100,000); and (3) balances in retail money market mutual funds (MMMFs).

[16] Board of Governors of the Federal Reserve System (US), M2 Money Stock [M2], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/M2, August 10, 2020.

of a recession. This has been increasingly evident over the past few months as investors responded to news of the number of COVID-19 cases outside of China and the economic effects of the policies enacted to contain COVID-19. However, as discussed above, in late March, the Federal Reserve began expansive programs with the purpose of maintaining access to capital markets for corporate borrowers. These unprecedented programs resulted in lower borrowing costs for corporate firms and thus continued access to the capital needed to offset the economic effects of COVID-19. As a result, interest rates have remained low and stability has been restored in the corporate bond market. For investors, this led to allocating more funds to equities. As shown in Figure 5, while the yield on the 10-year Treasury Bond has remained relatively stable and in the range of 0.55 percent to 0.91 percent between March 23, 2019 and July 31, 2019, the S&P Utilities Index increased drastically following the Federal Reserve's announcement on March 23, 2020. Therefore, the polices of the Federal Reserve, while resulting in stability in the bond markets, have resulted in inflated equity prices as investors search for returns in the current low interest rate environment.

Figure 5: 10-year U.S. Treasury Bond Yield and S&P Utilities Index



Q27. What are your conclusions regarding the recent market volatility and its effect on the cost of equity for Montana-Dakota?

A27. Given the uncertainty and volatility that has characterized capital markets in 2020, it is reasonable that equity investors would now require a higher return on equity to compensate them for the additional risk associated with owning common stock under these market conditions. Therefore, ROE estimation models that rely on recent market data must be interpreted with caution to ensure the data is reflective of market conditions over the near term. For example, the Constant Growth DCF model relies on the average share prices for the proxy companies, which have been extremely volatile in the last several months; those prices are likely currently influenced by the policies of the Federal Reserve and are not likely representative of what should be expected during the period that Montana-Dakota's rates will be in effect. This highlights two key factors that must be considered when determining the ROE for Montana-Dakota: (1) current and prospective market conditions should

be considered when determining where within the range of results Montana-Dakota's ROE should be set, and (2) where possible, in each of the models, it is necessary to consider projected market data which reflect economists' expectations for the market conditions that will prevail during the period that Montana-Dakota's rates will be in effect.

B. The Effect of Market Conditions on Valuations

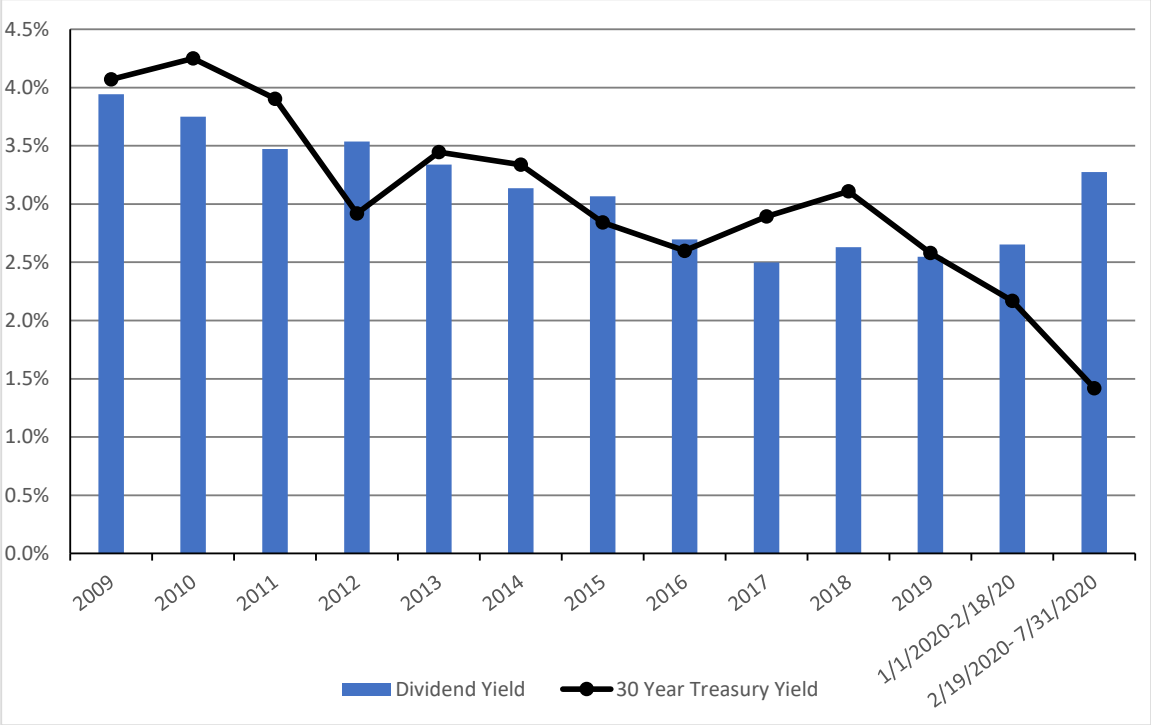
Q28. Please provide a brief summary of how the Federal Reserve's monetary policy affected capital markets following the Great Recession of 2008/09.

A28. Extraordinary and persistent federal intervention in capital markets artificially lowered government bond yields after the Great Recession of 2008/09, as the Federal Reserve Open Market Committee ("FOMC") used monetary policy (both reductions in short-term interest rates and purchases of Treasury bonds and mortgage-backed securities) to stimulate the U.S. economy. As a result of very low or zero returns on short-term government bonds, yield-seeking investors were forced into higher risk instruments, bidding up prices and reducing yields on those investments. As investors moved along the risk spectrum in search of yields meeting their return requirements, demand increased for dividend-paying equities, such as utility stocks. As a result, valuations of utilities were at historically high levels just prior to the spread of COVID-19 to the U.S.

Q29. How has the economic impact of COVID-19 affected the valuations and dividend yields of utility shares?

A29. The Federal Reserve's accommodative monetary policy following the Great Recession of 2008/09 caused investors to seek alternatives to the historically low interest rates available on Treasury bonds, which resulted in the share prices for many common stocks, especially dividend-paying stocks such as utilities, being driven higher. Consequently, dividend yields (which are computed by dividing the dividend payment by the stock price) decreased to levels well below the historical average. As shown in Figure 6, over the period from 2009 through February 18, 2020 (i.e., the peak of the market prior to the recent decline resulting from the effects of COVID-19), Treasury bond yields and natural gas utility dividend yields had declined. While investors have responded to the economic effects of COVID-19, resulting heightened volatility and a recent decline in the market, it is important to highlight the relative performance of natural gas utilities during this time period. As shown in Figure 6, while the stock prices of natural gas utilities have declined, which has resulted in an increase in dividend yields, the average dividend yield for natural gas utilities over the period of February 19, 2020 through July 31, 2020 was 3.28 percent, which is still unreasonably low when compared to historical dividend yields.

Figure 6: Dividend Yields for Natural Gas Utility Stocks[17]



Q30. Have equity analysts commented on the valuations of utility stocks?

A30. Yes, they have. Despite the correction that occurred in March 2020, several equity analysts continue to believe that utility stock valuations are very high relative to historical levels. In a recent electric utilities industry report**,** Value Line noted the following:

> Utilities are usually seen as a safe haven when the markets are in turmoil. Most of these stocks have declined far less than the broader market averages, but have been much more volatile than their high Price Stability Indexes suggest. Even a Safety rank of 1 (Highest) does not necessarily mean that a sharp decline cannot occur. Additionally, there has been a wide variance in the performance of these equities. The stock of Xcel Energy has advanced modestly in price this year, but the stock of Edison International has fallen more than 20% in price. The average dividend yield of stocks in this industry has risen to 3.55% after having fallen below 3% before the market tumbled in late February. Because the broader market has declined far more than the Electric Utility Industry, the median yield

[17] Source: Bloomberg Professional. Figure 6 includes 2020 data through July 31, 2020.

> of dividend-paying stocks in The Value Line Investment Survey is not considerably lower than the median of the equities in this group.[18]

While the reference above is to the electric utilities segment, the stock price behavior is consistent with what has been experienced by natural gas utilities. This is further supported in Fidelity's 2020 Q3 sector scorecard, wherein Fidelity expects that utilities will underperform relative to the broader market, notes the sector's high valuations, and thus classifies the utility sector as underweight.[19] Similarly, Charles Schwab, which recently downgraded the utility sector to underperform, noted that:

> However, amid the drop in stocks in February and March, the historically low-equity-beta Utilities sector simply didn't play its traditional relative safe-haven role. The sharp drop in interest rates would normally be expected to provide relative support to this sector, which relies on high levels of debt and tends to pay relatively high dividends—often an attraction for investors when yields on fixed income investments are low. However, there were unique circumstances that outweighed these historical relationships.
>
> For one thing, because some investors had already been reaching for yield before the crisis began, the high-dividend-paying Utilities sector had been bid up to record-high valuation levels. Even underperformance year-to-date hasn't fully reversed those relatively high valuations, so we're not confident the sector will return to its defensive roots if markets sell off again.
>
> Additionally, with improving prospects for economic growth, longer-term yields may nudge higher, which further reduces the sector's attractiveness. The earnings outlook has remained stable (when not including a major divestiture in the sector), but the relative fundamentals score took a step back recently as other beaten down sectors have seen some recovery in earnings expectations.

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[18] Value Line Investment Survey, Electric Utility (West) Industry, April 24, 2020, at 2214.

[19] Chisholm, Denise. "Q3 2020 Sector Scorecard: Technology leads Fidelity's latest sector scorecard," Fidelity, July 27, 2020.

> And the sector's short-term relative performance has lagged, despite a recent increase in volatility and drop in rates amid a rise in COVID-19 cases. Bottom line, we are maintaining an underperform rating on Utilities.[20]

If economic conditions improve and interest rates increase, bonds become a substitute for utility stocks, which results in an increase in dividend yields. This change in market conditions, which is expected over the long term, implies that the ROE calculated using historical market data in the DCF model may understate the forward-looking cost of equity.

Q31. What is the effect of high valuations of utility stocks on the DCF model?

A31. High valuations have the effect of depressing the dividend yields, which results in overall lower estimates of the cost of equity from the DCF model. Currently, the relatively high valuations and relatively low dividend yields imply that the ROE calculated using historical market data in the DCF model may understate the forward-looking cost of equity.

Q32. How do the valuations of public utilities compare to the historical average?

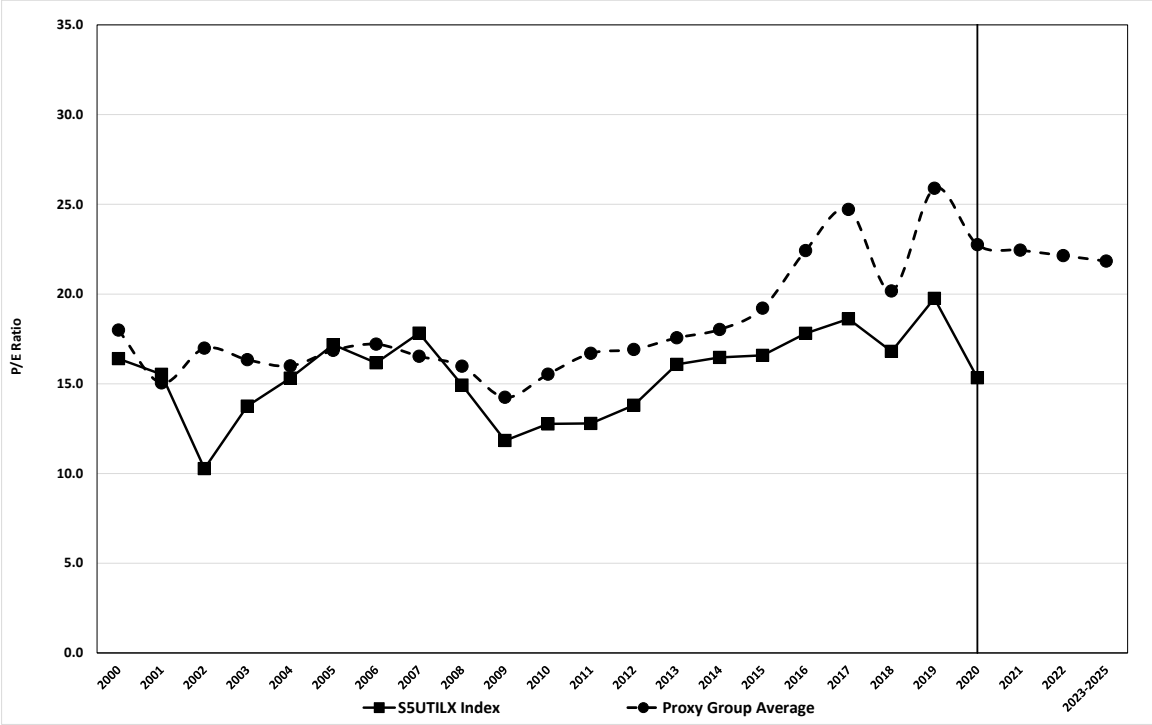
A32. Figure 7 summarizes the average historical and projected Price-to-Earnings ("P/E") ratios for the proxy companies calculated using data from Bloomberg Professional and Value Line. As shown in Figure 7, the P/E ratios for the proxy companies have declined in 2020 as investors have rotated from utilities to Treasury Bonds due to the economic effects of COVID-19. Nonetheless, as of July 31, 2020, the P/E ratios are still well above historical averages.

[20] Charles Schwab, Utilities Sector Rating: Underperform, July 16, 2020.

As shown in Figure 7, Value Line is projecting that P/E ratios will continue to decline through 2023. All else equal, if P/E ratios for the proxy companies decline further, as Value Line projects, the ROE results from the DCF model would be higher.

Therefore, the DCF model using historical market data is likely understating the forward-looking cost of equity for the proxy group companies.

Figure 7: Average Historical Proxy Group P/E Ratios[21]



Q33. Have you reviewed any other market indicators that compare the current valuation of utilities to the historical average?

A33. Yes, I have. To further assess how the currently low interest rate environment has affected the valuations of the companies in my proxy group, I reviewed the

[21] Bloomberg Professional historical data through July 31, 2020; Value Line Investment Survey Reports dated July 31, 2020.

price/earnings to growth ("PEG") ratio for the S&P Utilities Index. The PEG ratio is commonly used by investors to determine if a company is considered over- or under-valued. The ratio compares the P/E ratio of a company to the expected growth rate of future earnings. This allows investors to compare companies with similar P/E ratios but different earnings growth projections. If two companies have a P/E ratio of 20, but Company A is growing at a rate of 6 percent and Company B is growing at a rate of 15 percent, then on a relative valuation basis Company B is the better investment.

As shown in a report published by Yardeni Research, Inc., the PEG ratio for the S&P Utilities Index is significantly higher than it has historically been because of the accommodative monetary policy pursued by the Federal Reserve following the Great Recession of 2008/09. [22] While the PEG ratio has slightly declined recently as investors have rotated out of defensive sectors and into Treasury Bonds due to the short-term economic effect of COVID-19, the PEG ratio for the S&P Utilities Index is still above the historical average. In general, stocks with lower long-term PEG ratios are considered better values. As the PEG ratio increases above the long-term historical average, as has been the case with the S&P Utilities Index, then the stocks are considered relatively over-valued unless the growth rate increases to support the higher valuation. As of July 30, 2020, the PEG ratio for the S&P Utilities Index is close to 3.9, which indicates that many of the stocks contained in the index are currently trading at levels well above the historical average. This

[22] Yardeni Research, Inc. "S&P 500 Industry Briefing: Utilities." June 4, 2020, p. 5.

analysis supports the P/E ratio projections produced by Value Line, which, as noted above, show a decline over the near term.

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

Q34. Are there other factors that should be considered in determining the cost of equity for Montana-Dakota?

A34. Yes, there are. The effect of the Tax Cuts and Jobs Act of 2017 ("TCJA") should also be considered in the determination of the cost of equity. It is also relevant to setting the equity ratio in the capital structure, which I address in Section VIII of my testimony. The credit rating agencies have commented on the effect of the TCJA on regulated utilities. In summary, the TCJA has reduced utility revenues due to the lower federal income taxes, the end of bonus depreciation, and the requirement to return excess Accumulated Deferred Income Taxes ("ADIT"). This change in revenue reduces Funds From Operations ("FFO") metrics across the sector and, absent regulatory mitigation strategies, has led to weaker credit metrics and negative ratings actions for some utilities.[23]

Q35. Have credit or equity analysts commented on the effect of the TCJA on utilities?

A35. Yes, they have. Each of the credit rating agencies has indicated that the TCJA is having an overall negative credit impact on regulated operating companies of

[23] FitchRatings, Special Report, What Investors Want to Know, "Tax Reform Impact on the U.S. Utilities, Power & Gas Sector," January 24, 2018.

utilities and their holding companies due to the reduction in cash flow that results from the change in the federal tax rate and the loss of bonus depreciation. [24,25]

Q36. How have rating agencies responded to the increased risk for utilities resulting from the TCJA?

A36. As noted previously, S&P recognizes the financial risk and notes that the percentage of the sector that have negative credit outlooks is very high. Similar to S&P's view, Moody's downgraded the outlook for the entire regulated utility industry from Stable to Negative for the first time ever, citing ongoing concerns about the negative effect of the TCJA on cash flows of regulated utilities. Since mid-2018, Moody's has downgraded the credit ratings of several utilities based in part on the effects of tax reform on financial metrics. As shown in Figure 8, the downgrades have continued in recent months.

[24] Standard & Poor's Ratings, "Industry Top Trends 2019, North America Regulated Utilities", November 8, 2018.

[25] FitchRatings, Special Report, What Investors Want to Know, "Tax Reform Impact on the U.S. Utilities, Power & Gas Sector", January 24, 2018.

Figure 8: Credit Rating Downgrades Resulting from TCJA

Utility	Rating Agency	Credit Rating before TCJA	Credit Rating after TCJA	Downgrade Date
Electric Transmission Texas	Moody's	Baa1	Baa2	3/24/2020
New Jersey Natural Gas Company	Moody's	Aa3	A1	3/18/2020
Consolidated Edison Company of New York	Moody's	A3	Baa1	3/17/2020
Consolidated Edison, Inc.	Moody's	Baa1	Baa2	3/17/2020
Washington Gas Light Company	Moody's	A2	A3	1/30/2020
Public Service Co. of North Carolina, Inc.	Moody's	A3	Baa1	1/30/2020
Wisconsin Power and Light Company	Moody's	A2	A3	12/11/2019
Wisconsin Gas LLC	Moody's	A2	A3	11/20/2019
Vectren Utility Holdings	Moody's	A2	A3	10/25/2019
Southern Indiana Gas & Electric Company	Moody's	A2	A3	10/25/2019
Indiana Gas Company	Moody's	A2	A3	10/25/2019
El Paso Electric Company	Moody's	Baa1	Baa2	9/17/2019
Questar Gas Company	Moody's	A2	A3	8/15/2019
DTE Gas Company	Moody's	A2	A3	7/22/2019
South Jersey Gas Company	Moody's	A2	A3	7/17/2019
Central Hudson Gas & Electric	Moody's	A2	A3	7/12/2019
Oklahoma Gas & Electric Company	Moody's	A2	A3	5/31/2019
American Water Works	Moody's	A3	Baa1	4/1/2019
Niagara Mohawk Power Corporation	Moody's	A2	A3	3/29/2019
KeySpan Gas East Corporation (KEDLI)	Moody's	A2	A3	3/29/2019
Xcel Energy	Moody's	A3	Baa1	3/28/2019
ALLETE, Inc.	Moody's	A3	Baa1	3/26/2019
Brooklyn Union Gas Company (KEDNY)	Moody's	A2	A3	2/22/2019
Avista Corp.	Moody's	Baa1	Baa2	12/30/2018
Consolidated Edison Company of New York	Moody's	A2	A3	10/30/2018
Consolidated Edison, Inc.	Moody's	A3	Baa1	10/30/2018
Orange and Rockland Utilities	Moody's	A3	Baa1	10/30/2018
Southwestern Public Service Company	Moody's	Baa1	Baa2	10/19/2018
Dominion Energy Gas Holdings	Moody's	A2	A3	9/20/2018
Piedmont Natural Gas Company, Inc.	Moody's	A2	A3	8/1/2018
WEC Energy Group, Inc.	Moody's	A3	Baa1	7/12/2018
Wisconsin Energy Capital	Moody's	A3	Baa1	7/12/2018
Integrys Holdings Inc.	Moody's	A3	Baa1	7/12/2018
OGE Energy Corp.	Moody's	A3	Baa1	7/5/2018
Oklahoma Gas & Electric Company	Moody's	A1	A2	7/5/2018

Q37. Have other utility commissions recognized that the TCJA has had an adverse impact on utility cash flows?

A37. Yes, they have. The Oregon Public Utilities Commission ("Oregon PUC")[26], the Wyoming Public Service Commission ("Wyoming PSC")[27] and the Utah Public Service Commission ("Utah PSC")[28] have acknowledged the negative effect of the TCJA on the cash flow of utilities.

Q38. Have state regulatory commissions considered market events and the utility's ability to attract capital in determining the equity return?

A38. Yes, they have. In a recent rate case for Consumers Energy Company in Michigan, Case No. U-18322, the Michigan Public Service Commission ("Michigan PSC") Staff recommended a 9.80 percent ROE based on the results of the DCF, CAPM, and Risk Premium approaches, which was supported by the Administrative Law Judge ("ALJ").[29] However, in its Order issued on March 29, 2018, the Michigan PSC partly disagreed with the ALJ and Staff regarding expected market conditions and authorized a 10.00 percent ROE for Consumers Energy Company. The Michigan PSC noted that:

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[26] 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).

[27] *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).

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

[29] Michigan Public Service Commission Order, Cause No. U-18322, Consumers Energy Company, March 29, 2018, at 37.

> [i]n setting the ROE at 10.00%, the Commission believes there is an opportunity for the company to earn a fair return during this period of atypical market conditions. This decision also reinforces the Commission's belief that customers do not benefit from a lower ROE if it means the utility has difficulty accessing capital at attractive terms and in a timely manner. The fact that other utilities have been able to access capital despite lower ROEs, as argued by many intervenors, is also a relevant consideration. It is also important to consider how extreme market reactions to singular events, as have occurred in the recent past, may impact how easily capital will be able to be accessed during the future test period should an unforeseen market shock occur. The Commission will continue to monitor a variety of market factors in future rate cases to gauge whether volatility and uncertainty continue to be prevalent issues that merit more consideration in setting the ROE.[30]

The Michigan PSC references "singular 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 a) that the TCJA has had a negative effect on the cash flows of utilities and b) the effects of the increase volatility associated with the uncertainty surrounding the economic effects of COVID-19.

Q39. What conclusions do you draw from your analysis of capital market conditions?

A39. The important conclusions regarding capital market conditions are:

- The assumptions used in the ROE estimation models have been affected by recent, historically atypical market conditions.
- Recent market conditions reflect short-term exogenous shocks that are not expected to persist over the long-term. These recent market conditions do not reflect the market conditions that are expected to be present when the rates for Montana-Dakota will be in effect.
- Recent market volatility demonstrates significant risk to equity, which increases the return investors expect in order to take on that incremental

[30] *Id.,* at 43.

risk. As a result, it is critical to consider the results of a variety of ROE estimation models, and to consider the results of the models using forward-looking assumptions to estimate the cost of equity for the proposed rate period.

- Credit rating agencies have demonstrated concern about the cash flow metrics of utilities, related to the negative effects of both current market conditions and the TCJA, which increases the risk of utilities for investors. Therefore, it is increasingly important to consider a rate of return and capital structure that support the Company's cash flow sufficiently to enable the Company to attract capital at reasonable terms during the period that rates will be in effect.

V. PROXY GROUP SELECTION

Q40. Why have you used a group of proxy companies to estimate the cost of equity for Montana-Dakota?

A40. In this proceeding, we are focused on estimating the cost of equity for a natural gas utility company that is not itself publicly traded. Because the cost of equity is a market-based concept and because Montana-Dakota's operations do not make up the entirety of a publicly traded entity, it is necessary to establish a group of companies that is both publicly traded and comparable to Montana-Dakota in certain fundamental business and financial respects to serve as its "proxy" in the ROE estimation process.

Even if Montana-Dakota 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 substantially comparable

to the Company, and thus provide a reasonable basis to derive and estimate the appropriate ROE for Montana-Dakota.

Q41. Please provide a brief profile of Montana-Dakota.

A41. Montana-Dakota Utilities Co. is a wholly owned subsidiary of MDU Resources. It provides regulated retail natural gas and/or electric service to parts of Montana, North Dakota, South Dakota, and Wyoming. The Company's natural gas distribution operations in North Dakota serve approximately 113,239 residential, commercial and industrial customers.[31] As of December 31, 2019, the Company's net utility natural gas plant in North Dakota was approximately $196.1 million.[32] In addition, the Company had total natural gas sales in North Dakota in 2019 of approximately 27.50 million Dths, made up of 34.5 percent residential, 25.5 percent commercial and industrial, and 40.0 percent transportation.[33] For the Company's parent entity, MDU Resources, North Dakota accounted for 15.00 percent of its total natural gas distribution operating sales revenue in 2019, while Idaho (29.00 percent), Washington (28.00 percent), Montana (9.00 percent), Oregon (8.00 percent), South Dakota (6.00 percent), Minnesota (3.00 percent), and Wyoming (2.00 percent) accounted for the other 85.00 percent of its natural gas distribution operating sales revenue.[34] Montana-Dakota Utilities Co. currently has

[31] Montana-Dakota Utilities, 2019 Annual Report to the North Dakota Public Service Commission, IV. Miscellaneous, Line No. 6.
[32] Montana-Dakota Utilities, 2019 Annual Report to the North Dakota Public Service Commission, I. Intrastate Return on Equity, pp. 2 of 2, Line No. 3.
[33] Data provided by Montana-Dakota Utilities Co.
[34] MDU Resources Group, 2019 SEC Form 10-K, at 13.

an investment-grade long-term rating of A- (Outlook: Negative) from S&P and BBB+ (Outlook: Stable) from Fitch.[35] [36]

Q42. How did you select the companies included in your proxy group?

A42. I began with the group of ten companies that Value Line classifies as Natural Gas Distribution Utilities and applied the following screening criteria to select companies that:

- pay consistent quarterly cash dividends, because companies that do not cannot be analyzed using the Constant Growth DCF model;
- have investment grade long-term issuer ratings from S&P and/or Moody's;
- have positive long-term earnings growth forecasts from at least two utility industry equity analysts;
- derive more than 70.00 percent of their total operating income from regulated operations;
- derive more than 60.00 percent of regulated operating income from gas distribution operations; and
- were not parties to a merger or transformative transaction during the analytical periods relied on.

Q43. What is the composition of your proxy group?

A43. The screening criteria discussed above are shown in Exhibit No.___(AEB-2), Schedule 3 and resulted in a proxy group consisting of the companies shown in Figure 9 below.

[35] S&P Global Market Intelligence, March 30, 2020 report (verified as most recent rating as of Jun 17, 2020**).**

[36] FitchRatings: Rating Action Commentary, Fitch Affirms Ratings of MDU, Montana-Dakota, Cascade and Centennial Energy; Outlooks Stable, January 3, 2020 (verified as most recent rating as of Jun 17, 2020**)**.

Figure 9: Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
South Jersey Industries, Inc.	SJI
Southwest Gas Corporation	SWX
Spire, Inc.	SR

Q44. Did you include New Jersey Resources Corporation (NJR) in your proxy group?

A44. No, I did not. New Jersey Resources Corporation (NJR) does not currently meet the screening criterion of deriving more than 70.00 percent of its total operating income from regulated operations over the three-year period 2017 to 2019. However, I have presented my ROE results including as well as excluding NJR.

VI. COST OF EQUITY ESTIMATION

Q45. Please briefly discuss the ROE in the context of the regulated rate of return (ROR).

A45. 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 market data.

Q46. How is the required ROE determined?

A46. The required ROE is estimated by using one or more analytical techniques that rely on market-based data to quantify investor expectations regarding equity returns, as adjusted for certain incremental costs and risks. Informed judgment is then applied to determine where the company's cost of equity falls within the range of results. The key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' views of the financial markets in general, as well as of the subject company (in the context of the proxy group) in particular.

Q47. What methods did you use to determine Montana-Dakota's required ROE?

A47. I considered the results of the Constant Growth DCF model, the CAPM, the ECAPM, a Bond Yield Plus Risk Premium analysis, and an Expected Earnings analysis. As discussed in more detail below, a reasonable ROE estimate appropriately considers alternative methodologies and the reasonableness of their individual and collective results.

A. Importance of Multiple Analytical Approaches

Q48. Why is it important to use more than one analytical approach?

A48. 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 Murrin[37] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[38] recommend the CAPM, DCF, and Bond Yield Plus Risk Premium approaches**.**

Q49. Do current market conditions increase the importance of using more than one analytical approach?

A49. Yes, they do. Low interest rates and the effects of the investor "flight to quality" can be seen in high utility share valuations, relative to historical levels and relative to the broader market. Higher utility stock valuations produce lower dividend yields and result in lower cost of equity estimates from a DCF analysis. Low interest rates also affect the CAPM in two ways: (1) the risk-free rate is lower, and (2) because the market risk premium is a function of interest rates, (i.e., it is the return on the broad stock market, less the risk-free interest rate), the risk premium should move higher when interest rates are lower. Therefore, it is important to use multiple analytical approaches to moderate the impact that the current low interest rate environment is having on the ROE estimates for the proxy group; and it is

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

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

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

Q50. What are your conclusions about the results of the DCF and CAPM models?

A50. Recent market data that is used as the basis for the assumptions for both models have been affected by market conditions. As a result, relying exclusively on historical assumptions in these models, without considering whether these assumptions are consistent with investors' future expectations, will underestimate 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 yields that are not expected to continue over the period that the new rates will be in effect will underestimate the ROE for Montana-Dakota.

Furthermore, as discussed in Section IV above, Treasury bond yields have experienced unprecedented volatility in recent months due to the economic effects of COVID-19 and the subsequent intervention into the Treasury bond market by the Federal Reserve. Therefore, 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. Projected Treasury Bond yields produce CAPM results that are more reflective of the market conditions that investors expect for the period that the Company's rates will be in effect.

B. Constant Growth DCF Model

Q51. Please describe the DCF approach.

A51. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

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

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

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

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

Q52. What assumptions are required for the Constant Growth DCF model?

A52. The Constant Growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions are violated, considered judgment and/or specific adjustments should be applied to the results.

Q53. What market data did you use to calculate the dividend yield in your Constant Growth DCF model?

A53. The dividend yield in my Constant Growth DCF model is based on the proxy companies' current annualized dividend and average closing stock prices over the 30-, 90-, and 180-trading days ended July 31, 2020.

Q54. Why did you use 30-, 90-, and 180-day averaging periods?

A54. In my Constant Growth DCF model, I use an average of recent trading days to calculate the term P_0 in the DCF model to ensure that the ROE is not skewed by anomalous events that may affect stock prices on any given trading day. The averaging period should also be reasonably representative of expected capital market conditions over the long-term. However, the averaging periods that I use rely on historical data that are not consistent with the forward-looking market expectations. 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.

Q55. Did you make any adjustments to the dividend yield to account for periodic growth in dividends?

A55. Yes, I did. Because utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth rate for purposes of calculating the expected dividend yield component of the DCF model.

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

Q56. Why is it important to select appropriate measures of long-term growth in applying the DCF model?

A56. In its Constant Growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth estimate in perpetuity. To reduce the long-term growth rate to a single measure, one must assume that the payout ratio remains constant and that earnings per share, dividends per share and book value per share all grow at the same constant rate. Over the long run, however, dividend growth can only be sustained by earnings growth. Therefore, it is important to incorporate a variety of sources of long-term earnings growth rates into the Constant Growth DCF model.

Q57. Which sources of long-term earnings growth rates did you use?

A57. 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.

C. <u>Discounted Cash Flow Model Results</u>

Q58. How did you calculate the range of results for the Constant Growth DCF Models?

A58. I calculated the low result for my DCF model 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.

Q59. Have you excluded any of the DCF results for individual companies in your proxy group?

A59. Yes, I have. It is appropriate to exclude Constant Growth DCF results below a specified threshold at which equity investors would consider such returns to provide an insufficient return increment above long-term debt costs. The average credit rating for the companies in my proxy group is between an A- and A.[39] The average yield on Moody's A-rated utility bonds for the 30 trading days ending July 31, 2020, was 2.82 percent.[40] As shown in Exhibit No.___(AEB-2), Schedule 4, I have eliminated Constant Growth DCF results lower than 7.00% because such returns would provide equity investors a risk premium only 418 basis points above A-rated utility bonds.

Q60. What were the results of your Constant Growth DCF analyses?

A60. Figure 10 summarizes the results of my DCF analyses. As shown in Figure 10, the mean DCF results for the proxy group range from 9.78 percent to 10.23 percent.

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[39] The average credit rating is calculated by assigning a numerical scale of 1 to 22 to the range of S&P and Moody's rating tiers. For the proxy group excluding NJR, the average is 16.2, and for the proxy group plus NJR, the average is 16.6. In both cases, these correspond to an average rating of between A- and A on the S&P scale.

[40] Source: Bloomberg Professional.

Figure 10: Constant Growth Discounted Cash Flow Results[41]

	Mean Low	Mean	Mean High
30-Day Average	9.72%	10.23%	11.31%
90-Day Average	9.51%	10.02%	11.11%
180-Day Average	9.78%	9.78%	10.87%

Q61. What are your conclusions about the results of the DCF models?

A61. As discussed previously, one primary assumption of the DCF models is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. To the extent that utility valuations are high and may not be sustainable, it is important to consider the results of the DCF models with caution. As discussed in Section IV above, while dividend yields have increased slightly due to the declines in utility share prices as a result of the economic effects of COVID-19, they are still low historically. This demonstrates that the results of the current DCF models are significantly below more normal market conditions. Therefore, while I have given weight to the results of the Constant Growth DCF model, my recommendation also gives weight to the results of other ROE estimation models.

D. CAPM Analysis

Q62. Please briefly describe the Capital Asset Pricing Model.

A62. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate

[41] *See* Exhibit No.___(AEB-2), Schedule 4. Results displayed in the table above are for the proxy group of six companies, not including NJR. For the proxy group plus NJR, the mean ranges from 10.06 percent to 10.48 percent, and the mean-high ranges from 11.09 percent to 11.52 percent.

investors for the non-diversifiable or "systematic" risk of that security. This second component is the product of the market risk premium and the Beta coefficient, which measures the relative riskiness of the security being evaluated.

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

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

Where:

K_e = the required market ROE;

β = Beta coefficient of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market.

In this specification, the term (rm – rf) represents the market risk premium. According to the theory underlying the CAPM because unsystematic risk can be diversified away, investors should only be concerned with systematic or non-diversifiable risk. Non-diversifiable risk is measured by

Beta, which is defined as:

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

The variance of the market return (i.e., Variance (rm)) is a measure of the uncertainty of the general market, and the covariance between the return on a

specific security and the general market (i.e., Covariance (re, rm)) reflects the extent to which the return on that security will respond to a given change in the general market return. Thus, Beta represents the risk of the security relative to the general market.

Q63. What risk-free rate did you use in your CAPM analysis?

A63. 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, which is 1.34 percent;[42] (2) the average projected 30-year U.S. Treasury bond yield for the fourth quarter of 2020 through the fourth quarter of 2021, which is 1.70 percent;[43] and (3) the average projected 30-year U.S. Treasury bond yield for 2022 through 2026, which is 3.00 percent.[44]

Q64. Would you place more weight on one of these scenarios?

A64. Yes, I would. Based on current market conditions, I place more weight on the results of the projected yields on the 30-year Treasury bonds. As discussed previously, the estimation of the cost of equity in this case should be forward-looking because it is the return that investors would receive over the future rate period. Therefore, the inputs and assumptions used in the CAPM analysis should reflect the expectations of the market at that time. While I have included the results of a CAPM analysis that relies on the current average risk-free rate, this analysis

[42] Bloomberg Professional, as of July 31, 2020.
[43] Blue Chip Financial Forecasts, Vol. 39, No. 8, August 1, 2020, at 2.
[44] Blue Chip Financial Forecasts, Vol. 39, No. 6, June 1, 2020, at 14.

fails to take into consideration the effect of the market's expectations for interest rate increases on the cost of equity.

Q65. What Beta coefficients did you use in your CAPM analysis?

A65. As shown on Exhibit No.___(AEB-2), Schedule 5, 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.

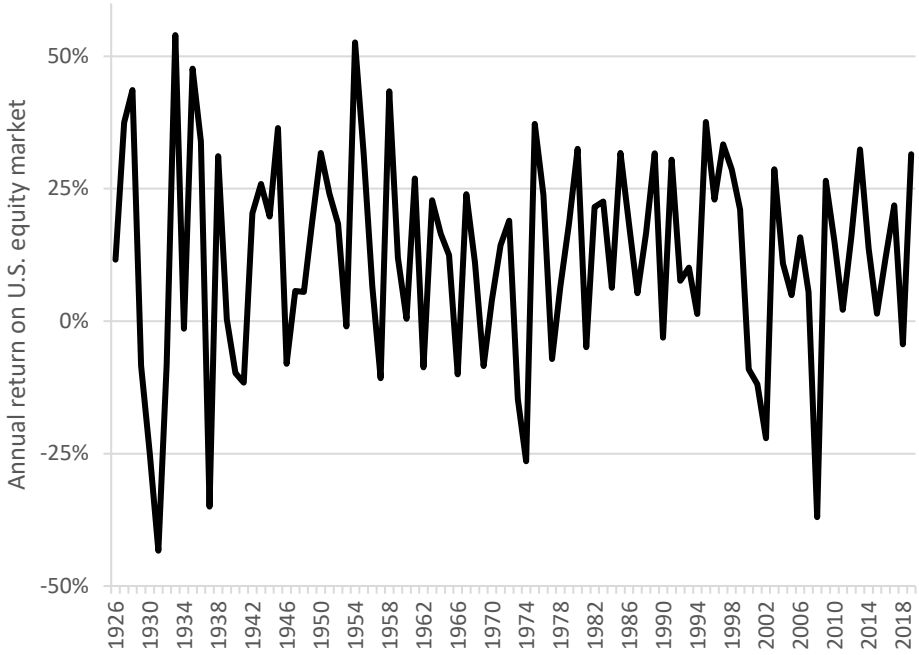
Q66. How did you estimate the market risk premium in the CAPM?

A66. I estimated the market risk premium based on the expected return on the S&P 500 Index less the yield on the 30-year Treasury bond. I calculated the expected return on the S&P 500 Index using publicly available data: S&P's published dividend yield and five-year projected growth rate for the entire S&P 500 Index. As shown in Exhibit No.___(AEB-2), Schedule 5, based on S&P's five-year growth rate for the S&P 500 of 12.12 percent and dividend yield of 1.72 percent, the expected return on the S&P 500 Index is 13.95 percent. As a result, the implied market risk premium over the current 30-day average of the 30-year U.S. Treasury bond yield, and over projected yields on the 30-year U.S. Treasury bond, ranges from 10.95 percent to 12.60 percent.

Q67. How does the current expected market return of 13.95 percent compare to historical observed market returns?

A67. Given the range of annual equity returns that have been observed over the past century (shown in Figure 11), a current expected return of 13.95 is not unreasonable. In 47 out of the past 94 years (or 50 percent of observations), the realized equity return was at least 13.95 or greater**.**

Figure 11: Realized U.S. equity market returns 1926-2019 [45]



Q68. Did you consider another form of the CAPM in your analysis?

A68. Yes. I have also considered the results of an Empirical CAPM ("ECAPM")[46] in estimating the cost of equity for Montana-Dakota. The ECAPM calculates the

[45] Depicts total annual returns on large company stocks, as reported in the 2020 Duff and Phelps SBBI Yearbook**.**

[46] *See e.g.*, Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 189.

product of the adjusted Beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium, without any effect from the Beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

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

Where:

k_e = the required market ROE;

β = Adjusted Beta coefficient of an individual security;

r_f = the risk-free rate of return; and

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

In essence, the Empirical form of the CAPM addresses the tendency of the "traditional" CAPM to underestimate the cost of equity for companies with low Beta coefficients such as regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted Betas; rather, it recognizes the results of academic research indicating that the risk-return relationship is different (in essence, flatter) than estimated by the CAPM, and that the CAPM underestimates the "alpha," or the constant return term.[47]

[47] *Id.,* at 191.

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

Q69. What are the results of your CAPM analyses?

A69. As shown in Figure 12 (see also Exhibit No.___(AEB-2), Schedule 5), my traditional CAPM analysis produces a range of returns from 11.86 percent to 12.21 percent for the proxy group.[48] The ECAPM analysis results range from 12.38 percent to 12.65 percent for the proxy group.[49] Thus, the range established for the proxy group by the traditional CAPM and the ECAPM is 11.86 percent to 12.65 percent with a mean of 12.26 percent**.**

[48] For the proxy group plus NJR, the CAPM range is 11.89 percent to 12.30 percent.
[49] For the proxy group plus NJR, the ECAPM range is 12.40 percent to 12.71 percent.

Figure 12: CAPM Results[50]

	Current Risk-Free Rate (1.34%)	Q4 2020–Q4 2021 Projected Risk-Free Rate (1.70%)	2022-2026 Projected Risk-Free Rate (3.00%)
CAPM			
Value Line Beta	11.95%	12.01%	12.21%
Bloomberg Beta	11.86%	11.92%	12.13%
ECAPM			
Value Line Beta	12.45%	12.49%	12.65%
Bloomberg Beta	12.38%	12.43%	12.59%

E. Bond Yield Plus Risk Premium Analysis

Q70. Please describe the Bond Yield Plus Risk Premium approach.

A70. This approach is based on the fundamental principle that because bondholders have a superior right to be repaid, equity investors bear a residual risk associated with equity ownership and therefore require a premium over the return they would have earned as a bondholder. That is, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a "risk free" class of bonds.

Q71. Are there other considerations that should be addressed in conducting this analysis?

A71. Yes, there are. It is important to recognize both academic literature and market evidence indicating that the equity risk premium (as used in this approach) is inversely related to the level of interest rates. That is, as interest rates increase, the

[50] Results displayed are for the proxy group of six companies, not including NJR.

equity risk premium decreases, and vice versa. Consequently, it is important to 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 conditions. Such an analysis can be developed based on a regression of the risk premium as a function of U.S. Treasury bond yields. In my analysis, I used actual authorized returns for natural gas utility companies and corresponding long-term Treasury yields as the historical measure of the cost of equity to determine the risk premium. If we let authorized ROEs for natural gas utilities serve as the measure of required equity returns and define the yield 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.[51]

Q72. Is the Bond Yield Plus Risk Premium analysis relevant to investors?

A72. Yes, it is. 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 corresponding Treasury yields, it provides relevant information to assess the return expectations of investors.

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[51] *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.

Q73. What did your Bond Yield Plus Risk Premium analysis reveal?

A73. As shown in Figure 13 below, from 1992 through July 2020, there was a strong negative relationship between risk premia and interest rates. To estimate that relationship, I conducted a regression analysis using the following equation:

$$RP = a + b(T) \text{ [6]}$$

Where:

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

a = intercept term

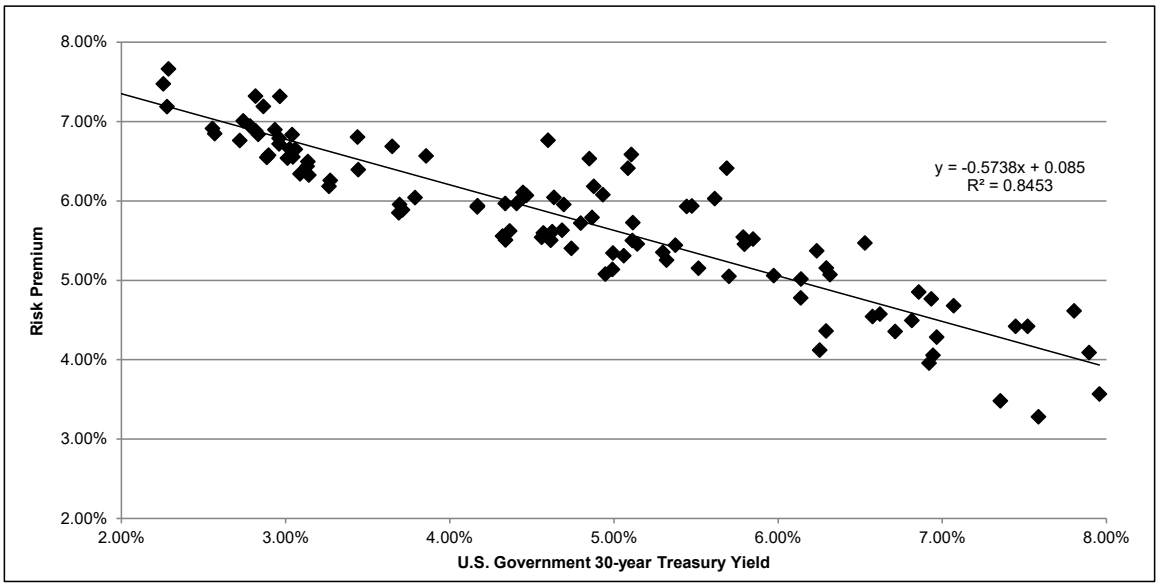
b = slope term

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

Data regarding allowed ROEs were derived from 653 natural gas utility rate cases from 1992 through July 2020 as reported by Regulatory Research Associates ("RRA").[52] This equation's coefficients were statistically significant at the 99.00 percent level.

[52] This analysis began with a total of 1,040 cases which were screened to eliminate limited issue rider cases and cases that were silent with respect to the authorized ROE. After applying those screening criteria, the analysis was based on data for 653 cases.

Figure 13: Risk Premium Results



As shown on Exhibit No.___(AEB-2), Schedule 6, based on the current 30-day average of the 30-year U.S. Treasury bond yield (i.e., 1.34 percent), the risk premium would be 7.73 percent, resulting in an estimated ROE of 9.07 percent. Based on the near-term (Q4 2020 – Q4 2021) projections of the 30-year U.S. Treasury bond yield (i.e., 1.70 percent), the risk premium would be 7.52 percent, resulting in an estimated ROE of 9.22 percent. Based on longer-term (2022 – 2026) projections of the 30-year U.S. Treasury bond yield (i.e., 3.00 percent), the risk premium would be 6.78 percent, resulting in an estimated ROE of 9.78 percent.

Q74. How did the results of the Bond Yield Risk Premium inform your recommended ROE for Montana-Dakota?

A74. I have considered the results of the Bond Yield Risk Premium analysis in setting my recommended ROE for Montana-Dakota. As noted above, investors consider the ROE award of a company when assessing the risk of that company as 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 gas utilities across the US.

F. Expected Earnings Analysis

Q75. Have you considered any additional analysis to estimate the cost of equity for Montana-Dakota?

A75. Yes, I have. I considered an Expected Earnings analysis based on the projected ROEs for each of the proxy group companies.

Q76. What is an Expected Earnings Analysis?

A76. The Expected Earnings methodology is a comparable earnings analysis that calculates the earnings that an investor expects to receive on the book value of a stock. The expected earnings analysis is a forward-looking estimate of investors' expected returns. The use of an Expected Earnings approach based on the proxy companies provides a range of the expected returns on a group of risk comparable companies to the subject company. This range is useful in helping to determine the opportunity cost of investing in the subject company, which is relevant in determining a company's ROE.

Q77. Have any regulators considered the use of an Expected Earnings Analysis?

A77. Yes, they have. The Washington Utilities & Transportation Commission ("Washington UTC"), in its order in Dockets UE-170485 and UG-170486,

considered the results of the Comparable Earnings analysis[53] in establishing the authorized ROE for Avista Corporation. The Washington UTC noted that it tends to place more weight on the results of the DCF, CAPM, and Risk Premium analyses; however, given the wide range of CAPM results presented by the ROE witnesses in the case, the Washington UTC decided to apply weight to the results of the Comparable Earnings analysis.[54] Specifically, the Washington UTC stated the following:

> Finally, as additional data points for our consideration of establishing Avista's ROE, we note that two witness, Mr. McKenzie for Avista and Mr. Parcell for Staff, employ the CE approach to two proxy groups of companies. The respective mid-points of each witnesses' CE analysis are 10.5 and 9.5 percent, respectively, with an average of 10.0 percent. Although we generally do not apply material weight to the CE method, having stronger reliance on the DCF, CAPM and RP methods, we are inclined to include the CE method here given the anomalous CAPM results described previously.[55]

Additionally, in its order in Docket No. ER12111052 for Jersey Central Power and Light Company, the New Jersey Board of Public Utilities ("NJ Board") noted that rate of return experts use a number of models including the DCF, CAPM, Risk Premium, and Comparable Earnings to estimate the return required by investors. Specifically, the Board noted:

> In determining the cost of equity capital for a regulated utility, rate of return experts typically use a variety of financial models to simulate the returns assertedly required by investors. These include

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[53] The Expected Earnings analysis is a form of the Comparable Earnings analysis that relies exclusively on forward-looking projections.

[54] *Wash. Utils. & Transp. Comm'n v. Avista Corp*., Docket Nos. UE-170485 and UG-170486, Order 07, ¶ 65 (April 26,2018). Comparable Earnings as discussed in this docket is similar to the Expected Earnings analysis developed in my Direct Testimony.

[55] *Ibid*.

> Discounted Cash Flow (DCF) models, Risk Premium models, Capital Asset Pricing Models (CAPM), Comparable Earnings models and variations thereof. However, it is widely acknowledged that these economic models constitute estimates, which, although probative, are not necessarily precise. The imprecision in the estimates provided by these models is more pronounced as a result of the current economic environment still recovering from the Great Recession, characterized by some as the worst economy since the Great Depression.[56]

Q78. How did you develop the Expected Earnings Approach?

A78. I relied primarily on the projected ROE capital for the proxy companies as reported by Value Line for the period from 2023-2025. However, I adjusted those projected ROEs to account for the fact that the ROEs reported by Value Line are calculated on the basis of common shares outstanding at the end of the period, as opposed to average shares outstanding over the period. As shown in Exhibit No.___(AEB-2), Schedule 7, the Expected Earnings analysis results in a mean of 10.08 percent for the proxy group.[57]

VII. REGULATORY AND BUSINESS RISKS

Q79. Do the DCF, CAPM, ECAPM, Bond Yield Plus Risk Premium, and Expected Earnings results for the proxy group, taken alone, provide an appropriate estimate of the cost of equity for Montana-Dakota?

A79. No, they do not. These results provide only a range of the appropriate estimate of the Company's cost of equity. There are several additional factors that must be taken into consideration when determining where the Company's cost of equity

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[56] BPU Docket No. ER12111052, OAL Docket No. PUC16310-12, Order Adopting Initial Decision with Modifications and Clarifications, March 18, 2015, at 71.

[57] For the proxy group plus NJR, the mean is 10.07 percent.

falls within the range of results. These factors, which are discussed below, should be considered with respect to their overall effect on the Company's risk profile.

A. Small Size Risk

Q80. Please explain the risk associated with small size.

A80. Both the financial and academic communities have long accepted the proposition that the cost of equity for small firms is subject to a "size effect." While empirical evidence of the size effect often is based on studies of industries other than regulated utilities, utility analysts also have noted the risk associated with small market capitalizations. Specifically, an analyst for Ibbotson Associates noted:

> For small utilities, investors face additional obstacles, such as a smaller customer base, limited financial resources, and a lack of diversification across customers, energy sources, and geography. These obstacles imply a higher investor return.[58]

Q81. How does the smaller size of a utility affect its business risk?

A81. In general, smaller companies are less able to withstand adverse events that affect their revenues and expenses. The impact of weather variability, the loss of large customers to bypass opportunities, or the destruction of demand as a result of general macroeconomic conditions or fuel price volatility will have a proportionately greater impact on the earnings and cash flow volatility of smaller utilities. Similarly, capital expenditures for non-revenue producing investments, such as system maintenance and replacements, will put proportionately greater pressure on customer costs, potentially leading to customer attrition or demand

[58] Michael Annin, Equity and the Small-Stock Effect, Public Utilities Fortnightly, October 15, 1995.

reduction. Taken together, these risks affect the return required by investors for smaller companies.

Q82. How does Montana-Dakota's natural gas distribution business in North Dakota compare in size to the proxy group companies?

A82. As noted previously, Montana-Dakota serves approximately 113,239 residential, commercial and industrial customers and, as of year-end 2019, had net utility natural gas plant in North Dakota of approximately $196.1 million.[59] Montana-Dakota's natural gas distribution operations in North Dakota are substantially smaller than the mean for the proxy group companies in terms of market capitalization. Exhibit No.___(AEB-2), Schedule 8 provides the actual market capitalization for the proxy group companies and estimates the implied market capitalization for Montana-Dakota (i.e., the implied market capitalization if Montana-Dakota's natural gas distribution operations in North Dakota were a stand-alone publicly-traded entity). To estimate the size of the Company's market capitalization relative to the proxy group, I calculated Montana-Dakota's proposed capital structure equity component of $98.65 million by multiplying Montana-Dakota's 2019 net utility plant in service of approximately $196.1 million by Montana-Dakota's projected common equity ratio of 50.306 percent. I then applied the average market-to-book ratio for the proxy group of 1.66 to Montana-Dakota's implied common equity balance and arrived at an implied market capitalization of

[59] Montana-Dakota Utilities, 2019 Annual Report to the North Dakota Public Service Commission, I. Intrastate Return on Equity, pp. 2 of 2, Line No. 3.

approximately $163.46 million, or 3.58 percent of the average market capitalization for the proxy group.[60]

Q83. How did you estimate the size premium for Montana-Dakota?

A83. Given this relative size information, it is possible to estimate the impact of size on the ROE for Montana-Dakota using Duff and Phelps data that estimates the stock risk premia based on the size of a company's market capitalization. As shown in Exhibit No.___(AEB-2), Schedule 8, the average market capitalization of the proxy group of approximately $4.57 billion corresponds to the fourth decile of the Duff and Phelps market capitalization data.[61] Based on Duff and Phelps' analysis, that decile corresponds to a size premium of 0.77 percent (i.e., 77 basis points). Montana-Dakota's implied market capitalization of approximately $163.46 million falls within the tenth decile**,** which comprises market capitalization levels up to $229.75 million and corresponds to a size premium of 4.99 percent (i.e., 499 basis points)**.** The difference between those size premia is 422 basis points (i.e., 4.99 percent minus 0.77 percent)**.**

Q84. Were utility companies included in the size premium study conducted by Duff and Phelps?

A84. Yes, they were. In fact, as shown in Exhibit 7.2 of Duff and Phelp's 2019 Valuation Handbook, OGE Energy Corp. had the largest market capitalization of the

[60] For the proxy group plus NJR, the average market-to-book ratio is 1.65, and the implied market cap is $162.64, which is 3.74 percent of the average of the proxy group including NJR.

[61] For the proxy group plus NJR, the mean market cap is $4.35 billion, which also corresponds to the fourth decile.

companies contained in the fourth decile.[62] Therefore, Duff and Phelp's did include utility companies in its size risk premium study.

Q85. Is the size premium applicable to companies in regulated industries such as natural gas utilities?

A85. Yes, it is. In fact, Stephanie Chretien and Frank Coggins in the article "Cost of Equity for Energy Utilities: Beyond the CAPM",[63] recently studied the CAPM and its ability to estimate the risk premium for the utility industry in particular subgroups of utilities. One of the subgroups was a group of natural gas distribution companies that contained many of the same natural gas distribution companies included in my proxy group.[64] The article considered the CAPM, the Fama-French three-factor model and a model similar to the Empirical CAPM that I have also considered above. In the article, the Fama-French three-factor model explicitly included an adjustment to the CAPM for risk associated with size. As Chretien and Coggins show the Beta coefficient on the size variable for the U.S. natural gas utility group was positive and statistically significant indicating that small size risk was relevant for regulated natural gas utilities.[65] This demonstrates that the traditional CAPM model would not account for risk associated with small size.

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62 Source: Duff &Phelps, Valuation Handbook: Guide to Cost of Capital, 2019, Exhibit 7.2.

63 Chrétien, Stéphane, and Frank Coggins. "Cost Of Equity For Energy Utilities: Beyond The CAPM." *Energy Studies Review*, vol. 18, no. 2, 2011, doi:10.15173/esr.v18i2.531.

64 The U.S. natural gas utility group included: AGL Resources Inc., Atmos Energy Corp., Laclede Group, New Jersey Resources Corp., Northwest Natural Gas Co., Piedmont Natural Gas Co., South Jersey Industries, Southwest Gas Corp. and WGL Holdings Inc.

65 Chrétien, Stéphane, and Frank Coggins. "Cost Of Equity For Energy Utilities: Beyond The CAPM." *Energy Studies Review*, vol. 18, no. 2, 2011, doi:10.15173/esr.v18i2.531, at 31.

Q86. Have regulators in other jurisdictions made a specific risk adjustment to the ROE results based on a company's small size?

A86. Yes, they have. In Order No. 15, the Regulatory Commission of Alaska ("RCA") concluded that Alaska Electric Light and Power Company ("AEL&P") was riskier than the proxy group companies due to small size as well as other business risks. The RCA did "not believe that adopting the upper end of the range of ROE analyses in this case, without an explicit adjustment, would adequately compensate AEL&P for its greater risk." [66] Thus, the RCA awarded AEL&P an ROE of 12.875 percent which was 108 basis points above the highest return on equity estimate from any model presented in the case.[67] Similarly, in Order No. 19, the RCA noted that small size as well as other business risks such as structural regulatory lag, weather risk, alternative rate mechanisms, gas supply risk, geographic isolation and economic conditions increased the risk of ENSTAR Natural Gas Company.[68] Ultimately, the RCA concluded that:

> Although we agree that the risk factors identified by ENSTAR increase its risk, we do not attempt to quantify the amount of that increase. Rather, we take the factors into consideration when evaluating the remainder of the record and the recommendations presented by the parties. After applying our reasoned judgment to the record, we find that 11.875% represents a fair ROE for ENSTAR.[69]

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66 Docket No. U-10-29, In the Matter of the Revenue Requirement and Cost of Service Study Designated as TA381-1 Filed by Alaska Electric Light and Power Company, Order entered September 2, 2011 (Order No. 15), at 37.

67 *Id.*, at 32 and 37.

68 Docket No. U-16-066, In the Matter of the Tariff Revision Designated as TA285-4 Filed by ENSTAR Natural Gas Company, A Division of SEMCO Energy, Inc., Order entered September 22, 2017 (Order No. 19), at 50-52.

69 Ibid.

Additionally, in Docket No. E017/GR-15-1033 for Otter Tail Power Company ("Otter Tail"), the Minnesota Public Utilities Commission ("Minnesota PUC") selected an ROE above the mean DCF results, as a result of multiple factors including Otter Tail's small size. The Minnesota PUC stated:

> The record in this case establishes a compelling basis for selecting an ROE above the mean average within the DCF range, given Otter Tail's unique characteristics and circumstances relative to other utilities in the proxy group. These factors include the company's relatively smaller size, geographically diffuse customer base, and the scope of the Company's planned infrastructure investments.[70]

Q87. How have you considered the smaller size of Montana-Dakota in your recommendation?

A87. While I have estimated the effect of Montana-Dakota's small size on the ROE, I am not proposing a specific adjustment for this risk factor. Rather, I believe it is important to consider the small size of Montana-Dakota's natural gas distribution operations in North Dakota in the determination of where, within the range of analytical results, the Company's required ROE falls. Therefore, the additional risk associated with small size indicates that the Company's ROE should be established above the mean results for the proxy group companies.

[70] Order in Docket No. E017/GR-15-1033, In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Service in the State of Minnesota (August 16, 2016), at 55.

B. Flotation Cost

Q88. What are flotation costs?

A88. 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.

Q89. Why is it important to consider flotation costs in the allowed ROE?

A89. A regulated utility must have the opportunity to earn an ROE that is both competitive and compensatory to attract and retain new investors. To the extent that a company is denied the opportunity to recover prudently incurred flotation costs, actual returns will fall short of expected returns, thereby diluting equity share value.

Q90. Are flotation costs part of the utility's invested costs or part of the utility's expenses?

A90. Flotation costs are part of the invested costs of the utility, which are properly reflected on the balance sheet under "paid in capital." They are not current expenses, and, therefore, are not reflected on the income statement. Rather, like investments in rate base or the issuance costs of long-term debt, flotation costs are incurred over time. As a result, the great majority of a utility's flotation cost is incurred prior to the test year but remains part of the cost structure that exists during the test year and beyond, and as such, should be recognized for ratemaking purposes. Therefore, it is irrelevant whether an issuance occurs during the test year or is planned for the test year because failure to allow recovery of past flotation

costs may deny Montana-Dakota the opportunity to earn its required ROR in the future.

Q91. Please provide an example of why a flotation cost adjustment is necessary to compensate investors for the capital they have invested.

A91. Suppose MDU Resources issues stock with a value of $100, and an equity investor invests $100 in MDU Resources in exchange for that stock. Further suppose that, after paying the flotation costs associated with the equity issuance, which include fees paid to underwriters and attorneys, among others, MDU Resources ends up with only $97 of issuance proceeds, rather than the $100 the investor contributed. MDU Resources invests that $97 in plant used to serve its customers, which becomes part of rate base. Absent a flotation cost adjustment, the investor will thereafter earn a return on only the $97 invested in rate base, even though she contributed $100. Making a small flotation cost adjustment gives the investor a reasonable opportunity to earn the authorized return, rather than the lower return that results when the authorized return is applied to an amount less than what the investor contributed.

Q92. Is the date of MDU Resources' last issued common equity important in the determination of flotation costs?

A92. No, it is not. As shown in Exhibit No.___(AEB-2), Schedule 8, MDU Resources closed on equity issuances of approximately $58 million and $54 million (for a total of 4.7 million shares of common stock) in November 2002 and February 2004, respectively. The vintage of the issuance, however, is not particularly important because the investor suffers a shortfall in every year that he should have a

reasonable opportunity to earn a return on the full amount of capital that he has contributed. Returning to my earlier example, the investor who contributed $100 is entitled to a reasonable opportunity to earn a return on $100 not only in the first year after the investment, but in every subsequent year in which he has the $100 invested. Leaving aside depreciation, which is dealt with separately, there is no basis to conclude that the investor is entitled to earn a return on $100 in the first year after issuance, but thereafter is entitled to earn a return on only $97. As long as the $100 is invested, the investor should have a reasonable opportunity to earn a return on the entire amount.

Q93. Is the need to consider flotation costs recognized by the academic and financial communities?

A93. Yes, it is. 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:

> Flotation costs occur when new issues of stock or debt are sold to the public. The firm usually incurs several kinds of flotation or transaction costs, which reduce the actual proceeds received by the firm. Some of these are direct out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and prospectus preparation costs. Because of this reduction in proceeds, the firm's required returns on these proceeds equate to a higher return to compensate for the additional costs. Flotation costs can be accounted for either by amortizing the cost, thus reducing the cash flow to discount, or by incorporating the cost into the cost of capital. Because flotation

costs are not typically applied to operating cash flow, one must incorporate them into the cost of capital.[71]

Q94. How did you calculate the flotation costs for Montana-Dakota?

A94. My flotation cost calculation is based on the costs of issuing equity that were incurred by MDU Resources in its two most recent common equity issuances. Those issuance costs were applied to my proxy group. Applying the actual issuance costs for MDU Resources provided in Exhibit No.___(AEB-2), Schedule 9, to the DCF analysis, the flotation costs are estimated to be 0.14 percent (i.e., 14 basis points).[72]

Q95. Do your final results include an adjustment for flotation cost recovery?

A95. No, they do not. I did not make an explicit adjustment for flotation costs to any of my quantitative analyses. Rather, I provide the above result for consideration in my recommended ROE, which reflects the range of results from my Constant Growth DCF, CAPM, ECAPM, Bond Yield Plus Risk Premium, and Expected Earnings analyses.

C. Capital Expenditures

Q96. Please summarize the Company's capital expenditure requirements.

A96. The Company's current projections for 2021 through 2024 include approximately $89.8 million in capital investments for the period.[73] Based on the Company's 2019

[71] Shannon P. Pratt, Cost of Capital Estimation and Applications, Second Edition, at 220-221.
[72] For the proxy group plus NJR, the flotation costs are also estimated to be 0.14 percent (i.e., 14 basis points).
[73] Data provided by Montana-Dakota Utilities Co.

net utility plant of approximately $196.1 million,[74] the $89.8 million of anticipated capital expenditures are approximately 45.82 percent of Montana-Dakota's 2019 net utility plant.

Q97. How is the Company's risk profile affected by their substantial capital expenditure requirements?

A97. As with any utility faced with substantial capital expenditure requirements, the Company's risk profile may be adversely affected in two significant and related ways: (1) the heightened level of investment increases the risk of under-recovery or delayed recovery of the invested capital; and (2) an inadequate return would put downward pressure on key credit metrics.

Q98. Do credit rating agencies recognize the risks associated with elevated levels of capital expenditures?

A98. Yes, they do. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and, therefore, credit ratings. To that point, S&P explains the importance of regulatory support for large capital projects:

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

[74] Montana-Dakota Utilities, 2019 Annual Report to the North Dakota Public Service Commission, I. Intrastate Return on Equity, pp. 2 of 2, Line No. 3

> work-in-progress or similar ratemaking methods historically were extraordinary measures for use in unusual circumstances, but when construction costs are rising, cash flow support could be crucial to maintain credit quality through the spending program. Even more favorable are those jurisdictions that present an opportunity for a higher return on capital projects as an incentive to investors.[75]

Therefore, to the extent that Montana-Dakota's rates do not permit the opportunity to recover its capital investments on a regular basis, the Company will face increased recovery risk and thus increased pressure on its credit metrics.

Q99. Does Montana-Dakota have a capital tracking mechanism to recover the costs associated with its capital expenditures plan between rate cases?

A99. No. Montana-Dakota currently does not recover capital investment costs between rate cases utilizing a capital tracking mechanism. Therefore, Montana-Dakota depends entirely on rate case filings for capital cost recovery. However, significant programs like Montana-Dakota's that drive capital expenditure requirements generally receive cost recovery through infrastructure and capital trackers. As shown in Exhibit No.___(AEB-2), Schedule 10, 12 out of 18 (67 percent) of the operating companies held by the proxy group recover costs through capital tracking mechanisms. Since Montana-Dakota does not currently have a capital tracking mechanism, Montana-Dakota's risk relative to the proxy group is increased.

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

Q100. What are your conclusions regarding the effect of the Company's capital spending requirements on its risk profile and cost of capital?

A100. The Company's capital expenditure requirements as a percentage of net utility plant are significant and will continue over the next few years. Additionally, unlike a number of the operating subsidiaries of the proxy group, Montana-Dakota does not have a comprehensive capital tracking mechanism to recover the Company's projected capital expenditures. Therefore, Montana-Dakota's significant capital expenditures plan and limited ability to recover the capital investment on an as-incurred basis results in a risk profile that is greater than that of the proxy group and supports an ROE toward the higher end of the reasonable range of ROEs.

D. Regulatory Risk

Q101. Please explain how the regulatory environment affects investors' risk assessments.

A101. The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have the opportunity to recover the return of, and the market-required return on, invested capital. Regulatory authorities recognize that because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms; doing so balances the long-term interests of investors and customers. Utilities must finance their operations and require the opportunity to earn a reasonable return on their invested capital to maintain their financial profiles. Montana-Dakota is no exception. In that respect,

the regulatory environment is one of the most important factors considered in both debt and equity investors' risk assessments.

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

Equity investors require that the authorized return be adequate to provide a risk-comparable 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.

Q102. Please explain how credit rating agencies consider regulatory risk in establishing a company's credit rating.

A102. Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3)

diversification; and (4) financial strength, liquidity and key financial metrics. Of these criteria, regulatory framework and the ability to recover costs and earn returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.[76]

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."[77] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[78]

Q103. How does the regulatory environment in which a utility operates affect its access to and cost of capital?

A103. The regulatory environment can significantly affect both the access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility

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

[77] 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.

[78] *Id*., at 1.

adapts to that environment are the most important credit considerations."[79] Moody's further highlighted the relevance of a stable and predictable regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation."[80]

Q104. Have you conducted any analysis of the regulatory framework in North Dakota relative to the jurisdictions in which the companies in your proxy group operate?

A104. Yes, I have. I evaluated the regulatory framework in North Dakota on four factors that are important in terms of providing a regulated utility an opportunity to earn its authorized ROE. These are: 1) prevalence of capital cost recovery between rate cases; 2) method for determining rate base (i.e., average vs. year-end); 3) use of revenue decoupling mechanisms or other clauses that mitigate volumetric risk; and 4) test year convention (i.e., forecast vs. historical). The results of this regulatory risk assessment are shown in Exhibit No.___(AEB-2), Schedule 10 and are summarized below.

Capital Cost Recovery: Montana-Dakota does not have a capital tracking mechanism to recover capital investment costs between rate cases. However, 12

[79] Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 6.
[80] *Ibid*.

out of 18 (67 percent) of the operating companies held by the proxy group have some form of capital cost recovery mechanism in place.

Rate Base: The Company's rate base in North Dakota is determined using the average rate base method, while 11 out of 18 (61 percent) of the operating companies held by the proxy group are allowed to use year-end rate base, meaning that the rate base includes capital additions that occurred in the second half of the test year and is more reflective of net utility plant going forward.

Volumetric Risk: Montana-Dakota does have some protection against volumetric risk in North Dakota. In its 2014 rate case settlement, Montana-Dakota was allowed to implement straight fixed-variable rates for its North Dakota residential gas distribution customers. This amounts to protection against volumetric risk for approximately 50 percent of its North Dakota natural gas distribution revenue. This is consistent with 16 out of 18 (89 percent) of the operating companies held by the proxy group that also have some form of protection against volumetric risk.

Test year convention: Montana-Dakota uses a projected future test year in North Dakota, which is consistent with 7 out of 18 (39 percent) of the operating companies held by the proxy group which provide service in jurisdictions that use a fully or partially forecast test year.

Q105. What are your conclusions regarding the perceived risks related to the North Dakota regulatory environment?

A105. 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 proxy group have more timely cost recovery (through cost recovery trackers and more extensive revenue stabilization mechanisms) than Montana-Dakota has in North Dakota. Therefore, the average ROE for the proxy group would understate the return on equity that an investor would require in North Dakota because the risks of timely and full cost recovery are greater for Montana-Dakota in North Dakota than for the proxy group. For that reason, I conclude that the authorized ROE for Montana-Dakota should be higher than the proxy group mean.

VIII. CAPITAL STRUCTURE

Q106. Is the capital structure of the Company an important consideration in the determination of the appropriate ROE?

A106. Yes, it is. Assuming other factors equal, a higher debt ratio increases the risk to investors. For debt holders, higher debt ratios result in a greater portion of the available cash flow being required to meet debt service, thereby increasing the risk associated with the payments on debt. The result of increased risk is a higher interest rate. The incremental risk of a higher debt ratio is more significant for common equity shareholders, who are the residual claimants on the cash flow of the Company. Therefore, the greater the debt service requirement, the less cash flow is available for common equity holders.

Q107. What is Montana-Dakota's proposed capital structure?

A107. The Company's proposal is to establish a capital structure consisting of 50.306 percent common equity, 42.37 percent long-term debt and 7.324 percent short-term debt.

Q108. Did you conduct any analysis to determine if this requested equity ratio was reasonable?

A108. 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.

Q109. Please discuss your analysis of the capital structures of the proxy group companies.

A109. I calculated the mean proportions of common equity, long-term debt, short-term debt and preferred equity for the most recent year for each of the companies in the proxy group at the operating subsidiary level.[81] My analysis of the capital structures of the proxy group companies is provided in Exhibit No.___(AEB-2), Schedule 11. As shown in Exhibit No.___(AEB-2), Schedule 11, the equity ratios for the proxy group ranged from 48.52 percent to 63.55 percent**,** with an average of 55.73 percent.[82] Montana-Dakota's proposed equity ratio of 50.306 is below the

[81] Source: SNL Financial and FERC Form 1 and FERC Form 2 annual reports.
[82] For the proxy group plus NJR, the range is the same, and the average is 56.18 percent.

average equity ratio for the utility operating subsidiaries of the proxy group companies and is therefore reasonable.

Q110. Are there other factors to be considered in setting the Company's capital structure?

A110. Yes, there are. The credit rating agencies' response to the TCJA must also be considered when determining the equity ratio. As discussed previously in my testimony, all three rating agencies have noted that the TCJA has negative implications for utility cash flows. Moody's unprecedented downgrade of the rating outlook for the entire utilities sector in June 2018 and continued downgrades of utilities since that time stresses the importance of maintaining adequate cash flow metrics for the industry as a whole and Montana-Dakota in the context of this proceeding.

Q111. Is there a relationship between the equity ratio and the authorized ROE?

A111. Yes, there is. The equity ratio is the primary indicator of financial risk for a regulated utility such as Montana-Dakota. 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 greater leverage and the resulting increased fixed payment obligations.

Q112. What is your conclusion regarding an appropriate equity ratio for Montana-Dakota?

A112. Considering the actual capital structures of the proxy group operating companies, I believe that Montana-Dakota's proposed common equity ratio of 50.306 percent is

reasonable. The proposed equity ratio is well withing the range of equity ratios established by the capital structures of the utility operating subsidiaries of the proxy companies. In addition, based on the cash flow concerns raised by credit rating agencies as a result of the TCJA, it is reasonable to rely on a higher equity ratio than the Company may have relied on previously.

IX. CONCLUSIONS AND RECOMMENDATION

Q113. What is your conclusion regarding a fair ROE for Montana-Dakota?

A113. Figure 14 below provides a summary of my analytical results for the proxy group.[83] Based on these results, the qualitative analyses presented in my Direct Testimony, the business and financial risks of Montana-Dakota compared to the proxy group, and the effects of Federal tax reform on the cash flow metrics of utilities, it is my view that an ROE of 10.20 percent is reasonable and would fairly balance the interests of customers and shareholders. This ROE would enable the Company to maintain its financial 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, reliable and affordable natural gas utility service to customers in North Dakota.

[83] For results based on the proxy group plus NJR, please see Exhibit No.___(AEB-2), Schedule 2.

Figure 14: Summary of Analytical Results[84] [85]

Constant Growth DCF			
	Mean Low	Mean	Mean High
30-Day Average Price	9.72%	10.23%	11.31%
90-Day Average Price	9.51%	10.02%	11.11%
180-Day Average Price	9.78%	9.78%	10.87%
Capital Asset Pricing Model			
	Current Risk-Free Rate (1.34%)	Q4 2020-Q4 2021 Projected Risk-Free Rate (1.70%)	2022-2026 Projected Risk-Free Rate (3.00%)
Value Line Beta	11.95%	12.01%	12.21%
Bloomberg Beta	11.86%	11.92%	12.13%
Empirical Capital Asset Pricing Model			
Value Line Beta	12.45%	12.49%	12.65%
Bloomberg Beta	12.38%	12.43%	12.59%
Bond Yield Plus Risk Premium Analysis			
Risk Premium Analysis	9.07%	9.22%	9.78%
Expected Earnings Analysis			
Expected Earnings Results	10.08%		

Q114. What is your conclusion with respect to Montana-Dakota's proposed capital structure?

A114. My conclusion is that Montana-Dakota's proposal to establish a capital structure consisting of 50.306 percent common equity, 42.37 percent long-term debt and 7.324 percent short-term debt is reasonable when compared to the capital structures of the companies in the proxy group and taking in consideration the impact of the TCJA on the cash flows and therefore should be adopted.

[84] The analytical results displayed reflect the results of the Constant Growth DCF analysis excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent.

[85] Results displayed are for the proxy group of six companies, not including NJR. For results based on the proxy group plus NJR, please see Exhibit No.___(AEB-2), Schedule 2.

Q115. Does this conclude your Direct Testimony?

A115. Yes, it does.

ANN E. BULKLEY
Senior Vice President

Ms. Bulkley has more than two decades of management and economic consulting experience in the energy industry. Ms. Bulkley has extensive state and federal regulatory experience on both electric and natural gas issues including rate of return, cost of equity and capital structure issues. Ms. Bulkley has provided expert testimony on the cost of capital in more than 30 regulatory proceedings before regulatory commissions in Arizona, Arkansas, Colorado, Connecticut, Kansas, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New Mexico, New York, North Dakota, Oklahoma, Pennsylvania, Texas, South Dakota, West Virginia, and the Federal Energy Regulatory Commission. In addition, Ms. Bulkley has prepared and provided supporting analysis for at least forty Federal and State regulatory proceedings. In addition, Ms. Bulkley has worked on acquisition teams with investors seeking to acquire utility assets, providing valuation services including an understanding of regulation, market expected returns, and the assessment of utility risk factors. Ms. Bulkley has assisted clients with valuations of public utility and industrial properties for ratemaking, purchase and sale considerations, ad valorem tax assessments, and accounting and financial 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 in more than 30 regulatory proceedings before regulatory commissions in Arizona, Arkansas, Colorado, Connecticut, Kansas, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New Mexico, New York, North Dakota, Oklahoma, Pennsylvania, Texas, South Dakota, West Virginia, and the Federal Energy Regulatory Commission. In addition, Ms. Bulkley has prepared and provided supporting analysis for at least forty Federal and State regulatory proceedings in which she did not testify.

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:

- Northern Indiana Fuel and Light: Provided expert testimony regarding the fair value of the company's natural gas distribution system assets. Valuation relied on cost approach.
- Kokomo Gas: Provided expert testimony regarding the fair value of the company's natural gas distribution system assets. Valuation relied on cost approach.
- 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.
- 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 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.
- 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 Commission				
Arizona Public Service Company	10/19	Arizona Public Service Company	Docket No. E-01345A-19-0236	Return on Equity
Tucson Electric Power Company	04/19	Tucson Electric Power Company	Docket No. E-01933A-19-0028	Return on Equity
Tucson Electric Power Company	11/15	Tucson Electric Power Company	Docket No. E-01933A-15-0322	Return on Equity
UNS Electric	05/15	UNS Electric	Docket No. E-04204A-15-0142	Return on Equity
UNS Electric	12/12	UNS Electric	Docket No. E-04204A-12-0504	Return on Equity
Arkansas Public Service Commission				
Arkansas Oklahoma Gas Corporation	10/13	Arkansas Oklahoma Gas Corporation	Docket No. 13-078-U	Return on Equity
Colorado Public Utilities Commission				
Public Service Company of Colorado	02/20	Public Service Company of Colorado	20AL-0049G	Return on Equity
Public Service Company of Colorado	05/19	Public Service Company of Colorado	19AL-0268E	Return on Equity
Public Service Company of Colorado	01/19	Public Service Company of Colorado	19AL-0063ST	Return on Equity
Atmos Energy Corporation	05/15	Atmos Energy Corporation	Docket No. 15AL-0299G	Return on Equity
Atmos Energy Corporation	04/14	Atmos Energy Corporation	Docket No. 14AL-0300G	Return on Equity
Atmos Energy Corporation	05/13	Atmos Energy Corporation	Docket No. 13AL-0496G	Return on Equity
Connecticut Public Utilities Regulatory Authority				
Connecticut Natural Gas Corporation	06/18	Connecticut Natural Gas Corporation	Docket No. 18-05-16	Return on Equity
Yankee Gas Services Co. d/b/a Eversource Energy	06/18	Yankee Gas Services Co. d/b/a Eversource Energy	Docket No. 18-05-10	Return on Equity
The Southern Connecticut Gas Company	06/17	The Southern Connecticut Gas Company	Docket No. 17-05-42	Return on Equity
The United Illuminating Company	07/16	The United Illuminating Company	Docket No. 16-06-04	Return on Equity
Federal Energy Regulatory Commission				
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

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Sea Robin Pipeline Company LLC	11/18	Sea Robin Pipeline Company LLC	Docket# RP19-352-000	Return on Equity
Tallgrass Interstate Gas Transmission	10/15	Tallgrass Interstate Gas Transmission	RP16-137	Return on Equity
Idaho Public Utilities Commission				
PacifiCorp d/b/a Rocky Mountain Power	06/20	PacifiCorp d/b/a Rocky Mountain Power	PAC-E-20-03	Return on Equity
Indiana Utility Regulatory Commission				
Indiana and Michigan American Water Company	09/18	Indiana and Michigan American Water Company	IURC Cause No. 45142	Return on Equity
Northern Indiana Public Service Company	09/17	Northern Indiana Public Service Company	Cause No. 44988	Fair Value
Indianapolis Power and Light Company	12/16	Indianapolis Power and Light Company	Cause No.44893	Fair Value
Northern Indiana Public Service Company	10/15	Northern Indiana Public Service Company	Cause No. 44688	Fair Value
Indianapolis Power and Light Company	09/15	Indianapolis Power and Light Company	Cause No. 44576 Cause No. 44602	Fair Value
Kokomo Gas and Fuel Company	09/10	Kokomo Gas and Fuel Company	Cause No. 43942	Fair Value
Northern Indiana Fuel and Light Company, Inc.	09/10	Northern Indiana Fuel and Light Company, Inc.	Cause No. 43943	Fair Value
Kansas Corporation Commission				
Atmos Energy Corporation	08/15	Atmos Energy Corporation	Docket No. 16-ATMG-079-RTS	Return on Equity
Kentucky Public Service Commission				
Kentucky American Water Company	11/18	Kentucky American Water Company	Docket No. 2018-00358	Return on Equity
Maine Public Utilities Commission				
Central Maine Power	10/18	Central Maine Power	Docket No. 2018-00194	Return on Equity
Maryland Public Service Commission				
Maryland American Water Company	06/18	Maryland American Water Company	Case No. 9487	Return on Equity
Massachusetts Appellate Tax Board				
Hopkinton LNG Corporation	03/20	Hopkinton LNG Corporation	Docket No.	Valuation of LNG Facility
FirstLight Hydro Generating Company	06/17	FirstLight Hydro Generating Company	Docket No. F-325471 Docket No. F-325472 Docket No. F-325473 Docket No. F-325474	Valuation of Electric Generation Assets

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Massachusetts Department of Public Utilities				
Berkshire Gas Company	05/18	Berkshire Gas Company	DPU 18-40	Return on Equity
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Michigan Public Service Commission				
Wisconsin Electric Power Company	12/11	Wisconsin Electric Power Company	Case No. U-16830	Return on Equity
Michigan Tax Tribunal				
New Covert Generating Co., LLC.	03/18	The Township of New Covert Michigan	MTT Docket No. 000248TT and 16-001888-TT	Valuation of Electric Generation Assets
Covert Township	07/14	New Covert Generating Co., LLC.	Docket No. 399578	Valuation of Electric Generation Assets
Minnesota Public Utilities Commission				
Allete, Inc. d/b/a Minnesota Power	11/19	Allete, Inc. d/b/a Minnesota Power	E015/GR-19-442	Return on Equity
CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	10/19	CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	G-008/GR-19-524	Return on Equity
Great Plains Natural Gas Co.	09/19	Great Plains Natural Gas Co.	Docket No. G004/GR-19-511	Return on Equity
Minnesota Energy Resources Corporation	10/17	Minnesota Energy Resources Corporation	Docket No. G011/GR-17-563	Return on Equity
Missouri Public Service Commission				
Missouri American Water Company	06/17	Missouri American Water Company	Case No. WR-17-0285 Case No. SR-17-0286	Return on Equity
Montana Public Service Commission				
Montana-Dakota Utilities Co.	09/18	Montana-Dakota Utilities Co.	D2018.9.60	Return on Equity
New Hampshire - Board of Tax and Land Appeals				
Public Service Company of New Hampshire d/b/a Eversource Energy	11/19 12/19	Public Service Company of New Hampshire d/b/a Eversource Energy	Master Docket No. 28873-14-15-16-17PT	Valuation of Utility Property and Generating Assets
New Hampshire Public Utilities Commission				
Public Service Company of New Hampshire	05/19	Public Service Company of New Hampshire	DE-19-057	Return on Equity

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-Rockingham Superior Court				
Eversource Energy	05/18	Public Service Commission of New Hampshire	218-2016-CV-00899 218-2017-CV-00917	Valuation of Utility Property
New Jersey Board of Public Utilities				
New Jersey American Water Company, Inc.	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	EO18060629 GO18060630	Return on Equity
Public Service Electric and Gas Company	02/18	Public Service Electric and Gas Company	GR17070776	Return on Equity
Public Service Electric and Gas Company	01/18	Public Service Electric and Gas Company	ER18010029 GR18010030	Return on Equity
New Mexico Public Regulation Commission				
Southwestern Public Service Company	07/19	Southwestern Public Service Company	19-00170-UT	Return on Equity
Southwestern Public Service Company	10/17	Southwestern Public Service Company	Case No. 17-00255-UT	Return on Equity
Southwestern Public Service Company	12/16	Southwestern Public Service Company	Case No. 16-00269-UT	Return on Equity
Southwestern Public Service Company	10/15	Southwestern Public Service Company	Case No. 15-00296-UT	Return on Equity
Southwestern Public Service Company	06/15	Southwestern Public Service Company	Case No. 15-00139-UT	Return on Equity
New York State Department of Public Service				
Niagara Mohawk Power Corporation	07/20	National Grid USA	Case No. 20-E-0380 20-G-0381	Return on Equity
Corning Natural Gas Corporation	02/20	Corning Natural Gas Corporation	Case No. 20-G-0101	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/19	New York State Electric and Gas Company Rochester Gas and Electric	19-E-0378 19-G-0379 19-E-0380 19-G-0381	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
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	Gas 17-G-0460 Electric 17-E-0459	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-G-0284 Case No. 15-E-0285 Case No. 15-G-0286	Return on Equity
North Dakota Public Service Commission				
Northern States Power Company	12/12	Northern States Power Company	C-PU-12-813	Return on Equity
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity
Oklahoma Corporation Commission				
Arkansas Oklahoma Gas Corporation	01/13	Arkansas Oklahoma Gas Corporation	Cause No. PUD 201200236	Return on Equity
Oregon Public Service Commission				
PacifiCorp d/b/a Pacific Power & Light	02/20	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-374	Return on Equity
Pennsylvania Public Utility Commission				
American Water Works Company Inc.	04/17	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

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

SUMMARY OF ROE ANALYSES RESULTS [1]

Constant Growth DCF			
	Mean Low	Mean	Mean High
30-Day Average	9.72%	10.23%	11.31%
90-Day Average	9.51%	10.02%	11.11%
180-Day Average	9.78%	9.78%	10.87%
Constant Growth Average	9.67%	10.01%	11.10%
CAPM			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.95%	12.01%	12.21%
Bloomberg Beta	11.86%	11.92%	12.13%
ECAPM			
Value Line Beta	12.45%	12.49%	12.65%
Bloomberg Beta	12.38%	12.43%	12.59%
Bond Yield Plus Risk Premium			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Risk Premium Analysis	9.07%	9.22%	9.78%
Expected Earnings Analysis			
Expected Earnings Analysis	10.08%		

Notes:

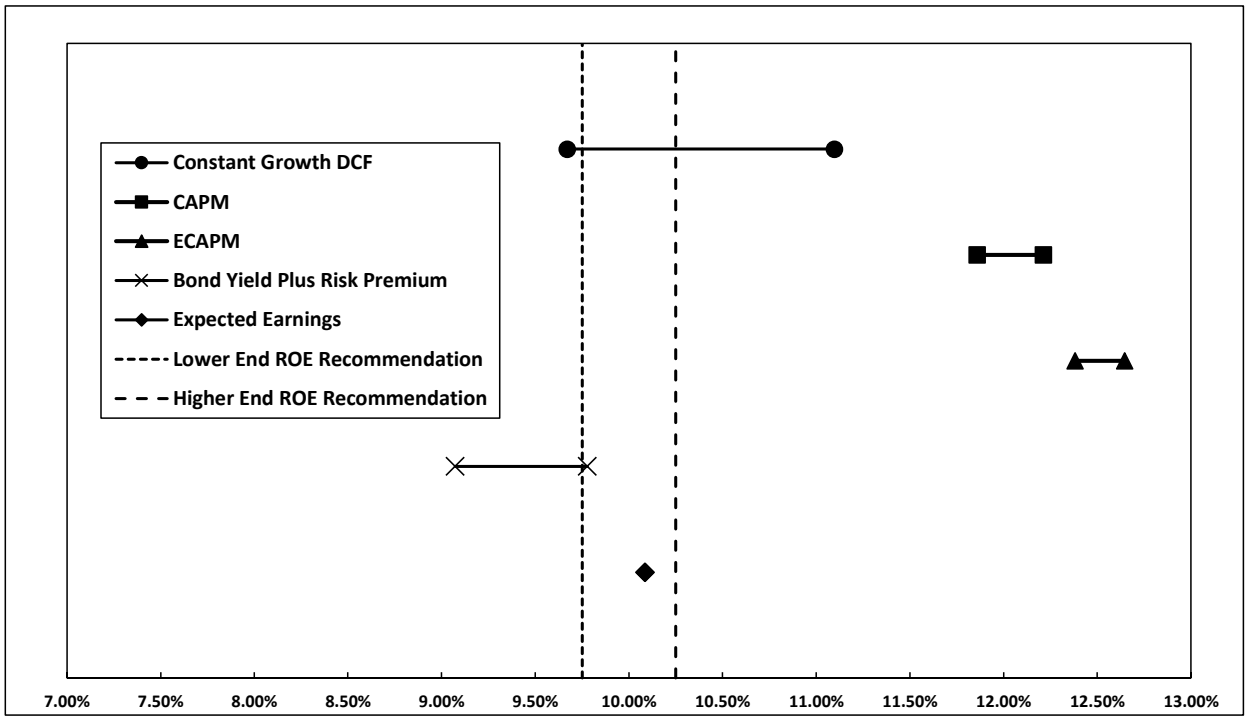
[1] The analytical results included in the table reflect the results of the Constant Growth DCF analysis excluding the results for individual companies that did not meet the minimum threshold of 7 percent.

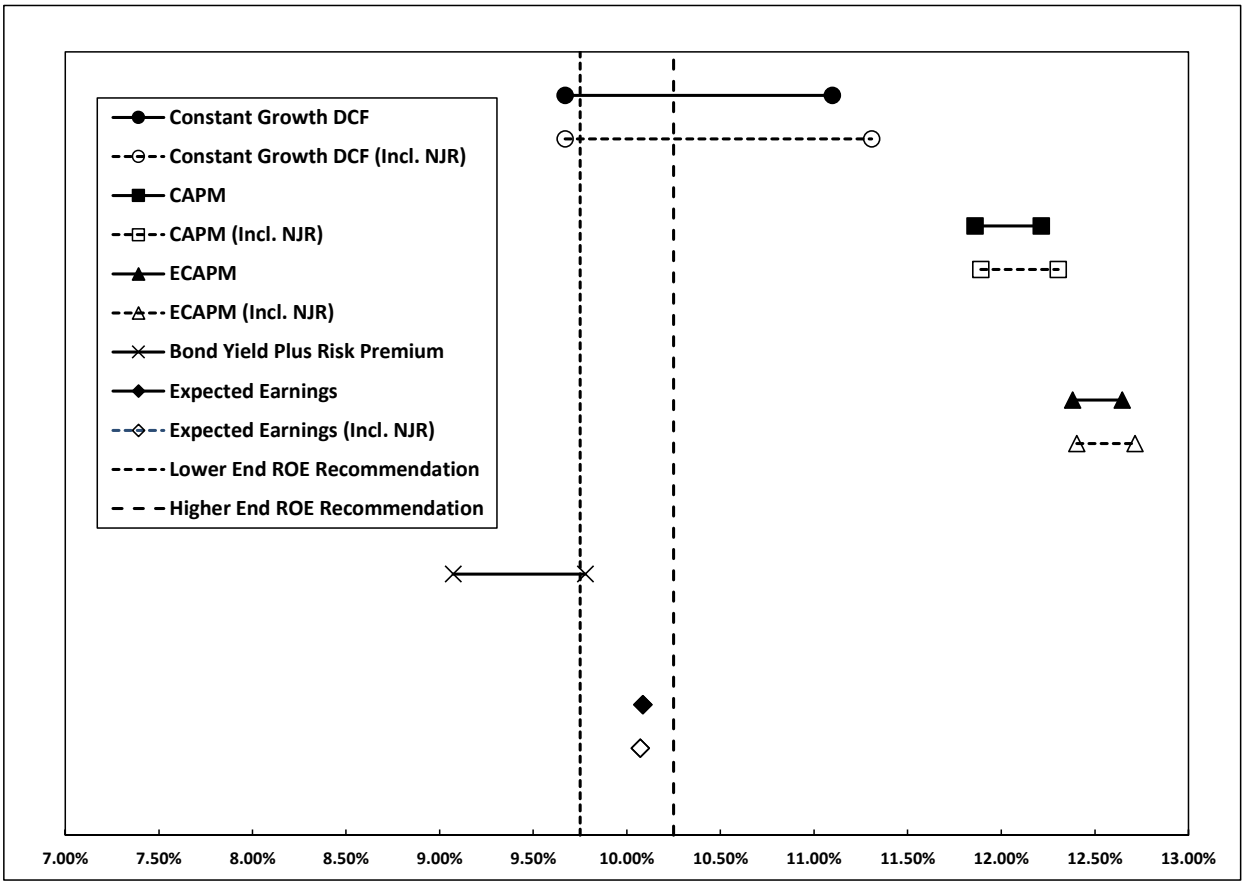
SUMMARY OF ROE ANALYSES RESULTS INCLUDING NJR [1]

Constant Growth DCF			
	Mean Low	Mean	Mean High
30-Day Average	9.72%	10.48%	11.52%
90-Day Average	9.51%	10.27%	11.31%
180-Day Average	9.78%	10.06%	11.09%
Constant Growth Average	9.67%	10.27%	11.31%
CAPM			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	12.06%	12.11%	12.30%
Bloomberg Beta	11.89%	11.95%	12.16%
ECAPM			
Value Line Beta	12.53%	12.57%	12.71%
Bloomberg Beta	12.40%	12.45%	12.61%
Bond Yield Plus Risk Premium			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Risk Premium Analysis	9.07%	9.22%	9.78%
Expected Earnings Analysis			
Expected Earnings Analysis	10.07%		

Notes:

[1] The analytical results included in the table reflect the results of the Constant Growth DCF analysis excluding the results for individual companies that did not meet the minimum threshold of 7 percent.


Constant Growth DCF
CAPM
ECAPM
Bond Yield Plus Risk Premium
Expected Earnings
Lower End ROE Recommendation
Higher End ROE Recommendation
7.00%
7.50%
8.00%
8.50%
9.00%
9.50%
10.00%
10.50%
11.00%
11.50%
12.00%
12.50%
13.00%


Constant Growth DCF
Constant Growth DCF (Incl. NJR)
CAPM
CAPM (Incl. NJR)
ECAPM
ECAPM (Incl. NJR)
Bond Yield Plus Risk Premium
Expected Earnings
Expected Earnings (Incl. NJR)
Lower End ROE Recommendation
Higher End ROE Recommendation
7.00%
7.50%
8.00%
8.50%
9.00%
9.50%
10.00%
10.50%
11.00%
11.50%
12.00%
12.50%
13.00%

PROXY GROUP SCREENING DATA AND RESULTS - FINAL PROXY GROUP

Company	Ticker	[1] Dividends	[2] S&P or Moody's Investment Grade Credit Rating	[3] Positive Growth Rates from at least two sources (Value Line, Yahoo! First Call, and Zacks)	[4] % Regulated Operating Income > 70%	[5] % Regulated Natural Gas Operating Income > 60%	[6] Announced Merger
Atmos Energy Corporation	ATO	Yes	A	Yes	100.00%	66.55%	No
Northwest Natural Gas Company	NWN	Yes	A+	Yes	100.00%	90.90%	No
ONE Gas Inc.	OGS	Yes	A	Yes	100.00%	100.00%	No
South Jersey Industries, Inc.	SJI	Yes	BBB	Yes	100.00%	100.00%	No
Southwest Gas Corporation	SWX	Yes	BBB+	Yes	80.46%	100.00%	No
Spire, Inc.	SR	Yes	A-	Yes	97.03%	100.00%	No

Notes:

[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional
[3] Source: Yahoo! Finance, Value Line Investment Survey, and Zacks
[4] Source: Form 10-K's for 2019, 2018, and 2017
[5] Source: Form 10-K's for 2019, 2018, and 2017
[6] Source: SNL Financial News Releases

30-DAY CONSTANT GROWTH DCF – MDU NORTH DAKOTA PROXY GROUP

										All Proxy Group			With Exclusions		
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	$2.30	$100.96	2.28%	2.36%	7.00%	7.15%	7.20%	7.12%	9.36%	9.48%	9.56%	9.36%	9.48%	9.56%
New Jersey Resources Corporation	NJR	$1.25	$31.58	3.96%	4.05%	2.00%	6.00%	6.00%	4.67%	6.00%	8.72%	10.08%		8.72%	10.08%
Northwest Natural Gas Company	NWN	$1.91	$53.91	3.54%	3.63%	7.56%	3.90%	3.90%	5.12%	7.51%	8.75%	11.24%	7.51%	8.75%	11.24%
ONE Gas Inc.	OGS	$2.16	$75.82	2.85%	2.93%	6.50%	5.00%	5.50%	5.67%	7.92%	8.60%	9.44%	7.92%	8.60%	9.44%
South Jersey Industries, Inc.	SJI	$1.18	$23.82	4.95%	5.23%	12.50%	10.30%	10.30%	11.03%	15.51%	16.26%	17.76%	15.51%	16.26%	17.76%
Southwest Gas Corporation	SWX	$2.28	$68.98	3.31%	3.43%	8.00%	8.20%	6.00%	7.40%	9.40%	10.83%	11.64%	9.40%	10.83%	11.64%
Spire, Inc.	SR	$2.49	$64.57	3.86%	3.95%	5.50%	4.67%	4.80%	4.99%	8.62%	8.94%	9.46%	8.62%	8.94%	9.46%
Mean				3.46%	3.59%	7.84%	6.54%	6.28%	6.89%	9.72%	10.48%	11.52%	9.72%	10.23%	11.31%
Mean Incl. NJR						7.01%	6.46%	6.24%	6.57%	9.19%	10.23%	11.31%	9.72%	10.48%	11.52%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-day average as of July 31, 2020.
[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.

90-DAY CONSTANT GROWTH DCF – MDU NORTH DAKOTA PROXY GROUP

										All Proxy Group			With Exclusions		
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	$2.30	$100.88	2.28%	2.36%	7.00%	7.15%	7.20%	7.12%	9.36%	9.48%	9.56%	9.36%	9.48%	9.56%
New Jersey Resources Corporation	NJR	$1.25	$32.74	3.82%	3.91%	2.00%	6.00%	6.00%	4.67%	5.86%	8.57%	9.93%		8.57%	9.93%
Northwest Natural Gas Company	NWN	$1.91	$59.27	3.22%	3.31%	7.56%	3.90%	3.90%	5.12%	7.19%	8.43%	10.91%	7.19%	8.43%	10.91%
ONE Gas Inc.	OGS	$2.16	$79.56	2.72%	2.79%	6.50%	5.00%	5.50%	5.67%	7.78%	8.46%	9.30%	7.78%	8.46%	9.30%
South Jersey Industries, Inc.	SJI	$1.18	$25.63	4.60%	4.86%	12.50%	10.30%	10.30%	11.03%	15.14%	15.89%	17.39%	15.14%	15.89%	17.39%
Southwest Gas Corporation	SWX	$2.28	$71.78	3.18%	3.29%	8.00%	8.20%	6.00%	7.40%	9.27%	10.69%	11.51%	9.27%	10.69%	11.51%
Spire, Inc.	SR	$2.49	$69.70	3.57%	3.66%	5.50%	4.67%	4.80%	4.99%	8.33%	8.65%	9.17%	8.33%	8.65%	9.17%
Mean				3.26%	3.38%	7.84%	6.54%	6.28%	6.89%	9.51%	10.27%	11.31%	9.51%	10.02%	11.11%
Mean Incl. NJR						7.01%	6.46%	6.24%	6.57%	8.99%	10.02%	11.11%	9.51%	10.27%	11.31%

Notes:

[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-day average as of July 31, 2020.
[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.

180-DAY CONSTANT GROWTH DCF -- MDU NORTH DAKOTA PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	All Proxy Group [9]	[10]	[11]	With Exclusions [12]	[13]	[14]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	$2.30	$105.49	2.18%	2.26%	7.00%	7.15%	7.20%	7.12%	9.26%	9.37%	9.46%	9.26%	9.37%	9.46%
New Jersey Resources Corporation	NJR	$1.25	$36.82	3.39%	3.47%	2.00%	6.00%	6.00%	4.67%	5.43%	8.14%	9.50%		8.14%	9.50%
Northwest Natural Gas Company	NWN	$1.91	$64.70	2.95%	3.03%	7.56%	3.90%	3.90%	5.12%	6.91%	8.15%	10.63%		8.15%	10.63%
ONE Gas Inc.	OGS	$2.16	$84.58	2.55%	2.63%	6.50%	5.00%	5.50%	5.67%	7.62%	8.29%	9.14%	7.62%	8.29%	9.14%
South Jersey Industries, Inc.	SJI	$1.18	$28.02	4.21%	4.44%	12.50%	10.30%	10.30%	11.03%	14.73%	15.48%	16.98%	14.73%	15.48%	16.98%
Southwest Gas Corporation	SWX	$2.28	$72.66	3.14%	3.25%	8.00%	8.20%	6.00%	7.40%	9.23%	10.65%	11.47%	9.23%	10.65%	11.47%
Spire, Inc.	SR	$2.49	$75.11	3.31%	3.40%	5.50%	4.67%	4.80%	4.99%	8.06%	8.39%	8.91%	8.06%	8.39%	8.91%
Mean				3.06%	3.17%	7.84%	6.54%	6.28%	6.89%	9.30%	10.06%	11.09%	9.78%	9.78%	10.87%
Mean Incl. NJR						7.01%	6.46%	6.24%	6.57%	8.75%	9.78%	10.87%	9.78%	10.06%	11.09%

Notes:

[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-day average as of July 31, 2020.
[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.

Actual and Alternative Calculation of Northwest Natural's Projected Earnings Growth Rate from Value Line

[1]		[2]	[3]
Actual Earnings Per Share		Projected Earnings Per Share (2023-2025)	Projected Earnings Growth Rate
2017	-1.94		
2018	2.33		
2019	2.19		
Mean (2017-2019)	0.86	3.5	26.36%
Mean (2018-2019)	2.26	3.5	7.56%

Notes:
[1] Source: Value Line
[2] Source: Value Line
[3] Equals ([2] / [1]) ^ (1/6) - 1

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

Company	Ticker	[1] Current 30-day average of 30-year U.S. Treasury bond yield	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] CAPM ROE	[6] ECAPM ROE
Atmos Energy Corporation	ATO	1.34%	0.80	13.95%	12.60%	11.43%	12.06%
New Jersey Resources Corporation	NJR	1.34%	0.90	13.95%	12.60%	12.69%	13.00%
Northwest Natural Gas Company	NWN	1.34%	0.80	13.95%	12.60%	11.43%	12.06%
ONE Gas Inc.	OGS	1.34%	0.80	13.95%	12.60%	11.43%	12.06%
South Jersey Industries, Inc.	SJI	1.34%	0.95	13.95%	12.60%	13.32%	13.47%
Southwest Gas Corporation	SWX	1.34%	0.90	13.95%	12.60%	12.69%	13.00%
Spire, Inc.	SR	1.34%	0.80	13.95%	12.60%	11.43%	12.06%
Mean						11.95%	12.45%
Mean Incl. NJR						12.06%	12.53%

Notes:
[1] Source: Bloomberg Professional, dated July 31, 2020
[2] Source: Value Line; dated May 29, 2020
[3] Source: Schedule-5, page 3
[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

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q4 2020 - Q4 2021)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] CAPM ROE	[6] ECAPM ROE
Atmos Energy Corporation	ATO	1.70%	0.80	13.95%	12.25%	11.50%	12.11%
New Jersey Resources Corporation	NJR	1.70%	0.90	13.95%	12.25%	12.72%	13.03%
Northwest Natural Gas Company	NWN	1.70%	0.80	13.95%	12.25%	11.50%	12.11%
ONE Gas Inc.	OGS	1.70%	0.80	13.95%	12.25%	11.50%	12.11%
South Jersey Industries, Inc.	SJI	1.70%	0.95	13.95%	12.25%	13.33%	13.49%
Southwest Gas Corporation	SWX	1.70%	0.90	13.95%	12.25%	12.72%	13.03%
Spire, Inc.	SR	1.70%	0.80	13.95%	12.25%	11.50%	12.11%
Mean						12.01%	12.49%
Mean Incl. NJR						12.11%	12.57%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 39, No. 8, August 1, 2020, at 2
[2] Source: Value Line; dated May 29, 2020
[3] Source: Schedule-5, page 3
[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

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2022 - 2026)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] CAPM ROE	[6] ECAPM ROE
Atmos Energy Corporation	ATO	3.00%	0.80	13.95%	10.95%	11.76%	12.30%
New Jersey Resources Corporation	NJR	3.00%	0.90	13.95%	10.95%	12.85%	13.13%
Northwest Natural Gas Company	NWN	3.00%	0.80	13.95%	10.95%	11.76%	12.30%
ONE Gas Inc.	OGS	3.00%	0.80	13.95%	10.95%	11.76%	12.30%
South Jersey Industries, Inc.	SJI	3.00%	0.95	13.95%	10.95%	13.40%	13.54%
Southwest Gas Corporation	SWX	3.00%	0.90	13.95%	10.95%	12.85%	13.13%
Spire, Inc.	SR	3.00%	0.80	13.95%	10.95%	11.76%	12.30%
Mean						12.21%	12.65%
Mean Incl. NJR						12.30%	12.71%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 39, No. 6, June 1, 2020, at 14
[2] Source: Value Line; dated May 29, 2020
[3] Source: Schedule-5, page 3
[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

Company	Ticker	[1] Current 30-day average of 30-year U.S. Treasury bond yield	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] CAPM ROE	[6] ECAPM ROE
Atmos Energy Corporation	ATO	1.34%	0.79	13.95%	12.60%	11.24%	11.91%
New Jersey Resources Corporation	NJR	1.34%	0.85	13.95%	12.60%	12.07%	12.54%
Northwest Natural Gas Company	NWN	1.34%	0.76	13.95%	12.60%	10.86%	11.63%
ONE Gas Inc.	OGS	1.34%	0.85	13.95%	12.60%	12.02%	12.50%
South Jersey Industries, Inc.	SJI	1.34%	0.87	13.95%	12.60%	12.35%	12.75%
Southwest Gas Corporation	SWX	1.34%	0.93	13.95%	12.60%	13.09%	13.31%
Spire, Inc.	SR	1.34%	0.81	13.95%	12.60%	11.60%	12.18%
Mean						11.86%	12.38%
Mean Incl. NJR						11.89%	12.40%

Notes:
[1] Source: Bloomberg Professional, dated July 31, 2020
[2] Source: Bloomberg Professional
[3] Source: Schedule-5, page 3
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q4 2020 - Q4 2021)	Beta	Market Return	Market Risk Premium	CAPM ROE	ECAPM ROE
Atmos Energy Corporation	ATO	1.70%	0.79	13.95%	12.25%	11.31%	11.97%
New Jersey Resources Corporation	NJR	1.70%	0.85	13.95%	12.25%	12.13%	12.58%
Northwest Natural Gas Company	NWN	1.70%	0.76	13.95%	12.25%	10.95%	11.70%
ONE Gas Inc.	OGS	1.70%	0.85	13.95%	12.25%	12.07%	12.54%
South Jersey Industries, Inc.	SJI	1.70%	0.87	13.95%	12.25%	12.39%	12.78%
Southwest Gas Corporation	SWX	1.70%	0.93	13.95%	12.25%	13.12%	13.32%
Spire, Inc.	SR	1.70%	0.81	13.95%	12.25%	11.66%	12.23%
Mean						11.92%	12.43%
Mean Incl. NJR						11.95%	12.45%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 39, No. 8, August 1, 2020, at 2
[2] Source: Bloomberg Professional
[3] Source: Schedule-5, page 3
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2022 - 2026)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] CAPM ROE	[6] ECAPM ROE
Atmos Energy Corporation	ATO	3.00%	0.79	13.95%	10.95%	11.59%	12.18%
New Jersey Resources Corporation	NJR	3.00%	0.85	13.95%	10.95%	12.32%	12.73%
Northwest Natural Gas Company	NWN	3.00%	0.76	13.95%	10.95%	11.27%	11.94%
ONE Gas Inc.	OGS	3.00%	0.85	13.95%	10.95%	12.27%	12.69%
South Jersey Industries, Inc.	SJI	3.00%	0.87	13.95%	10.95%	12.56%	12.90%
Southwest Gas Corporation	SWX	3.00%	0.93	13.95%	10.95%	13.21%	13.39%
Spire, Inc.	SR	3.00%	0.81	13.95%	10.95%	11.91%	12.42%
Mean						12.13%	12.59%
Mean Incl. NJR						12.16%	12.61%

Notes:
[1] Source: Blue Chip Financial Forecasts, Vol. 39, No. 6, June 1, 2020, at 14
[2] Source: Bloomberg Professional
[3] Source: Schedule-5, page 3
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

MARKET RISK PREMIUM DERIVED FROM S&P EARNINGS AND ESTIMATE REPORT

[7] S&P's estimate of the S&P 500 Dividend Yield	1.72%
[8] S&P's estimate of the S&P 500 Growth Rate	12.12%
[9] S&P 500 Estimated Required Market Return	13.95%

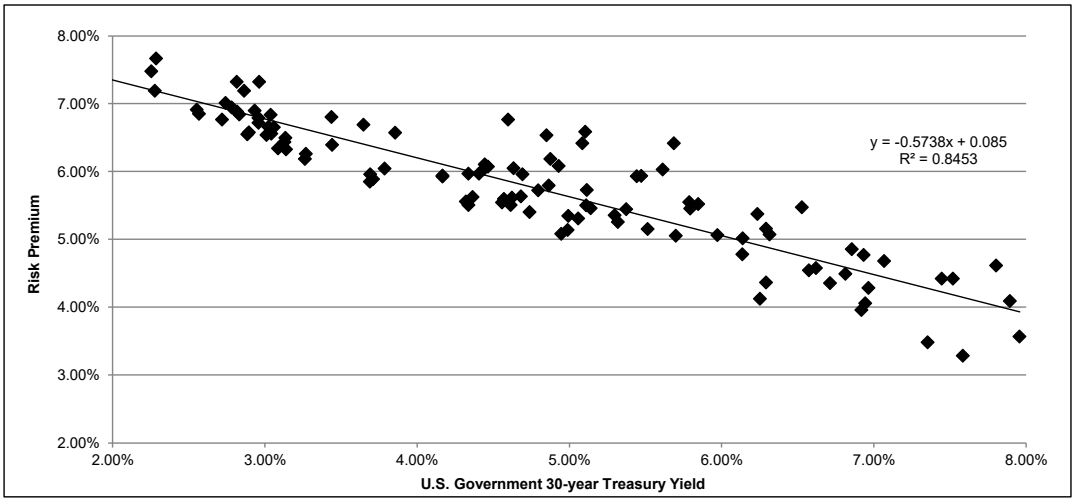
Notes:
[7] Source: S&P Dow Jones Indices, S&P 500 Earnings and Estimate Report, July 31, 2020
[8] Source: S&P Dow Jones Indices, S&P 500 Earnings and Estimate Report, July 31, 2020
[9] Equals ([7] x (1 + (0.5 x [8]))) + [8]

Risk Premium -- Natural Gas Utilities (US)

	[1] Average Authorized Gas ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
1992.1	12.42%	7.80%	4.62%
1992.2	11.98%	7.89%	4.09%
1992.3	11.87%	7.45%	4.42%
1992.4	11.94%	7.52%	4.42%
1993.1	11.75%	7.07%	4.68%
1993.2	11.71%	6.86%	4.85%
1993.3	11.39%	6.31%	5.07%
1993.4	11.16%	6.14%	5.02%
1994.1	11.12%	6.57%	4.55%
1994.2	10.84%	7.35%	3.48%
1994.3	10.87%	7.58%	3.28%
1994.4	11.53%	7.96%	3.57%
1995.2	11.00%	6.94%	4.06%
1995.3	11.07%	6.71%	4.35%
1995.4	11.61%	6.23%	5.37%
1996.1	11.45%	6.29%	5.16%
1996.2	10.88%	6.92%	3.96%
1996.3	11.25%	6.96%	4.29%
1996.4	11.19%	6.62%	4.58%
1997.1	11.31%	6.81%	4.49%
1997.2	11.70%	6.93%	4.77%
1997.3	12.00%	6.53%	5.47%
1997.4	10.92%	6.14%	4.78%
1998.2	11.37%	5.85%	5.52%
1998.3	11.41%	5.47%	5.94%
1998.4	11.69%	5.10%	6.59%
1999.1	10.82%	5.37%	5.44%
1999.2	11.25%	5.79%	5.46%
1999.4	10.38%	6.25%	4.12%
2000.1	10.66%	6.29%	4.36%
2000.2	11.03%	5.97%	5.06%
2000.3	11.33%	5.79%	5.55%
2000.4	12.10%	5.69%	6.41%
2001.1	11.38%	5.44%	5.93%
2001.2	10.75%	5.70%	5.05%
2001.4	10.65%	5.30%	5.35%
2002.1	10.67%	5.51%	5.15%
2002.2	11.64%	5.61%	6.03%
2002.3	11.50%	5.08%	6.42%
2002.4	11.01%	4.93%	6.08%
2003.1	11.38%	4.85%	6.53%
2003.2	11.36%	4.60%	6.76%
2003.3	10.61%	5.11%	5.50%
2003.4	10.84%	5.11%	5.73%
2004.1	11.06%	4.88%	6.18%
2004.2	10.57%	5.32%	5.25%
2004.3	10.37%	5.06%	5.31%
2004.4	10.66%	4.86%	5.79%
2005.1	10.65%	4.69%	5.96%
2005.2	10.54%	4.47%	6.07%
2005.3	10.47%	4.44%	6.03%
2005.4	10.32%	4.68%	5.63%
2006.1	10.68%	4.63%	6.05%
2006.2	10.60%	5.14%	5.46%
2006.3	10.34%	4.99%	5.34%
2006.4	10.14%	4.74%	5.40%
2007.1	10.52%	4.80%	5.72%
2007.2	10.13%	4.99%	5.14%

Risk Premium -- Natural Gas Utilities (US)

	[1]	[2]	[3]
	Average Authorized Gas ROE	U.S. Govt. 30-year Treasury	Risk Premium
2007.3	10.03%	4.95%	5.08%
2007.4	10.12%	4.61%	5.50%
2008.1	10.38%	4.41%	5.97%
2008.2	10.17%	4.57%	5.60%
2008.3	10.55%	4.44%	6.11%
2008.4	10.34%	3.65%	6.69%
2009.1	10.24%	3.44%	6.81%
2009.2	10.11%	4.17%	5.94%
2009.3	9.88%	4.32%	5.56%
2009.4	10.31%	4.34%	5.97%
2010.1	10.24%	4.62%	5.61%
2010.2	9.99%	4.36%	5.62%
2010.3	10.43%	3.86%	6.57%
2010.4	10.09%	4.17%	5.93%
2011.1	10.10%	4.56%	5.54%
2011.2	9.85%	4.34%	5.51%
2011.3	9.65%	3.69%	5.96%
2011.4	9.88%	3.04%	6.84%
2012.1	9.63%	3.14%	6.50%
2012.2	9.83%	2.93%	6.90%
2012.3	9.75%	2.74%	7.01%
2012.4	10.06%	2.86%	7.19%
2013.1	9.57%	3.13%	6.44%
2013.2	9.47%	3.14%	6.33%
2013.3	9.60%	3.71%	5.89%
2013.4	9.83%	3.79%	6.04%
2014.1	9.54%	3.69%	5.85%
2014.2	9.84%	3.44%	6.39%
2014.3	9.45%	3.26%	6.19%
2014.4	10.28%	2.96%	7.32%
2015.1	9.47%	2.55%	6.91%
2015.2	9.43%	2.88%	6.55%
2015.3	9.75%	2.96%	6.79%
2015.4	9.68%	2.96%	6.72%
2016.1	9.48%	2.72%	6.76%
2016.2	9.42%	2.57%	6.85%
2016.3	9.47%	2.28%	7.19%
2016.4	9.67%	2.83%	6.84%
2017.1	9.60%	3.04%	6.56%
2017.2	9.47%	2.90%	6.58%
2017.3	10.14%	2.82%	7.32%
2017.4	9.70%	2.82%	6.88%
2018.1	9.68%	3.02%	6.66%
2018.2	9.43%	3.09%	6.34%
2018.3	9.71%	3.06%	6.65%
2018.4	9.53%	3.27%	6.26%
2019.1	9.55%	3.01%	6.54%
2019.2	9.73%	2.78%	6.94%
2019.3	9.95%	2.29%	7.66%
2019.4	9.73%	2.25%	7.48%
2020.1	9.35%	1.89%	7.46%
2020.2	9.55%	1.38%	8.17%
2020.3	9.40%	1.31%	8.09%
AVERAGE	10.48%	4.66%	5.83%
MEDIAN	10.38%	4.63%	5.93%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.919419473
R Square	0.845332167
Adjusted R Square	0.843913196
Standard Error	0.003927645
Observations	111

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.009190058	0.009190058	595.7360629	5.49926E-46
Residual	109	0.001681477	1.54264E-05		
Total	110	0.010871535			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.084995875	0.001157004	73.46201858	1.12743E-94	0.08270273	0.08728902	0.08270273	0.08728902
X Variable 1	-0.57383535	0.023510418	-24.40770499	5.49926E-46	-0.620432235	-0.5272385	-0.620432235	-0.527238466

	[7] U.S. Govt. 30-year Treasury	[8] Risk Premium	[9] ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	1.34%	7.73%	9.07%
Blue Chip Near-Term Projected Forecast (Q4 2020 - Q4 2021) [5]	1.70%	7.52%	9.22%
Blue Chip Long-Term Projected Forecast (2022-2026) [6]	3.00%	6.78%	9.78%
AVERAGE			9.36%

Notes:
[1] Source: Regulatory Research Associates, rate cases through July 31, 2020
[2] Source: Bloomberg Professional, quarterly bond yields are the average of each trading day in the quarter
[3] Equals Column [1] − Column [2]
[4] Source: Bloomberg Professional, 30-day average as of July 31, 2020
[5] Source: Blue Chip Financial Forecasts, Vol. 39, No. 8, August 1, 2020, at 2
[6] Source: Blue Chip Financial Forecasts, Vol. 39, No. 6, June 1, 2020, at 14
[7] See notes [4], [5] & [6]
[8] Equals 0.084996 + (-0.573835 x Column [7])
[9] Equals Column [7] + Column [8]

EXPECTED EARNINGS ANALYSIS

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
		Value Line ROE 2023-2025	Value Line Total Capital 2019	Value Line Common Equity Ratio 2019	Total Equity 2019	Value Line Total Capital 2023-2025	Value Line Common Equity Ratio 2023-2025	Total Equity 2023-2025	Compound Annual Growth Rate	Adjustment Factor	Adjusted Return on Common Equity
Atmos Energy Corporation	ATO	9.00%	9,279.70	62.00%	5,753	16,000	60.00%	9,600	10.78%	1.051	9.46%
New Jersey Resources Corporation	NJR	9.50%	3,088.90	50.20%	1,551	4,580	56.50%	2,588	10.79%	1.051	9.99%
Northwest Natural Gas Company	NWN	11.50%	1,672.00	51.80%	866	1,825	52.50%	958	2.04%	1.010	11.62%
One Gas Inc.	OGS	9.50%	3,415.50	62.30%	2,128	4,400	62.00%	2,728	5.09%	1.025	9.74%
South Jersey Industries, Inc.	SJI	12.00%	3,493.90	40.80%	1,426	4,850	43.50%	2,110	8.16%	1.039	12.47%
Southwest Gas Corporation	SWX	9.50%	4,806.40	52.10%	2,504	7,000	55.50%	3,885	9.18%	1.044	9.92%
Spire, Inc.	SR	7.00%	4,625.60	55.00%	2,544	7,200	55.00%	3,960	9.25%	1.044	7.31%
Mean											10.08%
Mean Incl. NJR											10.07%

Notes:
[1] Source: Value Line, May 29, 2020
[2] Source: Value Line, May 29, 2020
[3] Source: Value Line, May 29, 2020
[4] Equals [2] x [3]
[5] Source: Value Line, May 29, 2020
[6] Source: Value Line, May 29, 2020
[7] Equals [5] x [6]
[8] Equals ([7] / [4]) ^ (1/5) - 1
[9] Equals 2 x (1 + [8]) / (2 + [8])
[10] Equals [1] x [9]

SIZE PREMIUM CALCULATION

Proxy Group Market Capitalization and Market-to-Book Ratio

Company	Ticker	[1] Market Capitalization ($ billions)	[2] Market-to-Book Ratio
Atmos Energy Corporation	ATO	12.43	1.96
New Jersey Resources Corporation	NJR	3.03	1.60
Northwest Natural Gas Company	NWN	1.65	1.83
ONE Gas Inc.	OGS	4.01	1.83
South Jersey Industries, Inc.	SJI	2.20	1.47
Southwest Gas Corporation	SWX	3.84	1.49
Spire, Inc.	SR	3.31	1.36
Mean		4.57	1.66
Mean Incl. NJR		4.35	1.65

Montana-Dakota Utilities Co. - ND Natural Gas		
2019 Net Utility Plant in Service ($ millions) [3]	$	196.10
Projected Common Equity Ratio [3]		50.306%
Implied Common Equity ($ millions) [4]	$	98.65
Implied Market Capitalization ($ millions) [5]	$	163.46
As a percent of Proxy Group Median Market Capitalization		3.58%

Duff & Phelps Cost of Capital Navigator -- Size Premium

Breakdown of Deciles 1-10	[6] Market Capitalization of Largest Company ($ millions)	[7] Size Premium
1-Largest	1,061,355.01	-0.27%
2	30,542.94	0.48%
3	13,100.23	0.69%
4	6,614.96	0.77%
5	4,311.25	1.08%
6	2,685.87	1.37%
7	1,668.28	1.47%
8	993.85	1.61%
9	515.60	2.26%
10-Smallest	229.75	4.99%
Montana-Dakota Utilities Co. - ND Natural Gas - Implied Market Capitalization	163.46	4.99%
Proxy Group Average Market Capitalization	4,572.22	0.77%
Size Premium [8]		4.22%

Notes:
[1] Source: SNL Financial; equals 30-day average as of July 31, 2020
[2] Source: SNL Financial; equals 30-day average as of July 31, 2020
[3] Data provided by Montana-Dakota Utilities Co.
[4] Equals net utility plant in service x projected common equity ratio
[5] Equals [4] x proxy group mean market-to-book ratio
[6] Duff & Phelps Cost of Capital Navigator - Size Premium: Annual Data as of 12/31/2019
[7] Duff & Phelps Cost of Capital Navigator - Size Premium: Annual Data as of 12/31/2019
[8] Equals 4.99% − 0.77%

FLOTATION COST ADJUSTMENT

Company	Date [i]	Shares Issued (000)	Offering Price	Under-writing Discount [ii]	Offering Expense ($000)	Net Proceeds Per Share	Total Flotation Costs ($000)	Equity Issue Before Costs ($000)	Net Proceeds ($000)	Flotation Cost Percentage
MDU Resources Group	2/4/2004	2,300	$ 23.32	0.79	$ 350	$ 22.37	$ 2,174	$ 53,636	$ 51,462	4.05%
MDU Resources Group	11/19/2002	2,400	$ 24.00	0.72	$ 193	$ 23.20	$ 1,921	$ 57,600	$ 55,680	3.33%
							$ 4,094	$ 111,236	$ 107,142	3.68%

Notes:
[i] Offering Completion Date
[ii] Underwriting discount was calculated as the market price minus the offering price when not explicitly given in the prospectus.

The flotation cost adjustment is derived by dividing the dividend yield by 1 − F (where F = flotation costs expressed in percentage terms), or by 0.9632, and adding that result to the constant growth rate to determine the cost of equity. Using the formulas shown previously in my testimony, the Constant Growth DCF calculation is modified as follows to accommodate an adjustment for flotation costs:

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

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
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
Atmos Energy Corporation	ATO	$2.30	$100.96	2.28%	2.36%	2.45%	7.00%	7.15%	7.20%	7.12%	9.48%	9.57%
New Jersey Resources Corporation	NJR	$1.25	$31.58	3.96%	4.05%	4.21%	2.00%	6.00%	6.00%	4.67%	8.72%	8.87%
Northwest Natural Gas Company	NWN	$1.91	$53.91	3.54%	3.63%	3.77%	7.56%	3.90%	3.90%	5.12%	8.75%	8.89%
ONE Gas Inc.	OGS	$2.16	$75.82	2.85%	2.93%	3.04%	6.50%	5.00%	5.50%	5.67%	8.60%	8.71%
South Jersey Industries, Inc.	SJI	$1.18	$23.82	4.95%	5.23%	5.43%	12.50%	10.30%	10.30%	11.03%	16.26%	16.46%
Southwest Gas Corporation	SWX	$2.28	$68.98	3.31%	3.43%	3.56%	8.00%	8.20%	6.00%	7.40%	10.83%	10.96%
Spire, Inc.	SR	$2.49	$64.57	3.86%	3.95%	4.10%	5.50%	4.67%	4.80%	4.99%	8.94%	9.09%
Mean											10.48%	10.61%
Flotation Cost Adjustment [12]												0.14%
Mean Incl. NJR											10.23%	10.36%
Flotation Cost Adjustment Incl. NJR [13]												0.14%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-day average as of July 31, 2020
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [9])
[5] Equals [4] / (1 − Flotation Cost)
[6] Source: Value Line
[7] Source: Yahoo! Finance
[8] Source: Zacks
[9] Equals Average ([6], [7], [8])
[10] Equals [4] + [9]
[11] Equals [5] + [9]
[12] Equals Mean ([11]) − Mean ([10])
[13] Equals Mean ([11]) Incl. NJR − Mean ([10]) Incl. NJR

PU-20
Exhibit No. ___ (AEB-2)
Schedule 9
Page 1 of 1

COMPARISON OF MONTANA-DAKOTA AND PROXY GROUP COMPANIES
RISK ASSESSMENT

		[1]	[2]		[3]		[4]	
Company	**Jurisdiction/Service**	**Test Year**	**Rate Base**		**Revenue Decoupling**		**Capital Cost Recovery Mechanism**	
Atmos Energy Corporation	Kansas - Gas	Historical		Year End		Partial		Yes
	Kentucky - Gas	Fully Forecast		Average		Partial		Yes
	Louisiana - Gas	Historical		Year End		Partial		Yes
	Mississippi - Gas	Partially Forecast		Average		Partial		Yes
	Tennessee - Gas	Fully Forecast		Average		Partial		No
	Texas - Gas	Historical		Year End		Partial		Yes
Northwest Natural Gas Company	Oregon - Gas	Fully Forecast		Average		Partial		No
	Washington - Gas	Historical		Average		No		No
ONE Gas, Inc.	Kansas - Gas	Historical		Year End		Partial		Yes
	Oklahoma - Gas	Historical		Year End		Partial		No
	Texas - Gas	Historical		Year End		Partial		Yes
South Jersey Industries, Inc.	New Jersey - Gas	Partially Forecast		Year End		Full		Yes
Southwest Gas Corporation	Arizona - Gas	Historical		Year End		Full		Yes
	California - Gas	Fully Forecast		Average		Full		No
	Nevada - Gas	Historical		Year End		Full		Yes
Spire, Inc.	Alabama - Gas	Fully Forecast		Average		Partial		No
	Missouri East - Gas	Historical		Year End		Partial		Yes
	Missouri West - Gas	Historical		Year End		No		Yes
Proxy Group Operating Company Count	Fully Forecast	5	Year End	11	Full	4	Yes	12
	Partially Forecast	2	Average	7	Partial	12	No	6
	Historic	11			No	2		
	Forecast	38.89%	Year End	61.11%	RDM	88.89%	CCRM	66.67%
Montana-Dakota Utilities Co. [5]	North Dakota	Fully Forecast		Average		Partial		No

Notes
[1] Source: S&P Global - Market Intelligence Rate Case History (Past Rate Cases), accessed 5/31/2020
[2] Source: S&P Global - Market Intelligence Rate Case History (Past Rate Cases), accessed 5/31/2020
[3] - [4] Source: "Adjustment Clauses: A State-by-state Overview," Regulatory Research Associates, November 12, 2019. Operating subsidiaries not covered in this report were excluded from this exhibit.
[5] Data provided by MDU

CAPITAL STRUCTURE ANALYSIS

COMMON EQUITY RATIO [1]

Proxy Group Company	Ticker	2019	2018	MRY
Atmos Energy Corporation	ATO	58.43%	59.20%	58.43%
New Jersey Resources Corporation	NJR	58.87%	61.92%	58.87%
Northwest Natural Gas Company	NWN	49.19%	49.33%	49.19%
One Gas Inc.	OGS	63.55%	62.03%	63.55%
South Jersey Industries, Inc.	SJI	52.88%	52.82%	52.88%
Southwest Gas Corporation	SWX	48.52%	49.38%	48.52%
Spire Inc.	SR	61.80%	62.79%	61.80%
Proxy Group Excluding NJR				
MEAN		55.73%	55.92%	55.73%
LOW		48.52%	49.33%	48.52%
HIGH		63.55%	62.79%	63.55%
Proxy Group Including NJR				
MEAN		56.18%	56.78%	56.18%
LOW		48.52%	49.33%	48.52%
HIGH		63.55%	62.79%	63.55%

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2019	2018	MRY
Atmos Energy Corporation	ATO	58.43%	59.20%	58.43%
New Jersey Natural Gas Company	NJR	58.87%	61.92%	58.87%
Northwest Natural Gas Company	NWN	49.19%	49.33%	49.19%
Kansas Gas Service Company, Inc.	OGS	63.55%	62.20%	63.55%
Oklahoma Natural Gas Company	OGS		61.94%	61.94%
Texas Gas Service Company, Inc.	OGS		61.95%	61.95%
South Jersey Gas Company	SJI	52.88%	52.82%	52.88%
Southwest Gas Corporation	SWX	48.52%	49.38%	48.52%
Spire Alabama Inc.	SR	66.82%	71.48%	66.82%
Spire Gulf Inc.	SR		45.31%	45.31%
Spire Mississippi Inc.	SR		100.00%	100.00%
Spire Missouri Inc.	SR	59.05%	58.91%	59.05%

Notes:
[1] Ratios are weighted by actual common capital, preferred equity, and long-term debt of Operating Subsidiaries.
[2] Natural Gas operating subsidiaries where data was unable to be obtained for 2018 and 2019 were removed from the analysis.

CAPITAL STRUCTURE ANALYSIS

LONG-TERM DEBT RATIO [1]

Proxy Group Company	Ticker	2019	2018	MRY
Atmos Energy Corporation	ATO	41.57%	40.80%	41.57%
New Jersey Resources Corporation	NJR	41.13%	38.08%	41.13%
Northwest Natural Gas Company	NWN	50.81%	50.67%	50.81%
One Gas Inc.	OGS	36.45%	37.97%	36.45%
South Jersey Industries, Inc.	SJI	47.12%	47.18%	47.12%
Southwest Gas Corporation	SWX	51.48%	50.62%	51.48%
Spire Inc.	SR	38.20%	37.21%	38.20%
Proxy Group Excluding NJR				
MEAN		44.27%	44.08%	44.27%
LOW		36.45%	37.21%	36.45%
HIGH		51.48%	50.67%	51.48%
Proxy Group Including NJR				
MEAN		43.82%	43.22%	43.82%
LOW		36.45%	37.21%	36.45%
HIGH		51.48%	50.67%	51.48%

LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2019	2018	MRY
Atmos Energy Corporation	ATO	41.57%	40.80%	41.57%
New Jersey Natural Gas Company	NJR	41.13%	38.08%	41.13%
Northwest Natural Gas Company	NWN	50.81%	50.67%	50.81%
Kansas Gas Service Company, Inc.	OGS	36.45%	37.80%	36.45%
Oklahoma Natural Gas Company	OGS		38.06%	38.06%
Texas Gas Service Company, Inc.	OGS		38.05%	38.05%
South Jersey Gas Company	SJI	47.12%	47.18%	47.12%
Southwest Gas Corporation	SWX	51.48%	50.62%	51.48%
Spire Alabama Inc.	SR	33.18%	28.52%	33.18%
Spire Gulf Inc.	SR		54.69%	54.69%
Spire Mississippi Inc.	SR		0.00%	0.00%
Spire Missouri Inc.	SR	40.95%	41.09%	40.95%

Notes:
[1] Ratios are weighted by actual common capital, preferred equity, and long-term debt of Operating Subsidiaries.
[2] Natural Gas operating subsidiaries where data was unable to be obtained for 2018 and 2019 were removed from the analysis.

CAPITAL STRUCTURE ANALYSIS

PREFERRED EQUITY RATIO [1]

Proxy Group Company	Ticker	2019	2018	MRY
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%
New Jersey Resources Corporation	NJR	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	0.00%	0.00%	0.00%
One Gas Inc.	OGS	0.00%	0.00%	0.00%
South Jersey Industries, Inc.	SJI	0.00%	0.00%	0.00%
Southwest Gas Corporation	SWX	0.00%	0.00%	0.00%
Spire Inc.	SR	0.00%	0.00%	0.00%
Proxy Group Excluding NJR				
MEAN		0.00%	0.00%	0.00%
LOW		0.00%	0.00%	0.00%
HIGH		0.00%	0.00%	0.00%
Proxy Group Including NJR				
MEAN		0.00%	0.00%	0.00%
LOW		0.00%	0.00%	0.00%
HIGH		0.00%	0.00%	0.00%

PREFERRED EQUITY RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2019	2018	MRY
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%
New Jersey Natural Gas Company	NJR	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	0.00%	0.00%	0.00%
Kansas Gas Service Company, Inc.	OGS	0.00%	0.00%	0.00%
Oklahoma Natural Gas Company	OGS		0.00%	0.00%
Texas Gas Service Company, Inc.	OGS		0.00%	0.00%
South Jersey Gas Company	SJI	0.00%	0.00%	0.00%
Southwest Gas Corporation	SWX	0.00%	0.00%	0.00%
Spire Alabama Inc.	SR	0.00%	0.00%	0.00%
Spire Gulf Inc.	SR		0.00%	0.00%
Spire Mississippi Inc.	SR		0.00%	0.00%
Spire Missouri Inc.	SR	0.00%	0.00%	0.00%

Notes:
[1] Ratios are weighted by actual common capital, preferred equity, and long-term debt of Operating Subsidiaries.
[2] Natural Gas operating subsidiaries where data was unable to be obtained for 2018 and 2019 were removed from the analysis.