**INDIANA GAS COMPANY, INC.**

**d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC.**

**A CENTERPOINT ENERGY COMPANY**

**(VECTREN NORTH)**

**IURC CAUSE NO. 45468**

# DIRECT TESTIMONY

**OF**

**ANN E. BULKLEY**

**ON**

**ECONOMICS AND FINANCE**

**SPONSORING PETITIONER'S EXHIBIT NO. 12,**

**ATTACHMENTS AEB-1 AND AEB-2**

## Glossary of Acronyms

| | |
|---|---|
| ADIT | Accumulated Deferred Income Taxes |
| AEL&P | Alaska Electric Light and Power Company |
| ALJ | Administrative Law Judge |
| CAPM | Capital Asset Pricing Model |
| CARES | Coronavirus Aid, Relief, and Economic Security |
| CBOE | Chicago Board Options Exchange |
| CenterPoint | CenterPoint Energy, Inc. |
| Company | Indiana Gas Company, Inc. d/b/a Vectren Energy Delivery of Indiana, Inc. |
| Concentric | Concentric Energy Advisors, Inc. |
| CSIA | Compliance and System Improvement Adjustment |
| DCF | Discounted Cash Flow |
| ECAP | Empirical Capital Asset Pricing Model |
| FFO | Funds from Operations |
| FOMC | Federal Reserve Open Market Committee |
| IURC or Commission | Indiana Utility Regulatory Commission |
| Michigan PSC | Michigan Public Service Commission |
| Minnesota PUC | Minnesota Public Utilities Commission |
| NJ Board | New Jersey Board of Public Utilities |
| NJR | New Jersey Resources Corporation |
| Oregon PUC | Oregon Public Utilities Commission |
| Otter Tail | Otter Tail Power Company |
| Petitioner | Indiana Gas Company, Inc. d/b/a Vectren Energy Delivery of Indiana, Inc. |
| PMCCF | Primary Market Corporate Credit Facility |
| RCA | Regulatory Commission of Alaska |
| ROE | Return on Equity, used interchangeably with 'cost of equity' |
| SMCCF | Secondary Market Corporate Credit Facility |
| TALF | Term Asset-Backed Securities Loan Facility |
| TCJA | Tax Cut and Jobs Act of 2017 |
| TDSIC | Transmission and Distribution System Infrastructure Charge |
| Utah PSC | Utah Public Service Commission |
| Vectren | Vectren Corporation |
| Vectren North | Indiana Gas Company, Inc. d/b/a Vectren Energy Delivery of Indiana, Inc. |
| Vectren Ohio | Vectren Energy Delivery of Ohio, Inc. |
| Vectren South | Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. |
| VIX | Volatility Index |
| Wyoming PSC | Wyoming Public Service Commission |

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**DIRECT TESTIMONY OF ANN E. BULKLEY**

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

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

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

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

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

A. I am submitting this Prepared Direct Testimony before the Indiana Utility Regulatory Commission ("Commission") on behalf of Indiana Gas Company, Inc. ("Vectren North" or the "Company").

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

A. 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 Petitioner's Exhibit No. 12, Attachment AEB-1.

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

A. 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.

**Q. Have you testified before any regulatory authorities?**

A. Yes. A list of proceedings in which I have provided testimony is provided in Petitioner's Exhibit No. 12, Attachment AEB-1.

## I. PURPOSE AND OVERVIEW OF PREPARED DIRECT TESTIMONY

**Q. Please describe the purpose of your Prepared Direct Testimony.**

A. The purpose of my Prepared Direct Testimony is to present evidence and provide a recommendation regarding the appropriate Return on Equity ("ROE")[1] for Vectren North to be used for ratemaking purposes. I also address the appropriateness of the Company's projected capital structure. My analyses and

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

recommendations are supported by the data presented in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedules 1 through 11, which were prepared by me or under my direction.

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

A. As discussed in more detail in Section VI, I applied the Constant Growth form of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and the 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; and (4) the regulatory environment in which the Company operates. Finally, I considered the Company's projected 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.

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

A. 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 Vectren North's cost of equity in Indiana. Section V explains

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

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 Vectren North. 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 projected 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

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

A. In developing my recommended ROE for Vectren North, 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.
- The effect of current and projected capital market conditions on investors' return requirements.

[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 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.

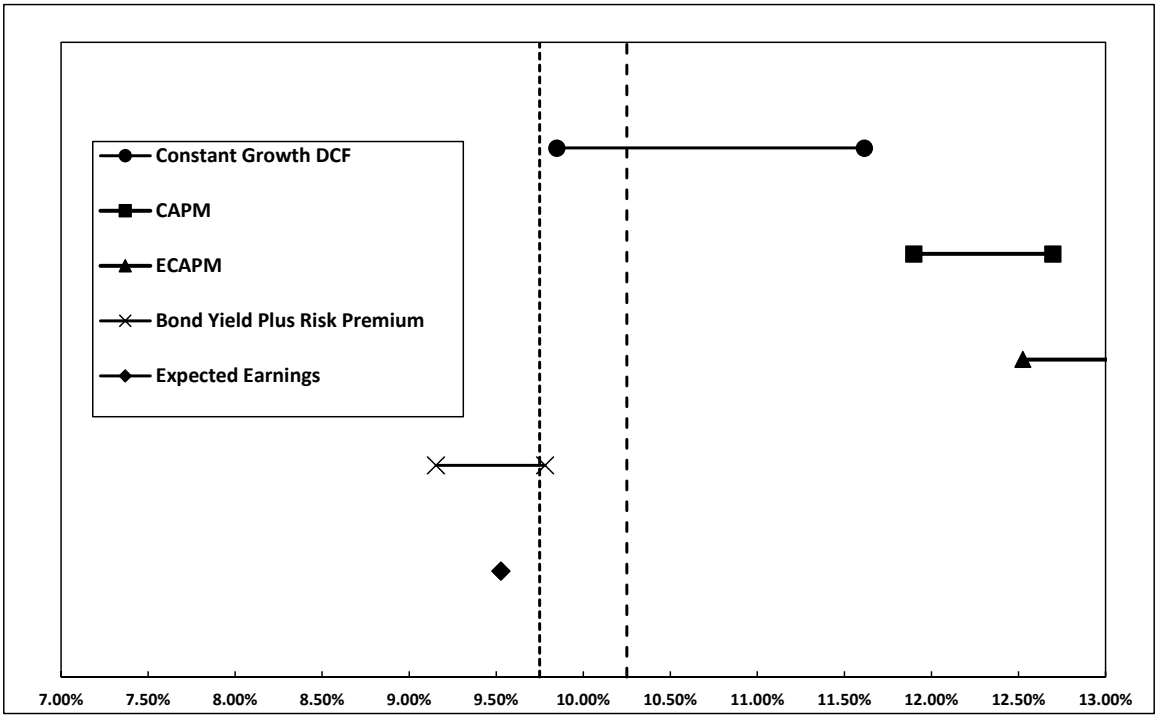
**Q. Please explain how you considered those factors.**

A. I relied on several analytical approaches to estimate Vectren North'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 Vectren North's ROE falls is based on the Company's business and financial risk relative to the proxy group. Although the companies in my proxy groups are generally comparable to Vectren North, each company is unique, and no two companies have the exact business and financial risk profiles. Accordingly, I selected proxy groups 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.

**Q. Please summarize the results of the ROE estimation models that you considered to establish the range of ROEs for Vectren North.**

A. Figure 1 summarizes the range of results produced by the Constant Growth DCF, CAPM, ECAPM, Bond Yield Plus Risk Premium analysis, and Expected Earnings analyses for the Natural Gas Utility Proxy Group.

**Figure 1: Summary of Natural Gas Utility Proxy Group Cost of Equity Analytical Results [4, 5]**




As shown in Figure 1 (and in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 1 Natural Gas Utility Proxy Group), 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 the DCF model, forward looking CAPM and ECAPM analyses, Risk

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[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. For results based on the proxy group plus NJR, see Exhibit No.12, Attachment AEB-2, (Schedule 1 Gas Proxy).

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

**Q. What is your recommended ROE for Vectren North?**

A. My recommendation considers the analytical results presented in Figure 1, as well as the level of regulatory, business, and financial risk faced by Vectren North's natural gas operations in Indiana, relative to the proxy group. Further, my recommendation considers the range of results for the proxy group companies, the relative risk of Vectren North's natural gas operations in Indiana as compared to the proxy groups, as well as current capital market conditions. Within that range, a return of 10.15 percent is reasonable.

**Q. Please summarize the analysis you conducted in determining that Vectren North's projected capital structure is reasonable and appropriate.**

A. Based on the analysis presented in Section VIII of my testimony, I conclude that Vectren North's projected 55.62 percent common equity is reasonable.[6] To determine if Vectren North's projected capital structure was reasonable, I reviewed the capital structures of the utility subsidiaries of the proxy companies. As shown in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 11, the results of that analysis demonstrate that the equity ratios for the Natural Gas Utility Proxy Group[7] range from 50.03 percent to 66.58 percent, with an average of 58.88 percent. Comparing the projected equity ratio to the proxy group demonstrates that the

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[6] Excludes 15.29% cost free capital and 1.61% in other capital from total capital.

[7] Natural Gas Utility Proxy includes six companies and excludes New Jersey Resources Corporation.

Company's projected equity ratio is within the range of equity ratios for the utility operating subsidiaries of the proxy group companies. Further, the Company's projected 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

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

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

**Q. 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?**

A. 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

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

earn its market-based cost of capital, neither customers nor shareholders are disadvantaged.

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

A. 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 Indiana.

While Vectren North is committed to investing the required capital to provide safe and reliable service, because Vectren North is a subsidiary of CenterPoint Energy, the Company competes with the other CenterPoint Energy subsidiaries for discretionary investment capital.

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

A. 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 Vectren North 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

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

A. 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.

**Q. What factors affect the cost of equity for regulated utilities in the current and prospective capital markets?**

A. The cost of equity for regulated utility companies is 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) as the economy recovers from the COVID-19 recession, investors are expected to rotate into cyclical sectors; thus utilities, a defensive sector, are expected to underperform the market over the near-term; and (3) recent Federal tax reform. 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 and Effect on Valuations

**Q. Please summarize current market conditions.**

A. In 2020, market conditions have been extremely volatile. In January and early February 2020, many major market indices reached new threshold levels. As the gravity of the global health pandemic became more apparent, the market became increasingly volatile: in mid-February, utility stock prices reached an all-time high, followed by a significant decline in the overall market and utility stocks; and in March, the S&P 500 Index swung by more than three percent on 16 of the 22 trading days. While volatility has declined from the levels in March, there is still much uncertainty in financial markets as a result of COVID-19. In the November meeting the Federal Reserve Open Market Committee ("FOMC") recognized the uncertainty related to the course of the pandemic which will weigh on economy activity in the near term and pose risks to the economic outlook over the medium term.[9]

**Q. Have you reviewed any indicators that measure volatility in the financial markets?**

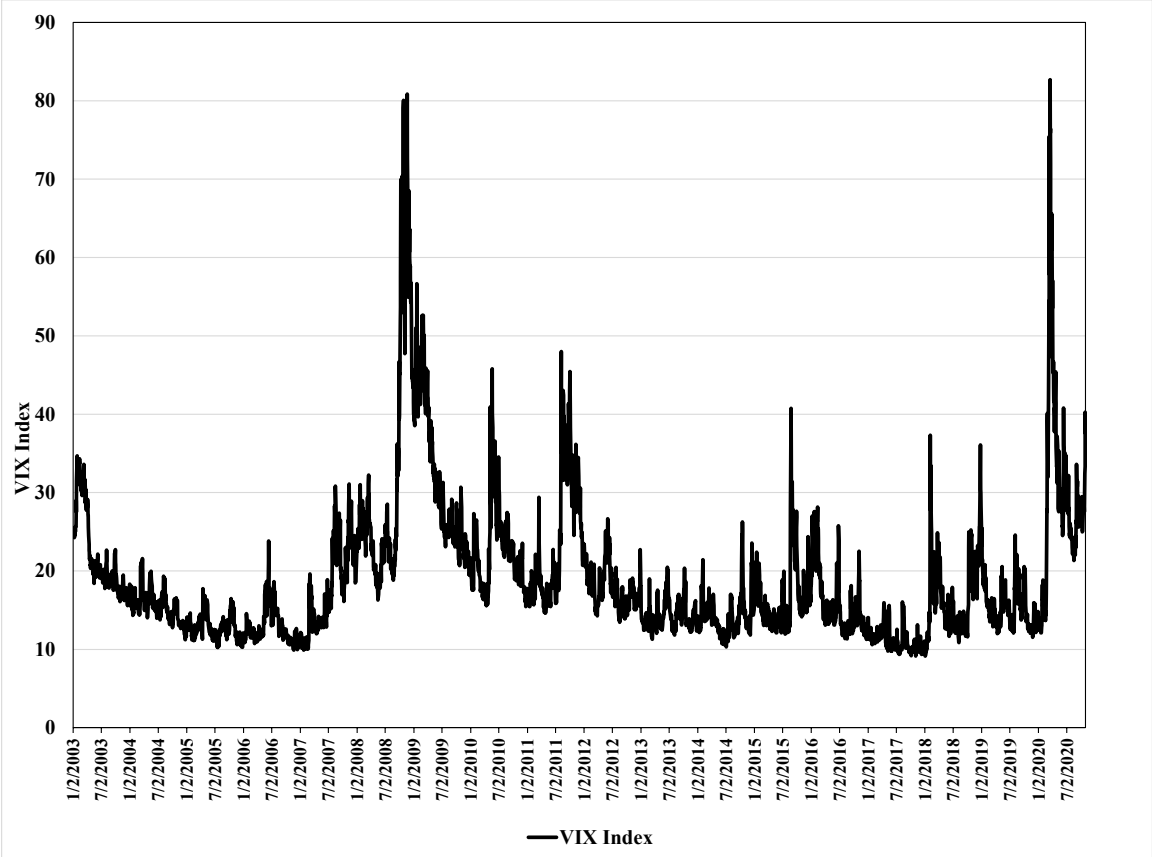
A. Yes, I reviewed a measure of volatility in financial markets, the Chicago Board Options Exchange ("CBOE") Volatility Index ("VIX"). The VIX measures investors' expectation of volatility in the S&P 500 over the next 30 days. As shown in Figure 2, the VIX has recently reached levels not seen since the Great Recession of

[9] FOMC, Press Release, November 5, 2020, at 1.

2008/09.

Furthermore, as shown in Figure 2, while the VIX has declined between April and October, this measure of volatility still remains well above levels seen prior to COVID-19 in January and February 2020, averaging 16.40 during that period, versus 33.55 for the remainder of the year. 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 remains above its long-term average.

**Figure 2: CBOE VIX– January 2003 through October 2020**[10]




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

A. As an outcome of its March 2020 meetings, the Federal Reserve acknowledged that the spread of COVID-19 posed increased risks to economic activity in the country. In response, the Federal Reserve reduced the federal funds rate by 50 basis points and then by another 100 basis points (resulting in a target range of 0.00 percent to 0.25 percent). At that time, the Federal Reserve announced plans to increase its holdings of both Treasury and mortgage-backed securities.

[10] Source: Bloomberg Professional.

On March 23, 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. The PMCCF and SMCCF programs were initially funded at $75 billion, with total funding up to $750 billion. These corporate bond-buying programs have provided liquidity to bond markets, thereby reducing some of the uncertainty that was driving the volatility seen early in the pandemic.

The Federal Reserve also supported the flow of credit to consumers and businesses with up to $100 billion through the Term Asset-Backed Securities Loan Facility.[11] In addition, on March 27, 2020, the U.S. Congress' fiscal stimulus package was signed into law: the Coronavirus Aid, Relief, and Economic Security ("CARES") Act. While these expansive programs have provided for greater price stability, as shown in Figure 2, the VIX remains above long-term historical normal levels.

More recently, in November 2020, the Federal Reserve confirmed that it will continue its accommodative policy over the near term to support the economy.[12]

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

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[11] *Federal Reserve Board Press Release, "Federal Reserve announces extensive new measures to support the economy", March 23, 2020.*

[12] Federal Reserve Press Release. November 5, 2020.

A. The Federal Reserve has acknowledged that they will keep the federal funds rate near zero for the near-term. The goal of the accommodative monetary policy is to achieve the Federal Reserve's dual mandate of maximum employment and stable prices. However, while the current accommodative monetary policy will keep short-term interest rates low, it does not have a direct effect on long-term interest rates. Long-term interest rates can increase even though monetary policy is accommodative. In fact, one of the leading indicators used by investors to determine what stage of the business cycle the economy is in is to review the yield curve which shows the difference between long-term and short-term interest rates. A flat or inverted yield curve is when long-term interest rates are equivalent to or less than short-term interest rates and usually occurs prior to a recession. Conversely, a steepening yield curve is when the difference between long-term interest rates and short-term interest rates is increasing and indicates that the economy is entering a period of economic expansion following a recession.[13]

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

A. Yes, I have. Specifically, I calculated the difference between the yield on the 10-year Treasury Bond and the yield on the 2-year Treasury Bond from January 2018 through October 2020. I selected the 10-year Treasury Bond yield to represent long-term interest rates and the yield on the 2-year Treasury Bond to represent short-term interest rates. As shown in Figure 3, the yield curve has been steepening and has increased to approximately 74 basis points, a level not seen

[13] "What is a yield curve", Fidelity.com. https://www.fidelity.com/learning-center/investment-products/fixed-income-bonds/bond-yield-curve

since the beginning of 2018. The steepening of the yield curve indicates that investors expect economic growth and inflation to increase in the near term. As a result, investors rotate out of long-term government bonds to avoid being locked into low interest rates for the long term. The steep yield curve signals that higher yields are required by investors to invest in long-term government bonds.

**Figure 3: 10-year Treasury Bond Yield Minus 2-year Treasury Bond Yield – January 2018 – October 2020**[14]


**Q. What have equity analysts said about the steepening of the yield curve?**

A. Several equity analysts have noted that the yield curve is steepening and is expected to continue to steepen into 2021, which is an indicator that the economy is entering the early expansion phase of the business cycle. For example, in a

[14] Federal Reserve Bank of St. Louis, 10-Year Treasury Constant Maturity Minus 2-Year Treasury Constant Maturity [T10Y2Y], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/T10Y2Y, October 31, 2020.

recent Bloomberg article, Morgan Stanley indicated that they expected a "V-shaped" economic recovery and therefore advised investors to underweight government bonds and overweight equities.[15] Similarly, in a recent Bloomberg article, Goldman Sachs noted the following:

> "As the economic recovery consolidates next year, we expect to see more differentiation across the curve, with policymakers committing to keeping front-end rates low, but higher expectations for real growth and inflation driving long-end rates higher," Goldman strategists including Zach Pandl wrote in the report, released Tuesday.
>
> "This should be especially true in the U.S. due to the Federal Reserve's new average inflation targeting framework, which commits the central bank to holding off on rate hikes until inflation has reached its target and is on track to overshoot it."[16]

Finally, Barron's noted that Citigroup also projected that the yield on the 10-year Treasury Bond is expected to increase in 2021, which prompted Citigroup's recommendation to overweight equities and favor cyclical sectors over defensive sectors, such as utilities.[17]

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

A. In a recent report, Fidelity noted that the utility sector has historically been one of

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[15] Ossinger, Joanna. "Morgan Stanley Says Go Risk-On and 'Trust the Recovery' in 2021." Bloomberg.com, 15 Nov. 2020, www.bloomberg.com/news/articles/2020-11-16/morgan-stanley-says-go-risk-on-and-trust-the-recovery-in-2021.

[16] McCormick, Liz. "Goldman Goes All-In for Steeper U.S. Yield Curves as 2021 Theme." Bloomberg.com, 10 Nov. 2020, www.bloomberg.com/news/articles/2020-11-10/goldman-goes-all-in-for-steeper-u-s-yield-curves-as-2021-theme.

[17] Keown, Callum. "10-Year Treasury Yields Will Rise Into 2021, Citi Says. This 'Aggressive' Equity Strategy Can Outperform." Barrons.com, 16 Nov. 2020, www.barrons.com/articles/10-year-treasury-yields-will-rise-into-2021-citi-says-this-aggressive-equity-strategy-can-outperform-51605543920.

the worst performing sectors during the early phase of the business cycle with a geometric average return of -10.5 percent.[18] This is important because if the utility sector underperforms over the near term, then the DCF model, which relies on historical averages of share prices, is likely to understate the cost of equity for Vectren North over the near term or the period that Company's rates will be in effect.

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

A. Utilities are considered a defensive sector and are therefore affected less by changes in the business cycle relative to other market sectors since consumers need energy during all phases of the business cycle. Therefore, utilities perform well during periods of uncertainty where the prospect of slowing economic growth increases. As Fidelity noted historically utilities outperform the market in latter and recession phases of the business cycle.[19] This relationship mostly held during the past few years as the share prices of utilities were bid up to unsustainable levels as investors responded to economic uncertainty due to the trade war between the U.S. and China and ultimately the COVID-19 pandemic.

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

A. Figure 4 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 4, the average P/E ratio for the proxy

[18] Fidelity Investments, "The Business Cycle Approach to Equity Sector Investing," 2020.
[19] Fidelity Investments, "The Business Cycle Approach to Equity Sector Investing," 2020.

companies increased from 2018 through early 2020 as a result of uncertainty in the market surrounding the trade dispute between the U.S. and China. The uncertainty resulted in investors shifting to defensive sectors such as utilities and consumer staples. Since that time investors have become increasingly concerned with the economic effects of COVID-19 and thus the share prices of utilities have declined; however, the average P/E ratio for the proxy companies in 2020 remains well above the average for 2018. As of October 31, 2020, the prices of utility stocks and thus the P/E ratios are still at unsustainable levels. For example, the average P/E ratio for the proxy group from February 19, 2020 through October 31, 2020 (i.e., the period since the decline in the market as a result of COVID-19) was 20.44 which is above the average for the period of 2000 through February 18, 2020 of 18.01. It is not reasonable to expect the proxy companies to maintain P/E ratios that are well above long-term averages over the long-term. As shown in Figure 4, Value Line projects that P/E ratios will decline over the period of 2020 through 2023. The decline in valuations projected by Value Line is consistent with the historical performance of utilities during the early expansion phase of the business cycle noted by Fidelity.

**Figure 4: Average Historical Proxy Group P/E Ratios[20,21]**


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

A. High valuations have the effect of depressing dividend yields, which results in overall lower estimates of the cost of equity resulting from the DCF model. The relatively low dividend yields demonstrated over the longer historical period imply that the ROE calculated using historical market data in the DCF model may understate the forward-looking cost of equity.

**Q. What is the significance of the current, high valuations in the utilities sector?**

A. While recently utilities have underperformed the broader market as a result of the economic effects of COVID-19, it is important to recognize the expected

[20] Bloomberg Professional, historical data through October 31, 2020, and projected data from Value Line Investment Survey, August 28, 2020.

[21] See Figure 6 for list of companies included in the proxy group.

performance of utilities over the near-term. For example, the recent underperformance of utilities was due in part to the excessive valuations that existed prior to the start of the pandemic. These valuations as noted above are still well above historical averages. As a result, Charles Schwab has classified the Utilities sector as "Underperform," noting that:

> The Utilities sector has tended to perform relatively better when concerns about slowing economic growth resurface, and to underperform when those worries fade. That's partly because of the sector's traditional defensive nature, given its steady revenues—people need water, gas and electric services during all phases of the business cycle. And low interest rates that typically come with a weak economy provide cheap funding for the large capital expenditures required in this industry.
>
> However, valuations have been driven up to well above their historical average in recent years, as investors reached for yield in this era of low interest rates. We think that these high valuations may decrease the sector's traditional defensive characteristics in the event of a market downturn.[22]

As Charles Schwab noted the utility sector underperforms in periods of economic growth; however, Charles Schwab also believes that given the high valuations of the utility sector even if volatility were to increase again that the utility sector might still underperform in a market setting where utilities had traditionally been overperformers.

Therefore, the current, high valuations in the utilities sector which is expected to result in underperformance over the near-term means that the DCF model results must be interpreted with extreme caution so as to not understate the cost of equity during the period that Vectren North's rates will be in effect.

[22] Charles Schwab, Utilities Sector Rating: Underperform, November 12, 2020.

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

A. 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. As shown in Figure 2 above, volatility as measured by the VIX is still above long-term averages. As a result, there is still uncertainty in the market which means greater risk and thus higher return requirements for investors. Further, while the Federal Reserve will keep short-term interest rates low over the next few years to support the economic recovery this does not indicate that long-term interest rates cannot increase. In fact, many equity analysts believe long-term interest rates will increase in 2021 as the economy enters the early expansion phase of the business cycle. Historically, the utility sector has underperformed the broader market as interest rates increase and the economy recovers.

Investors' current expectations regarding the economy highlights the importance of using forward-looking inputs in the models used to estimate the cost of equity. While the share prices of utilities have declined in response to the economic effects of the COVID-19 pandemic, current utility valuations are still well above the long-term average. The current high valuations result in low dividend yields for utilities, which means that DCF models using recent historical data likely underestimate investors' required return for Vectren North over the period that rates will be in effect. This consideration regarding the DCF model is important especially in light

of the expectation that the utility sector will underperform relative to the broader market as the economy recovers from the COVID-19 pandemic. Conversely, two out of three inputs (i.e., risk-free rate and market risk premium) in the CAPM can be estimated using forward-looking projections. Therefore, the CAPM is likely to capture more effectively the economic conditions expected by investors over the near-term. This highlights the importance of considering the results of each of the models to reflect investors' expectations of market conditions over the period that the rates established in this proceeding will be in effect.

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

**Q. Are there other factors that should be considered in determining the cost of equity for Vectren North?**

A. Yes. 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]

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

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

A. Yes. Each of the credit rating agencies has indicated that the TCJA is having an overall negative credit impact on regulated operating companies of 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]

**Q. How has Moody's responded to the increased risk for utilities resulting from the TCJA?**

A. 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 5: Credit Rating Downgrades Resulting from TCJA, the downgrades have continued in recent months.

**Figure 5: 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 |

[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.

| Utility | Rating Agency | Credit Rating before TCJA | Credit Rating after TCJA | Downgrade Date |
|---|---|---|---|---|
| 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 |

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

A. Yes. 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.

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

A. Yes. In a 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:

> [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

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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.

> 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 increased volatility associated with the uncertainty surrounding the economic effects of COVID-19.

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

A. 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. Therefore, it is important to allow the results of multiple ROE estimation models to inform the decision on the appropriate ROE for Vectren North in this proceeding.
- Recent market conditions reflect short-term exogenous shocks that are not expected to persist over the long term. As a result, the recent atypical market conditions do not reflect the market conditions that are expected to be present when the rates for Vectren North will be in effect.

[30] Id., at 43.

- As a result of the recent market volatility, 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 that will be in effect over 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 investor risk expectations for utilities. Therefore, it is increasingly important to consider a rate of return and capital structure that support the Company's cash flow metrics to enable Vectren North the ability to attract capital at reasonable terms during the period that rates will be in effect.

## V. PROXY GROUP SELECTION

**Q. Why have you used a group of proxy companies to estimate the cost of equity for Vectren North?**

A. In this proceeding, we focus 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 Vectren North'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 Vectren North in certain fundamental business and financial respects to serve as its "proxy" in the ROE estimation process.

Even if Vectren North 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 Vectren North.

**Q. Please provide a brief profile of Vectren North.**

A. Indiana Gas Company, Inc. is a wholly owned subsidiary Vectren Corporation, whose ultimate parent company is CenterPoint Energy. The Company provides regulated retail natural gas service in central, north central and southern Indiana. The Company's natural gas distribution operations in Indiana is projected to serve approximately 622,000 residential, commercial, industrial, and other[31] customers in 2021.[32] As of December 31, 2019, the Company's net utility natural gas plant in Indiana was approximately $1.28 billion.[33] In addition, the Company had total

[31] Includes other public authorities and interdepartmental natural gas customers.

[32] Data provided by Indiana Gas Company, Inc. ("Vectren North").

[33] *Ibid*. Net plant includes a net acquisition adjustment of $5.48 million.

natural gas revenues in Indiana in 2019 of approximately $589.6 million.[34] For CenterPoint Energy, Vectren North accounted for 16.0 percent of its total natural gas distribution operating sales revenue in 2019 (after the Company's parent company Vectren Corporation was acquired by CenterPoint Energy in February 2019).[35] Vectren North is currently rated BBB+ by Standard & Poor's with a negative outlook.[36]

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

A. I began with the group of 10 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;

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[34] Source: SNL Financial and FERC Form 1 and FERC Form 2 annual reports.



[35] Information provided by Vectren North.

[36] Moody's stopped its coverage of Vectren North in November 2019.

- 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.

**Q. What is the composition of your Natural Gas Utility Proxy Group?**

A. The screening criteria discussed above are shown in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 2 and resulted in a proxy group consisting of the companies shown in Figure 6 below.

**Figure 6: Natural Gas Utility 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 |

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

A. No. 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 both including and excluding NJR.

## VI. COST OF EQUITY ESTIMATION

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

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

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

A. 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, 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 the subject company (in the context of the proxy group), in particular.

**Q. What methods did you use to determine Vectren North's ROE?**

A. 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

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

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

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

A. Yes. Low interest rates and the effects of the investor "flight to quality" can be

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[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.

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

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

A. 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 Vectren North.

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. The projected Treasury Bond yields results in CAPM estimates that are more reflective of the market conditions that investors expect during the period that the Company's rates will be in effect.

**B. Constant Growth DCF Model**

**Q. Please describe the DCF approach.**

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

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

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.

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

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

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

A. 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 October 31, 2020.

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

A. 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.

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

A. 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.

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

A. 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.

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

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

### C. Discounted Cash Flow Model Results

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

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

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

A. Yes, I have. It is appropriate to exclude Constant Growth 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 A-.[39] The average yield on Moody's A-rated utility bonds for the 30 trading days ending October 31, 2020, was 2.92 percent.[40] As shown in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 3, I have eliminated Constant Growth DCF results lower than 7.00%

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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 16.2. In both cases, this corresponds to a rating of A- on the S&P scale.

[40] Source: Bloomberg Professional.

because such returns would provide equity investors a risk premium only 408 basis points above A-rated utility bonds.

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

A. Figure 7 summarizes the results of my DCF analyses. As shown in Figure 7, the mean DCF results for the Natural Gas Utility Proxy Group range from 10.02 percent to 10.58 percent.

**Figure 7: Constant Growth Discounted Cash Flow Results[41]**

| | Mean Low | Mean | Mean High |
|---|---|---|---|
| 30-Day Average | 9.77% | 10.58% | 11.89% |
| 90-Day Average | 10.02% | 10.32% | 11.63% |
| 180-Day Average | 9.75% | 10.02% | 11.33% |

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

A. 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. 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.

[41] See Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 1. For the Natural Gas Utility Proxy plus NJR, the mean ranges from 9.75 percent to 10.38 percent, and the mean high ranges from 11.02 percent to 11.66 percent.

## D. CAPM Analysis

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

A. 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 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:

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

Where:

$K_e$ = the required market ROE;

$\beta$ = 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:

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

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.

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

A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds, which is 1.53 percent;[42] (2) the average projected 30-year U.S. Treasury bond yield for the first quarter of 2021 through the first quarter of 2022, which is 1.80 percent;[43] and (3) the average projected 30-year U.S. Treasury bond yield for 2022 through 2026, which is 3.00 percent.[44]

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

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

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[42] Bloomberg Professional, as of October 31, 2020.

[43] Blue Chip Financial Forecasts, Vol. 39, No. 11, November 1, 2020, at 2.

[44] Blue Chip Financial Forecasts, Vol. 39, No. 6, June 1, 2020, at 14.

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

A. As shown on Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 4, I used the Beta coefficients for the proxy group companies as reported by Bloomberg and Value Line. Value Line Beta coefficients are calculated over 5 years of historical data. The Bloomberg Beta coefficients that I relied on were calculated over a 10-year basis.

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

A. 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 Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 4, based on S&P's five-year growth rate for the S&P 500 of 12.55 percent and dividend yield of 1.75 percent, the expected return on the S&P 500 Index is 14.41 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 11.41 percent to 12.88 percent.

**Q. How does the current expected market return of 14.55 percent compare to observed historical market returns?**

A. Given the range of annual equity returns that have been observed over the past century (shown in Figure 8), a current expected return of 14.55 is not unreasonable. In 46 out of the past 94 years (or roughly 50 percent of

observations), the realized equity return was at least 14.55 or greater**.**

**Figure 8: Realized U.S. equity market returns (1926-2019) [45]**


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

A. Yes. I have also considered the results of an ECAPM or alternatively referred to as the Zero-Beta CAPM[46] in estimating the cost of equity for Vectren North. The ECAPM calculates the product of the adjusted Beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium, without any effect from the Beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

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[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.

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

Where:

$k_e$ = the required market ROE;

$\beta$ = 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]

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.

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

A. As shown in Figure 9 (see also Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 4), my traditional CAPM analysis produces a range of returns from 11.90 percent to 12.70 percent for the Natural Gas Utility Proxy Group.[48] The ECAPM

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[47] Id., at 191.

[48] For the Natural Gas Utility Proxy Group plus NJR, the CAPM range is 11.93 percent to 12.78 percent.

analysis results range from 12.53 percent to 13.12 percent for the Natural Gas Utility Proxy Group.[49] Thus, the range established for the proxy group by the traditional CAPM and the ECAPM is 11.90 percent to 13.12 percent with a mean of 12.55 percent (Natural Gas Utility Proxy Group).

**Figure 9: CAPM Results[50]**

| | Current Risk-Free Rate (1.53%) | Q1 2021 – Q1 2022 Projected Risk-Free Rate (1.80%) | 2022-2026 Projected Risk-Free Rate (3.00%) |
|---|---|---|---|
| **CAPM** | | | |
| Value Line Beta | 12.47% | 12.52% | 12.70% |
| Bloomberg Beta | 11.90% | 11.95% | 12.19% |
| **ECAPM** | | | |
| Value Line Beta | 12.96% | 12.99% | 13.12% |
| Bloomberg Beta | 12.53% | 12.57% | 12.74% |

## E. Bond Yield Plus Risk Premium Analysis

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

A. 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.

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[49] For the Natural Gas Utility Proxy Group plus NJR, the ECAPM range is 12.55 percent to 13.19 percent.

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

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

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

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

A. 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

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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.

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.

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

A. As shown in Figure 10 below, from 1992 through October 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:

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

Where:

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

a = intercept term

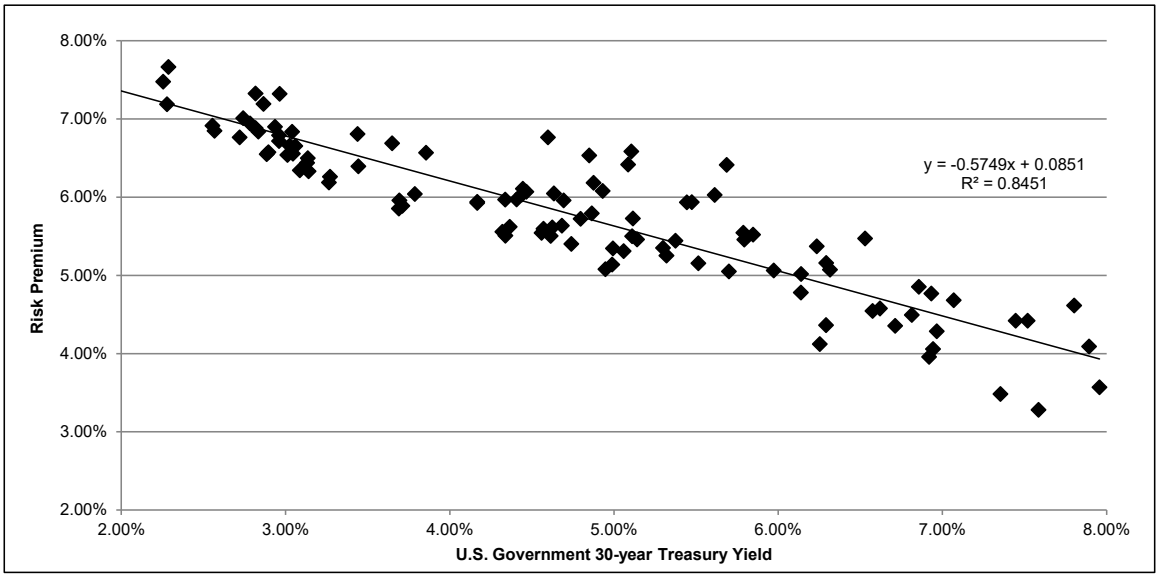
b = slope term

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

Data regarding allowed ROEs were derived from 664 natural gas utility rate cases from 1992 through October 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 1,058 natural gas cases, which were screened to eliminate limited issue rider cases, transmission cases, and cases that did not specify an authorized ROE. After applying those screening criteria, the analysis was based on data for 664 cases.

**Figure 10: Risk Premium Results**




As shown on Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 5, based on the current 30-day average of the 30-year U.S. Treasury bond yield (i.e., 1.53 percent), the risk premium would be 7.63 percent, resulting in an estimated ROE of 9.15 percent. Based on the near-term (Q1 2021 – Q1 2022) projections of the 30-year U.S. Treasury bond yield (i.e., 1.80 percent), the risk premium would be 7.47 percent, resulting in an estimated ROE of 9.27 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.

**Q. How did the results of the Bond Yield Risk Premium inform your recommended ROE for Vectren North?**

A. I have considered the results of the Bond Yield Risk Premium analysis in setting my recommended ROE for Vectren North. 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 considers this comparison by estimating the return expectations of investors based on the current and past ROE awards of gas utilities across the U.S.

## F. Expected Earnings Analysis

**Q. Have you considered any additional analysis to estimate the cost of equity for Vectren North?**

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

**Q. What is an Expected Earnings analysis?**

A. 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.

**Q. Have any regulators considered the use of an Expected Earnings analysis?**

A. Yes. 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 *[sic]*, 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' *[sic]* 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 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

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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 Prepared Direct Testimony.

[55] Ibid.

of the current economic environment still recovering from the Great Recession, characterized by some as the worst economy since the Great Depression.[56]

**Q. How did you develop the Expected Earnings approach?**

A. I relied on Value Line projections of the return on equity capital for the proxy companies for the period from 2023-2025. 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 Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 6, the Expected Earnings analysis for the Natural Gas Utility Proxy Group results in a mean of 9.53 percent.[57]

## VII. REGULATORY AND BUSINESS RISKS

**Q. Do the DCF, CAPM, and Expected Earnings results for the proxy group, taken alone, provide an appropriate estimate of the cost of equity for Vectren North?**

A. No. 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 falls within the range of results. These factors, which are discussed below, should be

[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 9.59 percent.

considered with respect to their overall effect on the Company's risk profile.

**A. Small Size Risk**

**Q. Please explain the risk associated with small size.**

A. 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]

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

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

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

companies.

**Q. How does Vectren North's natural gas distribution operations in Indiana compare in size to the proxy group companies?**

A. As of year-end 2019, Vectren North served approximately 592,400 residential, commercial, industrial, and other[59] natural gas customers, and had net utility natural gas plant in Indiana of approximately $1.28 billion, and expects to have net utility natural gas plant in Indiana in 2021 totaling $1.51 billion.[60,61] Vectren North's natural gas distribution operations in Indiana are substantially smaller than the median for the proxy group companies in terms of market capitalization. Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 7 provides the actual market capitalization for the proxy group companies and estimates the implied market capitalization for Vectren North (i.e., the implied market capitalization if Vectren North's natural gas distribution operations in Indiana were a stand-alone publicly-traded entity). To estimate the size of the Company's market capitalization, relative to the proxy group, I calculated Vectren North's projected

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59 Includes other public authorities and interdepartmental natural gas customers.

60 Source: SNL Financial and FERC Form 1 and FERC Form 2 annual reports.



61 Data provided by Vectren North. Net utility plant for 2019 includes $5.48 million in net acquisition adjustment, and 2021 net utility plant includes $4.49 million in net acquisition adjustment.

capital structure equity component of $840.97 million by multiplying Vectren North's 2021 expected net utility plant in service of approximately $1.51 billion by Vectren North's projected common equity ratio of 55.62 percent.[62]

I then applied the median market-to-book ratio for the proxy group of 1.48 to Vectren North's implied common equity balance and arrived at an implied market capitalization of approximately $1.24 billion, or 38.64 percent of the median market capitalization for the proxy group.[63]

**Q. How did you estimate the size premium for Vectren North?**

A. Given this relative size information, it is possible to estimate the impact of size on the ROE for Vectren North using Duff and Phelps data that estimates the stock risk premia based on the size of a company's market capitalization. As shown in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 7, the median market capitalization of the proxy group of approximately $3.22 billion corresponds to the fifth decile of the Duff and Phelps market capitalization data.[64] Based on Duff and Phelps' analysis, that decile corresponds to a size premium of 1.08 percent (i.e., 108 basis points). Vectren North's implied market capitalization of approximately $1.24 billion falls within the seventh decile**,** which comprises market capitalization levels up to $1.67 billion and corresponds to a size premium of 1.47 percent (i.e., 147 basis points)**.** The difference between those size premia is 39 basis points (i.e., 1.47 percent minus 1.08 percent)**.**

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[62] Excludes 15.29% cost free capital and 1.61% in other capital from total capital.

[63] For the proxy group plus NJR, the median market-to-book ratio is 1.47, and the implied market cap is $1.24 billion.

[64] For the proxy group plus NJR, the median market cap is $2.84 billion, which also corresponds to the fifth decile.

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

A. Yes. In fact, as shown in Exhibit 7.2 of Duff and Phelps' 2019 Valuation Handbook, OGE Energy Corp. had the largest market capitalization of the companies contained in the fourth decile.[65] Therefore, Duff and Phelps did include utility companies in its size risk premium study.

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

A. Yes, it is. In fact, Stéphane Chrétien and Frank Coggins in the article "Cost of Equity for Energy Utilities: Beyond the CAPM", [66] 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.[67] The article considered the CAPM, the Fama-French three-factor model and a model similar to the ECAPM 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 Chrétien and Coggins show the Beta coefficient on the size variable for the U.S. natural gas utility group was positive and statistically

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

66 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.

67 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.

significant indicating that small size risk.[68] This demonstrates that the traditional CAPM model would not account for risk associated with small size.

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

A. Yes. 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."[69] 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.[70] 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.[71] 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

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[68] 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.

[69] 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.

[70] Id., at 32 and 37.

[71] 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.

> the record, we find that 11.875% represents a fair ROE for ENSTAR.[72]

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.[73]

**Q. How have you considered the smaller size of Vectren North in your recommendation?**

A. While I have estimated the effect of Vectren North'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 Vectren North's natural gas distribution operations in Indiana 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.

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[72] Ibid.

[73] 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 (May 1, 2017), at 55.

**B. Flotation Costs**

**Q. What are flotation costs?**

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

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

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

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

A. Flotation costs are part of the invested costs of the utility, which are properly reflected on the balance sheet under "paid in capital." They are not current expenses, and, therefore, are not reflected on the income statement. Rather, like investments in rate base or the issuance costs of long-term debt, flotation costs are incurred over time. As a result, the great majority of a utility's flotation 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 Vectren North the opportunity to earn its required ROR in the future.

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

A. Suppose CenterPoint Energy, the ultimate parent company of Vectren North, issues stock with a value of $100, and an equity investor invests $100 in CenterPoint Energy 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, CenterPoint Energy ends up with only $97 of issuance proceeds, rather than the $100 the investor contributed. CenterPoint Energy invests that $97 in plant used to serve its customers, which becomes part of rate base. Absent a flotation cost adjustment, the investor will thereafter earn a return on only the $97 invested in rate base, even though she contributed $100. Making a small flotation cost adjustment gives the investor a reasonable opportunity to earn the authorized return, rather than the lower return that results when the authorized return is applied to an amount less than what the investor contributed.

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

A. No. As shown in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 8, CenterPoint Energy closed on equity issuances of approximately $1.90 billion, $326.37 million, and $289.80 million (for a total of 119.1 million shares of common stock) in September 2018, June 2010, and September 2009, 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.

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

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

> 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.[74]

**Q. How did you calculate the flotation costs for Vectren North?**

A. My flotation cost calculation is based on the costs of issuing equity that were incurred by CenterPoint Energy in its three most recent common equity issuances, as well as three most recent common equity issuances by Vectren North's parent company, Vectren Corporation, prior to the CenterPoint Energy acquisition. Those issuance costs were applied to my proxy group. Applying the actual issuance costs for Vectren North provided in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 8, to the DCF analysis, the flotation costs are estimated to be 0.13 percent (i.e., 13 basis points).[75]

**Q. Has the Commission provided any guidance on the approval of flotation costs?**

A. Yes. The Commission has approved inclusion of flotation costs, including a 2004 Order, which agreed to an adjustment to the return on equity to account for actual flotation costs incurred by the company. In that proceeding, the Commission ordered a 15-basis-point upward adjustment to the cost of equity.[76] In a later Order, the Commission stated that while adjustments such as flotation costs are often inappropriate to include in cost of equity, it reiterated that the "Commission will only

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

[75] For the proxy group plus NJR, the flotation costs are estimated to be 0.13 percent (i.e., 13 basis points).

[76] Cause No. 42359. Indiana Utility Regulatory Commission Order at 43. PSI Energy, Inc. Petition for Authority to Increase Its Rates. May 18, 2004.

allow flotation cost adjustments when they are based on verifiable actual costs so that the reasonableness and appropriateness of the costs may be examined."[77] As detailed above, my flotation cost analysis includes actual flotation costs of the parent companies, which is appropriate according to multiple previous Commission orders.

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

A. No. 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, and Expected Earnings analyses.

## C. Capital Expenditures

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

A. The Company's current projections for 2021 through 2025 include approximately $1.05 billion in capital investments for the period.[78] Based on the Company's net utility plant of approximately $1.28 billion as of December 31, 2019,[79] the $1.05 billion of anticipated capital expenditures are approximately 82.05 percent of Vectren North's net utility plant as of December 31, 2019.

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[77] Cause No. 44075. Indiana Utility Regulatory Commission Order at 43. Indiana Michigan Power Company Petition for Authority to Increase its Rates. February 13, 2013.

[78] Data provided by Vectren North for Capital Expenditures 2021-2025.

[79] Data provided by Vectren North.

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

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

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

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

> When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were 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.[80]

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

Therefore, to the extent that Vectren North'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.

**Q. Does Vectren North have a capital tracking mechanism to recover the costs associated with its capital expenditures plan between rate cases?**

A. Vectren North currently has certain investment tracking mechanisms including the Compliance and System Improvement Adjustment ("CSIA"), which currently recovers 56 percent (and averaging 70 percent between 2022-2025) of the revenue requirement on investments and expenses associated with complying with federal mandates and the Transmission and Distribution System Infrastructure Charge ("TDSIC"), which allows for the recovery of certain safety, reliability and modernization investments in the natural gas distribution system. The TDSIC is expiring in 2020.

**Q. How do the capital investment trackers that have been authorized for Vectren North compare with the capital investment and other trackers that have been implemented by the proxy companies?**

A. As shown in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 10, 12 out of 18 (or 66.67 percent) of the operating companies held by the Natural Gas Utility Proxy Group recover costs through capital tracking mechanisms. Therefore, to the extent that Vectren North were to continue the TDSIC or other capital investment trackers, the financial risk for the Company would be comparable to the proxy group. In the event that the TDSIC was not renewed, Vectren North would have higher risk than the proxy group companies.

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

A. The Company's capital expenditure requirements as a percentage of net utility plant are significant and will continue over the next few years. Therefore, absent the ability to recover these costs between rate proceedings, Vectren North's significant capital expenditures plan 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

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

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

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

A. 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.[81]

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."[82] 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.[83]

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

A. 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 adapts to that environment are the most important credit considerations."[84]

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

[82] 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.

[83] Id., at 1.

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

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."[85]

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

A. Yes. I have evaluated the regulatory framework in Indiana on four factors that are important in terms of providing a regulated utility an opportunity to earn its authorized ROE. These are: 1) test year convention (i.e., forecast vs. historical); 2) method for determining rate base (i.e., average vs. year-end); 3) use of revenue decoupling mechanisms or other clauses that mitigate volumetric risk; and 4) prevalence of capital cost recovery between rate cases. The results of this regulatory risk assessment are shown in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 10 and are summarized below.

Test year convention: Vectren North can use a future test year in Indiana, which is consistent with 7 out of 18 (39 percent) of the operating companies held by the Natural Gas Utility Proxy Group,[86] which provide service in jurisdictions that use a fully or partially forecast test year.

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[85] Ibid.

[86] The Natural Gas Utility Proxy includes six companies and excludes New Jersey Resources Corporation.

Rate Base: The Company's rate base in Indiana is determined using the year end rate base method, similar to 11 out of 18 (61 percent) of the operating companies held by the Natural Gas Utility Proxy Group,[87] 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: Vectren North does have some protection against volumetric risk in Indiana, with full revenue decoupling mechanisms. This is consistent with 16 out of 18 (89 percent) of the operating companies held by the Natural Gas Utility Proxy Group[88] that also have some form of protection against volumetric risk.

Capital Cost Recovery: Vectren North has capital tracking mechanisms available to recover selected capital investment costs between rate cases, consistent with 12 of 18 (67 percent) of the operating companies held by the Natural Gas Utility Proxy.[89]

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

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

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87 Ibid.
88 Ibid.
89 Ibid.

Considering the regulatory adjustment mechanisms, many of the companies in the proxy group have cost recovery mechanisms that are similar to those implemented by Vectren North (through forecasted test years, year-end rate base, cost recovery trackers, and revenue stabilization mechanisms) in Indiana. In addition, the RRA jurisdictional ranking and the S&P credit supportiveness ranking for Indiana indicates average risk level. For that reason, I conclude that the regulatory risks for Vectren North are comparable to the proxy group.

## VIII. CAPITAL STRUCTURE

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

A. 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.

**Q. What is Vectren North's projected capital structure?**

A. The Company's projection establishes a capital structure consisting of 55.62

percent common equity and 44.38 percent long-term debt. [90]

**Q. Did you conduct any analysis to determine if this projected equity ratio was reasonable?**

A. Yes, I did. I reviewed the Company's projected 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.

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

A. 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.[91] My analysis of the capital structures of the proxy group companies is provided in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 11. As shown in Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 11, the equity ratios for the Natural Gas Utility Proxy

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[90] Excludes 15.29% cost free capital and 1.61% in other capital from total capital.

[91] Source: SNL Financial and FERC Form 1 and FERC Form 2 annual reports.

Group ranged from 50.03 percent to 66.58 percent, with an average of 58.88 percent.[92] Vectren North's projected equity ratio of 55.62 is near the average equity ratio for the utility operating subsidiaries of the proxy groups and is therefore reasonable.

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

A. Yes. 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 Vectren North in the context of this proceeding.

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

A. Yes. The equity ratio is the primary indicator of financial risk for a regulated utility such as Vectren North. 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.

[92] For the Natural Gas Utility Proxy Group plus NJR, the range is also 50.03 percent to 66.58 percent, and with an average of 58.88 percent.

**Q. What is your conclusion regarding an appropriate equity ratio for Vectren North?**

A. Considering the actual capital structures of the proxy group operating companies, I believe that Vectren North's projected common equity ratio of 55.62 percent is reasonable. The projected equity ratio is well within 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

**Q. What is your conclusion regarding a fair ROE for Vectren North?**

A. Figure 11 below provides a summary of my analytical results for the proxy group.[93] Based on these results, the qualitative analyses presented in my Prepared Direct Testimony, the business and financial risks of Vectren North 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 10.15 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

[93] For results based on the proxy group plus NJR, please see Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 1.

to customers in Indiana.

**Figure 11: Summary of Analytical Results [94, 95]**

| Constant Growth DCF | | | |
|---|---|---|---|
| | Mean Low | Mean | Mean High |
| 30-Day Average | 9.77% | 10.58% | 11.89% |
| 90-Day Average | 10.02% | 10.32% | 11.63% |
| 180-Day Average | 9.75% | 10.02% | 11.33% |
| Constant Growth Average | 9.85% | 10.31% | 11.61% |
| **CAPM** | | | |
| | Current 30-day Average Treasury Bond Yield | Near-Term Blue Chip Forecast Yield | Long-Term Blue Chip Forecast Yield |
| Value Line Beta | 12.47% | 12.52% | 12.70% |
| Bloomberg Beta | 11.90% | 11.95% | 12.19% |
| **ECAPM** | | | |
| Value Line Beta | 12.96% | 12.99% | 13.12% |
| Bloomberg Beta | 12.53% | 12.57% | 12.74% |
| **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 | 9.15% | 9.27% | 9.78% |
| **Expected Earnings Analysis** | | | |
| Expected Earnings Analysis | 9.53% | | |

**Q. What is your conclusion with respect to Vectren North's projected capital structure?**

A. My conclusion is that Vectren North's projected capital structure consisting of 55.62 percent common equity and 44.38 percent long-term debt is reasonable when compared to the capital structures of the companies in the proxy group and

[94] The analytical results included in Figure 11 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.

[95] Results displayed are for the proxy group. For results based on the proxy group plus NJR, please see Petitioner's Exhibit No. 12, Attachment AEB-2, Schedule 1.

taking in consideration the impact of the TCJA on the cash flows.[96]

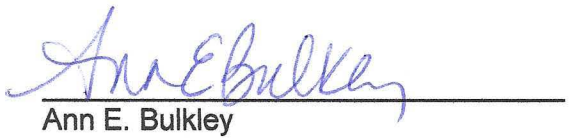
**Q. Does this conclude your Prepared Direct Testimony?**

A. Yes, it does.

[96] Excludes 15.29% cost free capital and 1.61% in other capital from total capital.

## VERIFICATION

I, Ann E. Bulkley, affirm under the penalties of perjury that the forgoing representations of fact in my Direct Testimony are true to the best of my knowledge, information and belief.



Ann E. Bulkley

Dated: December 18, 2020

**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** | | | | |
| Wisconsin Electric Power Company | 08/20 | Wisconsin Electric Power Company | Docket No. EL20-57-000 | Return on Equity |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| Panhandle Eastern Pipe Line Company, LP | 10/19 | Panhandle Eastern Pipe Line Company, LP | Docket Nos. RP19-78-000 RP19-78-001 | Return on Equity |
| Panhandle Eastern Pipe Line Company, LP | 08/19 | Panhandle Eastern Pipe Line Company, LP | Docket Nos. RP19-1523 | Return on Equity |
| Sea Robin Pipeline Company LLC | 11/18 | Sea Robin Pipeline Company LLC | Docket# RP19-352-000 | Return on Equity |
| Tallgrass Interstate Gas Transmission | 10/15 | Tallgrass Interstate Gas Transmission | RP16-137 | Return on Equity |
| **Idaho Public Utilities Commission** | | | | |
| PacifiCorp d/b/a Rocky Mountain Power | 06/20 | PacifiCorp d/b/a Rocky Mountain Power | PAC-E-20-03 | Return on Equity |
| **Indiana Utility Regulatory Commission** | | | | |
| Southern Indiana Gas and Electric Company | 10/20 | Southern Indiana Gas and Electric Company | Cause No. 45447 | Return on Equity |
| Indiana and Michigan American Water Company | 09/18 | Indiana and Michigan American Water Company | IURC Cause No. 45142 | Return on Equity |
| Northern Indiana Public Service Company | 09/17 | Northern Indiana Public Service Company | Cause No. 44988 | Fair Value |
| Indianapolis Power and Light Company | 12/16 | Indianapolis Power and Light Company | Cause No.44893 | Fair Value |
| Northern Indiana Public Service Company | 10/15 | Northern Indiana Public Service Company | Cause No. 44688 | Fair Value |
| Indianapolis Power and Light Company | 09/15 | Indianapolis Power and Light Company | Cause No. 44576 Cause No. 44602 | Fair Value |
| Kokomo Gas and Fuel Company | 09/10 | Kokomo Gas and Fuel Company | Cause No. 43942 | Fair Value |
| Northern Indiana Fuel and Light Company, Inc. | 09/10 | Northern Indiana Fuel and Light Company, Inc. | Cause No. 43943 | Fair Value |
| **Iowa Department of Commerce Utilities Board** | | | | |
| Iowa-American Water Company | 08/20 | Iowa-American Water Company | Docket No. RPU-2020-0001 | Return on Equity |
| **Kansas Corporation Commission** | | | | |
| Atmos Energy Corporation | 08/15 | Atmos Energy Corporation | Docket No. 16-ATMG-079-RTS | Return on Equity |
| **Kentucky Public Service Commission** | | | | |
| Kentucky American Water Company | 11/18 | Kentucky American Water Company | Docket No. 2018-00358 | Return on Equity |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| **Maine Public Utilities Commission** | | | | |
| Central Maine Power | 10/18 | Central Maine Power | Docket No. 2018-00194 | 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<br>Docket No. F-325472<br>Docket No. F-325473<br>Docket No. F-325474 | Valuation of Electric Generation Assets |
| **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** | | | | |
| Otter Tail Power Company | 11/20 | Otter Tail Power Company | E017/GR-20-719 | Return on Equity |
| Allete, Inc. d/b/a Minnesota Power | 11/19 | Allete, Inc. d/b/a Minnesota Power | E015/GR-19-442 | Return on Equity |
| CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas | 10/19 | CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas | G-008/GR-19-524 | Return on Equity |
| Great Plains Natural Gas Co. | 09/19 | Great Plains Natural Gas Co. | Docket No. G004/GR-19-511 | Return on Equity |
| Minnesota Energy Resources Corporation | 10/17 | Minnesota Energy Resources Corporation | Docket No. G011/GR-17-563 | Return on Equity |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| **Missouri Public Service Commission** | | | | |
| Missouri American Water Company | 06/20 | Missouri American Water Company | Case No. WR-2020-0344<br>Case No. SR-2020-0345 | Return on Equity |
| Missouri American Water Company | 06/17 | Missouri American Water Company | Case No. WR-17-0285<br>Case No. SR-17-0286 | Return on Equity |
| **Montana Public Service Commission** | | | | |
| Montana-Dakota Utilities Co. | 06/20 | Montana-Dakota Utilities Co. | D2020.06.076 | Return on Equity |
| Montana-Dakota Utilities Co. | 09/18 | Montana-Dakota Utilities Co. | D2018.9.60 | Return on Equity |
| **New Hampshire - Board of Tax and Land Appeals** | | | | |
| Public Service Company of New Hampshire d/b/a Eversource Energy | 11/19<br>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<br>Generating Assets |
| **New Hampshire Public Utilities Commission** | | | | |
| Public Service Company of New Hampshire | 05/19 | Public Service Company of New Hampshire | DE-19-057 | Return on Equity |
| **New Hampshire-Merrimack County Superior Court** | | | | |
| Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE | 04/18 | Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE | 220-2012-CV-1100 | Valuation of Utility Property |
| **New Hampshire-Rockingham Superior Court** | | | | |
| Eversource Energy | 05/18 | Public Service Commission of New Hampshire | 218-2016-CV-00899<br>218-2017-CV-00917 | Valuation of Utility Property |
| **New Jersey Board of Public Utilities** | | | | |
| Public Service Electric and Gas Company | 10/20 | Public Service Electric and Gas Company | EO18101115 | Return on Equity |
| New Jersey American Water Company, Inc. | 12/19 | New Jersey American Water Company, Inc. | WR19121516 | Return on Equity |
| Public Service Electric and Gas Company | 04/19 | Public Service Electric and Gas Company | EO18060629<br>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<br>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 |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| 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** | | | | |
| Central Hudson Gas and Electric Corporation | 08/20 | Central Hudson Gas and Electric Corporation | Electric 20-E-0428<br>Gas 20-G-0429 | Return on Equity |
| Niagara Mohawk Power Corporation | 07/20 | National Grid USA | Case No. 20-E-0380<br>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<br><br>Rochester Gas and Electric | 05/19 | New York State Electric and Gas Company<br><br>Rochester Gas and Electric | 19-E-0378<br>19-G-0379<br>19-E-0380<br>19-G-0381 | Return on Equity |
| Brooklyn Union Gas Company d/b/a National Grid NY<br>KeySpan Gas East Corporation d/b/a National Grid | 04/19 | Brooklyn Union Gas Company d/b/a National Grid NY<br>KeySpan Gas East Corporation d/b/a National Grid | 19-G-0309<br>19-G-0310 | Return on Equity |
| Central Hudson Gas and Electric Corporation | 07/17 | Central Hudson Gas and Electric Corporation | Gas 17-G-0460<br>Electric 17-E-0459 | Return on Equity |
| Niagara Mohawk Power Corporation | 04/17 | National Grid USA | Case No. 17-E-0238<br>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<br>Case No. 15-G-0059 | Return on Equity |
| New York State Electric and Gas Company<br>Rochester Gas and Electric | 05/15 | New York State Electric and Gas Company<br>Rochester Gas and Electric | Case No. 15-G-0284<br>Case No. 15-E-0285<br>Case No. 15-G-0286 | Return on Equity |
| **North Dakota Public Service Commission** | | | | |
| Montana-Dakota Utilities Co. | 08/20 | Montana-Dakota Utilities Co. | C-PU-20-379 | Return on Equity |
| Northern States Power Company | 12/12 | Northern States Power Company | C-PU-12-813 | Return on Equity |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| Northern States Power Company | 12/10 | Northern States Power Company | C-PU-10-657 | Return on Equity |
| **Oklahoma Corporation Commission** | | | | |
| Arkansas Oklahoma Gas Corporation | 01/13 | Arkansas Oklahoma Gas Corporation | Cause No. PUD 201200236 | Return on Equity |
| **Oregon Public Service Commission** | | | | |
| PacifiCorp d/b/a Pacific Power & Light | 02/20 | PacifiCorp d/b/a Pacific Power & Light | Docket No. UE-374 | Return on Equity |
| **Pennsylvania Public Utility Commission** | | | | |
| American Water Works Company Inc. | 04/20 | Pennsylvania-American Water Company | Docket No. R-2020-3019369 (water) Docket No. R-2020-3019371 (wastewater) | Return on Equity |
| American Water Works Company Inc. | 04/17 | Pennsylvania-American Water Company | Docket No. R-2017-2595853 | Return on Equity |
| **South Dakota Public Utilities Commission** | | | | |
| Northern States Power Company | 06/14 | Northern States Power Company | Docket No. EL14-058 | Return on Equity |
| **Texas Public Utility Commission** | | | | |
| Southwestern Public Service Commission | 08/19 | Southwestern Public Service Commission | Docket No. D-49831 | Return on Equity |
| Southwestern Public Service Company | 01/14 | Southwestern Public Service Company | Docket No. 42004 | Return on Equity |
| **Utah Public Service Commission** | | | | |
| PacifiCorp d/b/a Rocky Mountain Power | 05/20 | PacifiCorp d/b/a Rocky Mountain Power | Docket No. 20-035-04 | Return on Equity |
| **Virginia State Corporation Commission** | | | | |
| Virginia American Water Company, Inc. | 11/18 | 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 |

| SPONSOR | DATE | CASE/APPLICANT | DOCKET /CASE NO. | SUBJECT |
|---|---|---|---|---|
| **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 |

Petitioner's Exhibit No. 12
Attachment AEB-2
Vectren South

Petitioner's Exhibit No. 12, Attachment AEB-2 provided in Excel format