Evergy Kansas Metro
23-EKCE-775-RTS
Depreciation Rates - Stipulation

PLANT ACCOUNT	PLANT ACCOUNT DESCRIPTION	STIPULATED DEPR RATE		
GENERAL PLANT				
39000	Gen-Structures & Improvements-Elec	2.12%		
39000	Gen-Structures & Improvements-Elec - Wolf Creek	3.83%		
39000	Gen-Structures & Improvements-Elec - Composite Rate	2.14%		
39100	Gen-Office Furniture & Equip-Elec	4.00%	Gen Plt Amort	25 yr
39101	Gen-Office Furniture & Equip- Elec - Wolf Creek	4.00%	Gen Plt Amort	25 yr
39102	Gen-Office Furniture-Computer	20.00%	Gen Plt Amort	5 yr
39200	Gen-Transportation Equip- Autos -Elec	9.37%		
39201	Gen-Transportation Equip- Light Trucks -Elec	10.75%		
39202	Gen-Transportation Equip- Heavy Trucks -Elec	9.61%		
39203	Gen-Transportation Equip- Tractors -Elec	7.84%		
39204	Gen-Transportation Equip- Trailers-Elec	3.82%		
39300	Gen-Stores Equip-Elec	4.00%	Gen Plt Amort	25 yr
39400	Gen-Tools, Shop and Garage Equip-Elec	4.00%	Gen Plt Amort	25 yr
39500	Gen-Laboratory Equip-Elec	4.00%	Gen Plt Amort	25 yr
39600	Gen-Power Operated Equip-Elec	4.83%		
39700	Gen-Communication Equip-Elec	6.67%	Gen Plt Amort	15 yr
39701	Gen-Communication Equip-Elec - Wolf Creek	6.67%	Gen Plt Amort	15 yr
39800	Gen-Misc Equip	6.67%	Gen Plt Amort	15 yr

Security Tracker Cost Definition

The Security Tracker is for incremental costs spent to meet continuously emerging security threats to critical infrastructure and growing regulatory requirements for protection of critical infrastructure, inclusive of Department of Defense ("DOD"), Department of Homeland Security ("DHS"), Department of Energy ("DOE"), Nuclear Regulatory Commission ("NRC"), Securities and Exchange Commission ("SEC"), Federal Communications Commission ("FCC"), Federal Energy Regulatory Commission ("FERC"), North American Electric Reliability Corporation ("NERC"), etc., or security needs. Historically, the impacts to Evergy have been heavily focused on cybersecurity and the growing attack surface in cyber warfare that require the critical infrastructure industries to invest in security to protect the electric system. Today, the threats to critical infrastructure persist and continue to grow inclusive of physical security. These regulatory obligations, such as NERC Critical Infrastructure Protection ("CIP") Standards, are publicly available and subject to federal audits. Security needs are driven by many government entities, threat intelligence and analytics as well as industry best practices.

Non-Labor O&M Calculation

Tracker Baseline EKM:

The specific CIP / Cybersecurity Tracker baseline amount is set at the sum of the costs from July 1, 2022, to June 30, 2023. amounting to $4,184,570 on a total Evergy Metro basis. This baseline amount of non-labor costs is considered included in EKM's s retail revenue requirement resulting from this rate proceeding, the 23-775 Docket. All non-labor CIP / Cybersecurity compliance costs identified as the Company continues to incur costs for protection of its critical infrastructure assets will be tracked against this baseline amount.

Regulatory Asset/Regulatory Liability: Actual CIP / Cybersecurity costs incurred for the 12-month period beginning with the first day of the month closest to the effective date of rates in this 23-775 Docket through the calendar year from that day, and each 12-month period beginning thereafter, will be compared to the baseline cost amount identified above. Such costs will be supported by vendor invoices. If the 12-month period cost is in excess of the baseline cost, then a regulatory asset will be established. If the 12-month period cost is below the baseline cost, then a regulatory liability will be established. In the event that a subsequent full general rate case update period occurs prior to the end of a 12-month tracking period, the baseline costs will be converted on a straight-line basis to monthly amounts. The baseline monthly amounts will be compared to the actual costs and a regulatory asset or regulatory liability will be established using the principles described above. These regulatory assets and/or liabilities will then be considered for recovery through amortization to cost of service in the Company's next general rate case.

Sunset Provision

The Security Tracker will terminate upon completion of the first Evergy full general rate proceeding filed on or after January 1, 2028. If Evergy wishes to continue the Security Tracker beyond that time, Evergy must propose such action to the Commission. In that proceeding, Evergy may request the Security Tracker mechanism be reauthorized and continued. Evergy will bear the burden of showing the extension of the Security Tracker is in the public interest and will result in just and reasonable rates. All other parties retain the right to object to an extension of the Security Tracker in that future proceeding.

EKM Regulatory Assets & Liabilities
Docket No. 23-EKCE-775-RTS

Adjustment	Asset/Liability	Description	Total Balance To Be Amortized	Period (Year)	Start Date	End Date	Annual Amortization	True-Up Balance @6/30/23	
Removed from revenue requirement									
CS-80	Asset	2018 Rate Case Expenses	632,272	5	01/2019	12/2023	0	63,227	
CS-88	Liability	CIPS/Cybersecurity Tracker	(2,182,363)	5	01/2019	12/2023	0	(218,236)	
CS-110	Asset	2011 Flood Expense	924,928	10	01/2013	12/2022	0	0	
CS-130	Asset	Customer Migration	191,125	5	01/2019	12/2023	0	19,113	
CS-131	Liability	LaCygne Budgeted Plant	(1,985,865)	5	01/2019	12/2023	0	(198,587)	
CS-132	Liability	LaCygne Depreciation Deferral	(11,666)	5	01/2019	12/2023	0	(1,167)	
CS-133	Liability	Wolf Creek Budgeted Plant	(83,350)	5	01/2019	12/2023	0	(8,335)	
Continued from prior rate case									
RB-25/CS-111	Asset	Iatan 1 and Common Vintage 1	2,855,631	47	12/2010	11/2057	60,758	2,091,091	
RB-25/CS-111	Asset	Iatan 1 and Common Vintage 2	631,250	44.9	01/2013	11/2057	14,059	483,631	
RB-27/CS-113	Asset	La Cygne Depreciation Deferral	2,957,141	25	10/2015	09/2040	118,286	2,040,427	
RB-55	Liability	Emission Allowance	(36,987,232)	22	12/2010	11/2032	(1,681,238)	(15,810,094)	
CS-95	Asset	Merger Transition Costs	7,692,018	10	01/2019	12/2028	769,202	4,230,610	
Proposed in current rate case									
CS-29	Asset	COVID AAO Expenses	2,379,060	3	01/2024	12/2026	793,020	2,379,060	(A)
CS-80	Asset	2023 Rate Case Expenses	1,794,495	3	01/2024	12/2026	598,165	1,794,495	(A)
CS-88	Liability	CIPS/Cybersecurity Tracker	(8,154,199)	3	01/2024	12/2026	(2,718,066)	(8,154,199)	
CS-118	Asset	Unrecovered Reserve - Meter Replacement	2,509,511	3	01/2024	12/2026	836,504	2,509,511	
CS-134	Asset	Loss Revenue - TOU & RD	121,655	3	01/2024	12/2026	40,552	121,655	
CS-135	Asset	TOU, RD, and Residential DG Costs	1,719,199	3	01/2024	12/2026	573,066	1,719,199	
CS-137	Liability	Environmental Insurance Settlements	(3,084,772)	3	01/2024	12/2026	(1,028,257)	(3,084,772)	
CS-138	Asset	Electrification	256,545	3	01/2024	12/2026	85,515	501,997	

(A) Not included in the regulatory asset/liability tracking

EXHIBIT EKM - 3

Evergy Kansas Metro – Bright Lines Mitigation Population – Account #/Service Agreement ID#

1791460348-1798648902	8655603005-8650877341	3182329890-3181009774	5546074392-5545574021
8088021143-8080581135	0702282196-0700104669	0473051688-0471483317	1401394489-1400717624
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4043833910-4045920863	2218311299-2211791006	4241905596-4241301295	2945207046-2941322201
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EXHIBIT EKM - 3

Evergy Kansas Metro – Bright Lines Mitigation Population – Account #/Service Agreement ID#

8751621148-8750439769	1302102536-1307623071
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6344785048-6340183510	4523851113-4524381374
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0579958686-0579857894	4384619564-4384388223
9129398674-9120543122	2809141103-2800431942

CERTIFICATE OF SERVICE

23-EKCE-775-RTS

I, the undersigned, certify that a true copy of the attached Order has been served to the following by means of electronic service on 11/21/2023.

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/S/ KCC Docket Room
KCC Docket Room

STATE OF MAINE PUBLIC UTILITIES COMMISSION

DOCKET NO. 2022-00152

CENTRAL MAINE POWER

CENTRAL MAINE POWER COMPANY
2022 DISTRIBUTION RATE CASE FILING

RETURN ON EQUITY AND CAPITAL STRUCTURE

August 11, 2022

Testimony and Exhibits of

Ann E. Bulkley

The Brattle Group

On behalf of
Central Maine Power Company
83 Edison Drive
Augusta, ME 04336

Table of Contents

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, affiliation, and business address.

A. My name is Ann E. Bulkley. I am a Principal with The Brattle Group ("Brattle"), located at One Beacon Street, Boston, Massachusetts, 02108.

Q. On whose behalf are you submitting this testimony?

A. I am submitting this testimony before the Maine Public Utilities Commission ("Commission") on behalf of Central Maine Power Company ("CMP" or the "Company"), which is a wholly-owned subsidiary of Avangrid, Inc. ("Avangrid"), a diversified energy and utility company.

Q. Please summarize your work experience and educational background.

A. My Curriculum Vitae ("CV") is set forth in Exhibit AEB-1.

Q. Are you sponsoring any exhibits in support of your testimony?

A. Yes. My analyses and recommendations are supported by the data presented in Exhibit AEB-2 through Exhibit AEB-13, which were prepared by me or under my direction.

II. PURPOSE AND OVERVIEW OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present evidence and provide a recommendation regarding the appropriate Return on Equity ("ROE")[1] for the Company to be used for ratemaking purposes. My recommendations are reflective of today's record inflation, which is expected to persist in the near term and increase the operating risk of the utility, as well as the current increasing interest rate environment, which is likewise expected to

[1] Throughout this testimony, the terms "ROE" and "cost of equity" are used interchangeably.

persist in the near term in response to inflation. I also address the appropriateness of the Company's capital structure.

Q. How is the remainder of your testimony organized?

A. The remainder of my testimony is organized as follows. Section III provides a summary of my analyses and conclusions. Section IV reviews the regulatory guidelines pertinent to the development of the cost of capital. Section V discusses current and projected capital market conditions and the effect of those conditions on CMP's cost of equity. Section VI explains my selection of a proxy group of electric and natural gas utilities. Section VII describes my analyses and the analytical basis for the recommendation of the appropriate ROE for CMP. Section VIII 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 IX addresses the Company's capital structure. Section X provides an assessment of the effect of a Multi-Year Rate Plan on the ROE. Section XI presents my conclusions and recommendations for the market cost of equity.

III. SUMMARY OF ANALYSIS AND CONCLUSIONS

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

A. As discussed in more detail in Section VII, 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 Bond Yield Plus Risk Premium analysis. My recommendation also takes into consideration: (1) the Company's capital expenditure requirements; and (2) the regulatory environment in which the Company operates. 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. Finally, I considered the Company's projected capital structure as compared to the capital structures of the proxy companies.[2]

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 CMP, 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.
- 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.

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

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

Q. Please explain how you considered these factors.

A. After considering these factors and the results of my analyses, I relied on the range of results produced by the Constant Growth DCF model, the CAPM and ECAPM, and the Bond Yield Plus Risk Premium analysis, which are shown in

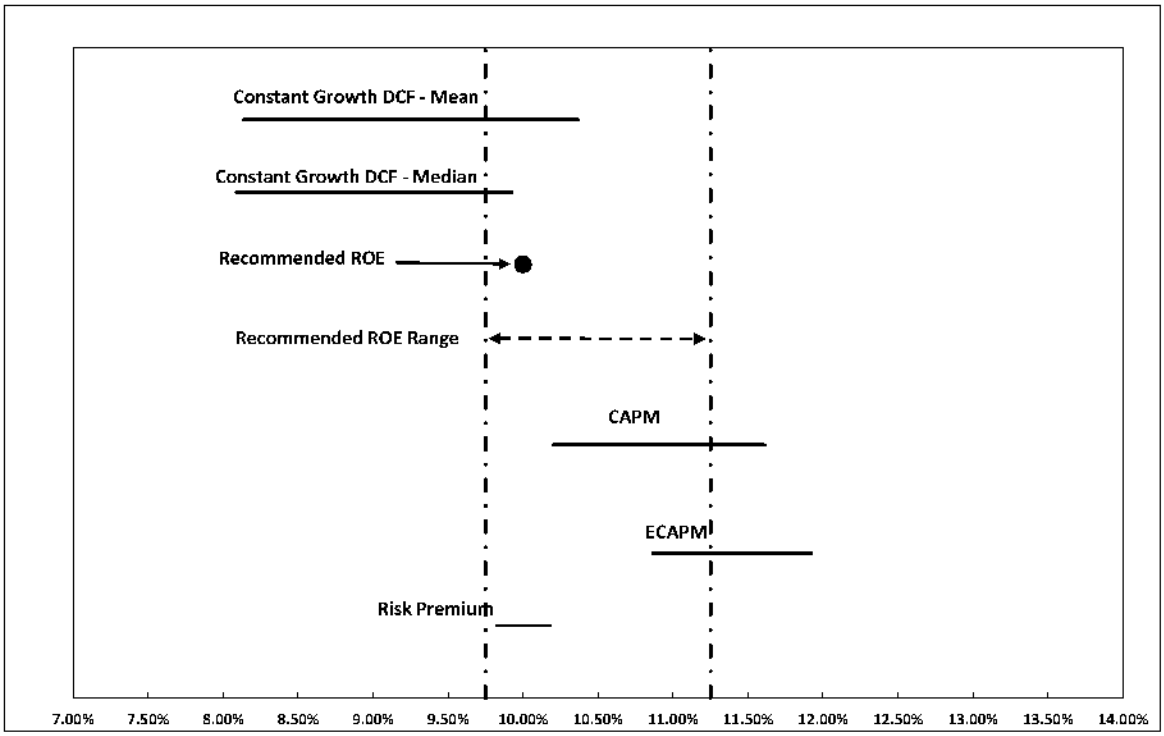
A. Figure 1. These ROE estimation models produce a wide range of results. My conclusion as to where, within that range of results, CMP's cost of equity falls is based on my assessment of market conditions, and the Company's business and financial risk relative to the proxy group. Although the companies in my proxy group are generally comparable to CMP, each company is unique, and no two companies have the exact same business and financial risk profiles. Accordingly, I considered the Company's business and financial risk in the aggregate in comparison to that of the proxy group companies when determining where the Company's ROE falls within the reasonable range of analytical results to account for any residual differences in risk.

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

A.

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

FIGURE 1: SUMMARY OF COST OF EQUITY ANALYTICAL RESULTS



1 As shown in

Figure 1 (and in Exhibit AEB-2), the range of results produced by the ROE estimation models is wide. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results varies considerably across methodologies. As a result, my ROE recommendation considers the range of results of the Constant Growth DCF model, as well as the results of the CAPM, ECAPM, and Bond Yield Plus Risk Premium analyses. My ROE recommendation also considers CMP's company-specific risk factors and current and prospective capital market conditions.

Q. Please summarize your conclusions.

A. In determining the appropriate ROE and capital structure for a company it is important to consider more than the results of the traditional ROE estimation models. As is discussed in more detail below, it is important to consider the overall market conditions and how those conditions affect the assumptions of the ROE estimation models. In addition, it is necessary to consider the relative risk of the company, in this case, CMP, as compared with the proxy group. The analyses presented in my testimony support the following conclusions:

- Inflation is expected to persist over the near-term which increases the operating risk of the utility. Additionally, long-term interest rates are expected to increase over the near-term in response to inflation. Utility share prices are inversely related to changes in interest rates. As interest rates rise, it is likely that utility share prices will decline. Therefore, the DCF model which relies on current utility share prices is likely understating the cost of equity during the period that CMP's rates will be in effect. This change in market conditions also supports the use of other ROE estimation models such as the CAPM and ECAPM which may be specified using forward looking inputs and thus better reflect expected market conditions.

- Equity analysts have noted the increased risk for the utility sector as a result of rising interest rates and therefore expect the sector to underperform over the near-term.
- CMP faces relatively greater business and financial risk relative to the proxy group due to the regulatory environment in Maine and the Company's significant capital investments plan.

It is reasonable and appropriate to consider all of these factors when estimating, within the model results, the range and estimated investor-required return on equity for CMP. Comparing CMP to the proxy group, it is evident that CMP has a higher overall risk profile than the proxy group, related to the differences in the specific operating risk factors identified in my testimony. Reviewing the analysis summarized in

Figure **1** above, I concluded that a reasonable ROE is within the range of 9.75 to 11.25%. The Company is requesting an ROE of 10.20% which below the midpoint of my recommended range and is a conservative estimate of the investor-required ROE considering the ROE results presented in

Figure 1 and the Company's proposed three-year rate plan during which interest rates are expected to increase. As the Company explains elsewhere in testimony, the selection of 10.20% is intended to reflect the special economic circumstances affecting its customers at this time.

Q. Please summarize your analysis of the appropriate ratemaking capital structure for the Company.

A. Based on the analysis presented in Section IX of my testimony, I conclude that CMP's proposed 50.00% common equity is reasonable. To determine if CMP's requested capital structure was reasonable, I reviewed the capital structures of the utility subsidiaries of the proxy companies. As shown in Exhibit AEB-13, the results of that analysis demonstrate that the average equity ratios for the utility operating companies of the proxy group range from 44.95% to 63.58%, with an average of 54.10%. Comparing the recommended equity ratio to the proxy group demonstrates that the Company's requested equity ratio is well within the range of equity ratios for the utility operating subsidiaries of the proxy group companies. Further, the Company's proposed equity ratio is reasonable considering the negative effect of the Tax Cuts and Jobs Act of 2017 ("TCJA") and increased capital expenditures on the cash flows and credit metrics of regulated utilities.

IV. REGULATORY GUIDELINES

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

A. The United States Supreme Court's precedent-setting *Hope* and *Bluefield* cases established the standards for determining the reasonableness of a utility's allowed ROE. Among the standards established by the Court in those cases are: (1) consistency with the returns on equity investments in other businesses having similar or comparable risks; (2)

adequacy of the return to support credit quality and access to capital; and (3) an understanding that the means of arriving at a fair return are not controlling, only that the end result leads to just and reasonable rates.[4]

Q. Is fixing a fair rate of return just about protecting the utility's interests?

A. No. As the court noted in *Bluefield*, a proper rate of return not only assures "confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit [but also] enable[s the utility] to raise the money necessary for the proper discharge of its public duties." *Bluefield*, 262 U.S. at 693. As the Court went on to explain in *Hope*, "[t]he rate-making process … involves balancing of the investor and consumer interests." *Hope*, 320 U.S. at 603.

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

A. Yes, it has. The Commission has consistently recognized the precedent established under *Hope* and *Bluefield*. For example, in Docket No. 2019-00092, the Commission stated the following:

> Based on that standard, determining an appropriate ROE for a regulated utility involves determining a market-based cost of equity. For a company that is not publicly traded, such as Northern, the cost of equity is determined to be the return investors expect from alternative investments that present no more and no less risk. In practice, estimating the cost of equity involves developing a comparable group of companies (the so-called proxy group), for which market-based information is available, that are in lines of business that present similar financial risks, and using economic and financial models to set an appropriate ROE. The Hope-Bluefield standard has long served as the benchmark against which this Commission measures an appropriate ROE.[5]

[4] *Hope*, 320 U.S. 591; *Bluefield*, 262 U.S. 679.

[5] *Northern Utilities, Inc.*, Request for Approval of Rate Change, Docket No. 2019-00092, Order (Part II) (April 1, 2020) at 51.

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 electric service while maintaining its financial integrity. To the extent the Company is provided the opportunity to earn its market-based cost of capital, neither customers nor shareholders are disadvantaged.

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 that is not in line with authorized ROEs for other natural gas and electric utilities, on a risk-adjusted basis, can inhibit the utility's ability to attract capital for investment in Maine.

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 customers.

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 CMP is authorized the opportunity to earn its market-based cost of capital, the proper balance is achieved between customers' and shareholders' interests.

V. CAPITAL MARKET CONDITIONS

Q. Why is it important to consider capital market conditions in the estimation of the investor-required return on equity?

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 to the expectations of market risk, in the case of the CAPM. Prevailing market conditions at the time the analysis is performed affect the results of the ROE estimation models. While the ROE that is established in a rate proceeding is intended to be forward-looking, current and projected market data, specifically stock prices, dividends, growth rates and interest rates are used in the ROE estimation models to estimate the required return for the subject company.

As is discussed in the remainder of this section, because current market conditions can affect the results of the ROE estimation models, it is important to consider the effect of these conditions on the ROE estimation models when determining the appropriate

range and recommended ROE for a future period. If investors do not expect current market conditions to be sustained in the future, it is possible that the ROE estimation models will not provide an accurate estimate of investors' required return during that rate period. Therefore, it is important to consider projected market data to estimate the return for that forward-looking period.

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

A. The cost of equity for regulated utility companies is being affected by several factors in the current and prospective capital markets, including: (1) persistently high inflation, (2) changes in monetary policy, and (3) rising interest rates. These factors affect the assumptions used in the ROE estimation models. In this section, I discuss each of these factors and how they affect the models used to estimate the cost of equity for regulated utilities.

Q. What effect do current and prospective market conditions have on the cost of equity for the Company?

A. As is discussed in more detail in the remainder of this section, the combination of persistently high inflation, the Federal Reserve's changes in monetary policy, and the dramatic shifts in market conditions resulting from political influences all contribute to an expectation of increased market risk and an increase in the cost of the investor-required return on equity. It is essential that these factors be considered in setting a forward-looking cost of equity. Inflation is currently at its highest level seen in approximately 40 years. Interest rates, which have increased from the pandemic lows seen in 2020 are expected to continue to increase in direct response to the Federal Reserve's monetary policy. Since there is a strong historical inverse correlation between interest rates and the

share prices of utility stocks (share prices of utility stocks typically fall when interest rates rise), it is reasonable to expect that investors' required ROE for utility companies will also continue to increase. Therefore, ROE estimates based solely on current market conditions will understate the ROE required by investors during the future period that the Company's rates determined in this proceeding will be in effect.

A. The Effect of Monetary Policy on Market Dynamics

Q. Please summarize the monetary policy actions of the Federal Reserve in response to the economic effects of COVID-19.

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

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

In addition, Congress also passed the Coronavirus Aid, Relief, and Economic Security ("CARES") Act in March 2020, the Consolidated Appropriations Act, 2021 in December 2020, and the American Rescue Plan Act in March 2021, which included $2.2 trillion, $900 billion, and $1.9 trillion, respectively, in fiscal stimulus aimed at also mitigating the economic effects of COVID-19. These expansive monetary and fiscal programs

mitigated the economic effects of the COVID-19 pandemic and provided additional support as the economy recovers from the COVID-19 recession.

Q. How did the accommodative monetary and fiscal policy affect the U.S. economy?

A. The expansive monetary and fiscal policy programs resulted in a strong economic recovery in 2021 from the COVID-19 induced recessionary period in 2020. In fact, according to the Bureau of Economic Analysis, real GDP grew by 5.7% in 2021 driven primarily by a 7.9% increase in personal consumption expenditures.[6] Moreover, the unemployment rate decreased from a high of 14.7%in April 2020 to 3.9% as of December 2021.[7] Finally, as I will discuss in more detail below, the economic recovery has also included a substantial increase in inflation with the year-over-year ("YOY") change in the Consumer Price Index ("CPI") at 9.0% in June 2022. As noted below, there are several factors that have contributed to the currently high inflation including supply chain disruptions related to the COVID-19 pandemic and energy price increases related to the Ukraine war. The strong economic recovery along with the increase in inflation resulted in the Federal Reserve normalizing monetary policy and beginning to remove the accommodative policy programs that it used to mitigate the effect of COVID-19.

Q. Is the Federal Reserve normalizing monetary policy?

A. The dramatic increase in inflation has prompted the Federal Reserve to pursue an aggressive normalization of monetary policy, removing the accommodating policy

[6] Bureau of Economic Analysis, News Release, February 24, 2022, at 8.

[7] Bureau of Labor Statistics. https://data.bls.gov/timeseries/LNS14000000.

programs used to mitigate the effects of COVID-19. As of the June 15, 2022 meeting, the Federal Reserve has taken the following actions:

- Completed its taper of Treasury bond and mortgage-backed securities purchase; [8]
- Increased the target federal funds rate from 0.00 – 0.25% to 0.25 – 0.50% at the March 16, 2022 meeting,[9] from 0.25 – 0.50% to 0.75 to 1.00% at the May 4, 2022 meeting,[10] and then from 0.75 to 1.00% to 1.50% to 1.75% at the June 15, 2022 meeting;[11]
- Forecasted a total of seven additional 25 basis point rate increases in 2022 and two 25 basis point rate increases in 2023 which resulted a median forecast of the federal funds rate of 3.4% and 3.8%, respectively;[12] and
- Began reducing its holdings of Treasury and mortgage-backed securities on June 1, 2022.[13] The Federal Reserve is reducing the size of its balance sheet by only reinvesting principal payments on owned securities after the total amount of payments received exceeds a defined cap. For Treasury Securities, the cap is set at $30 billion per month for the first three months and $60 billion per month after the first three months. The cap for mortgage-backed securities is set at $17.5 billion per month for the first three months and $35 billion per month thereafter.[14]

[8] Federal Reserve Bank of New York, https://www.newyorkfed.org/markets/domestic-market-operations/monetary-policy-implementation/treasury-securities/treasury-securities-operational-details#monthly-details.

[9] Federal Reserve, Press Release, March 16, 2022.

[10] Federal Reserve, Press Release, May 4, 2022.

[11] Federal Reserve, Press Release, June 15, 2022.

[12] Federal Reserve, Summary of Economic Projections, June 15, 2022, at 2.

[13] Federal Reserve, Press Release, May 4, 2022.

[14] Federal Reserve, Plans for Reducing the Size of the Federal Reserve's Balance Sheet, Press Release, May 4, 2022.

Q. Has the Federal Reserve provided additional support for the expectation that it will continue to aggressively normalize monetary policy to reduce inflation?

A. Yes. Specifically, Federal Reserve Chairman Powell noted at his press conference on June 15, 2022 that reducing inflation to the long-term goal of 2% was the primary objective and that additional rate increases will be necessary with a 50 or 75 basis point increase likely needed at the next meeting:

> Over coming months, we will be looking for compelling evidence that inflation is moving down, consistent with inflation returning to 2 percent. We anticipate that ongoing rate increases will be appropriate; the pace of those changes will continue to depend on the incoming data and the evolving outlook for the economy. Clearly, today's 75 basis point increase is an unusually large one, and I do not expect moves of this size to be common. From the perspective of today, either a 50 or 75 basis point increase seems most likely at our next meeting. We will, however, make our decisions meeting by meeting, and we will continue to communicate our thinking as clearly as we can. Our overarching focus is using our tools to bring inflation back down to our 2 percent goal and to keep longer-term inflation expectations well anchored.
>
> Making appropriate monetary policy in this uncertain environment requires a recognition that the economy often evolves in unexpected ways. Inflation has obviously surprised to the upside over the past year, and further surprises could be in store. We therefore will need to be nimble in responding to incoming data and the evolving outlook. And we will strive to avoid adding uncertainty in what is already an extraordinarily challenging and uncertain time. We are highly attentive to inflation risks and determined to take the measures necessary to restore price stability. The American economy is very strong and well positioned to handle tighter monetary policy.[15]

B. Inflationary Expectations in Current and Projected Market Conditions

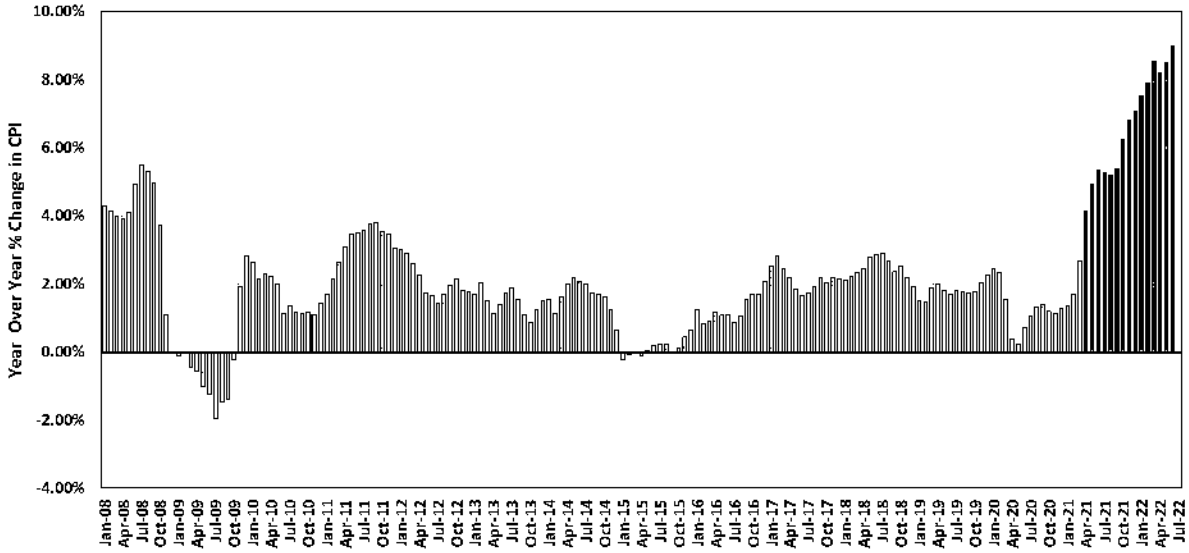
Q. Is the increase in inflation significant?

A. Yes. As shown in Figure 2, the YOY change in the CPI published by the Bureau of Labor statistics was 1.37% in January 2021. However, since that time, and particularly since the start of 2022, inflation has increased steadily, reaching a high of 9.0% YOY

[15] Federal Reserve, Transcript of Chair Powell's Press Conference Opening Statement, June 15, 2022, at 4-5.

change in June 2022, which is the largest 12-month increase since 1981 and significantly greater than any level seen since January 2008. The 9.0% YOY change in the CPI in June 2022 is down only slightly from the high in March 2022.

FIGURE 2: CONSUMER PRICE INDEX—YOY PERCENT CHANGE JANUARY 2008–JUNE 2022[16]



Q. What are the expectations for inflation over the near-term?

A. In his press conference following the June 15, 2022, meeting, Chairman Powell noted that "[w]e at the Fed understand the hardship high inflation is causing. We are strongly committed to bringing inflation back down, and we are moving expeditiously to do so".[17] Therefore, investors expect inflation to remain elevated over the near-term. One measure of investors' expectations regarding inflation is the breakeven inflation rate calculated as the spread between the yield on a Treasury bond and the yield on a Treasury Inflation-Protected bond, since a Treasury Inflation-Protected bond would account for the effect of

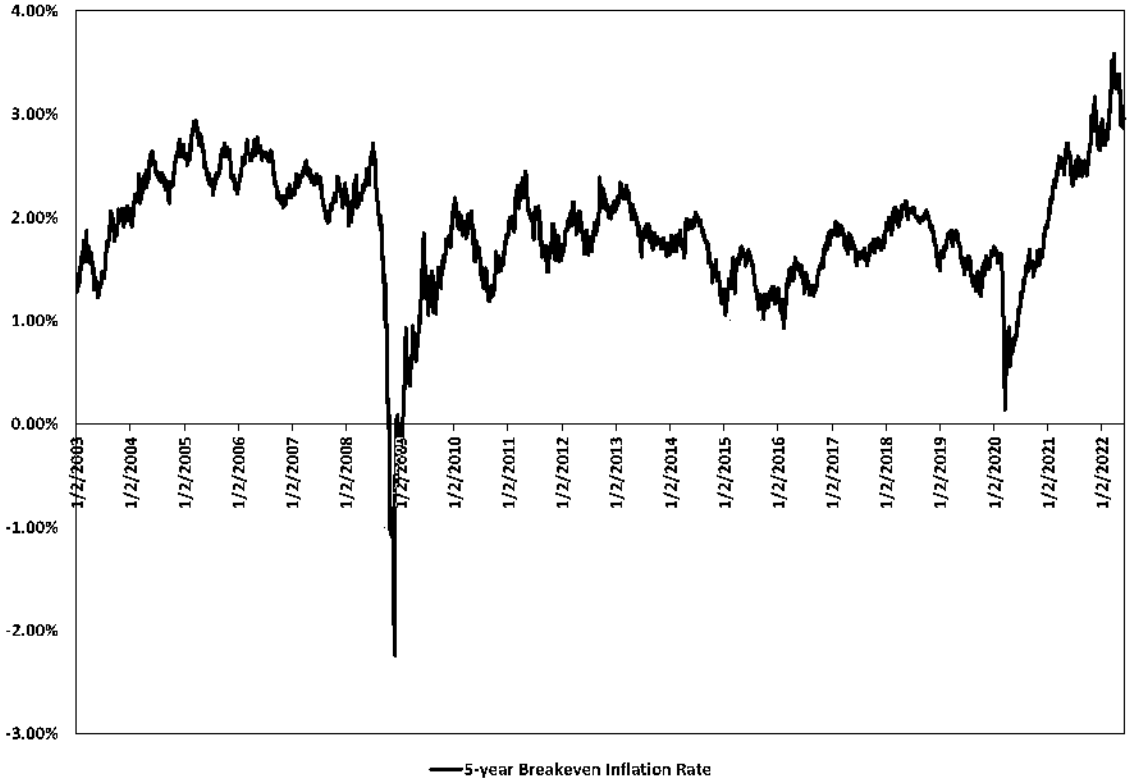
[16] Bureau of Labor Statistics, shaded area indicates a recession.

[17] Federal Reserve, Transcript of Chair Powell's Press Conference, (June 15, 2022), at 1.

inflation. The maturity of the bond selected would then reflect investors' views of inflation during the holding period of the bond.

For example, the 5-year breakeven inflation rate calculated as the spread between the 5-year Treasury bond yield and the 5-year Treasury Inflation-Protected bond yield would reflect investors' expectations of inflation over the next 5 years. As shown in Figure 3 below, the 5-year breakeven inflation rate is currently greater than any level seen since January 2003. Furthermore, the 5-year breakeven inflation rate as of May 31, 2022 was 2.96% indicating that investors expect inflation will remain well above the Federal Reserve's 2% target over the next 5 years. Therefore, inflation will remain elevated for the duration of the Company's proposed multi-year rate plan.

FIGURE 3: 5-YEAR BREAKEVEN INFLATION RATE JANUARY 2003–MAY 2022[18]



There are many factors as to why inflation is expected to remain elevated. *Kiplinger* recently noted a few factors including supply shortages due to COVID-19 and Russia's war in Ukraine which led them to forecast an inflation rate of 8% for 2022.

> Gasoline prices continued their strong rise in June, and the overall inflation rate is likely to stay at the same high level in June. It should peak at about 9% by the end of the summer, then decline gradually after that, ending the year at about 8.0% before dropping to 3-4% next year. The higher cost of housing will still keep inflation rates elevated for some time to come. Gasoline prices and heating costs are likely to stay high for a good while because of the war in Ukraine, but energy prices are likely to peak during the summer and ease after that. The price of cars and trucks will also stay at a high level until the semiconductor shortage ends sometime next year. Continued spot shortages of various items will drive their prices up, adding to the overall inflation rate. The latest is a shortage of tampons.[19]

[18] Federal Reserve Bank of St. Louis, 5-Year Breakeven Inflation Rate [T5YIE], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/T10YIE, May 31, 2022.

[19] Payne, David, "Inflation Should Peak This Summer at About 9%," *Kiplinger*, June 10, 2022.

C. The Effect of Inflation on Interest Rates and the Investor-Required Return

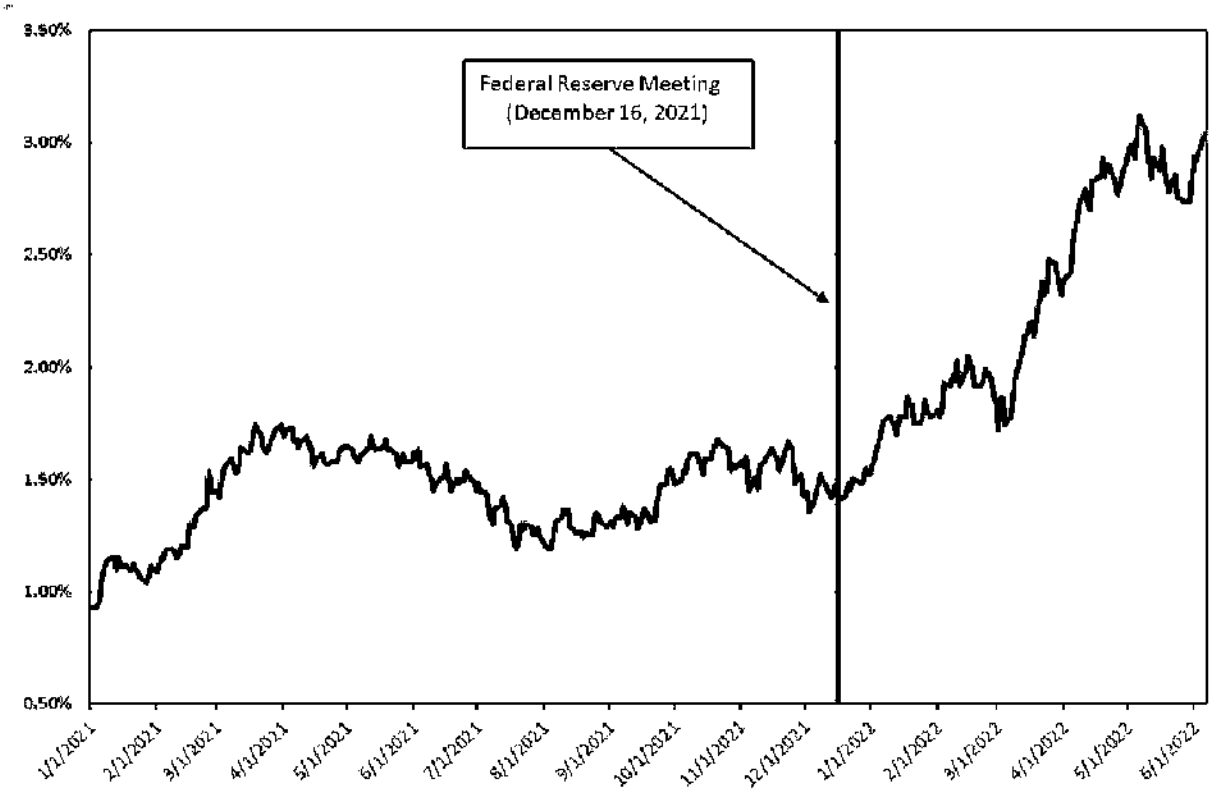
Q. What effect will inflation have on long-term interest rates?

A. Inflation and the Federal Reserve's normalization of monetary policy will likely result in increases in long-term interest rates. Specifically, inflation reduces the purchasing power of the future interest payments an investor expects to receive over the duration of the bond. This risk increases the longer the duration of the bond. As a result, if investors expect increased levels of inflation, they will require higher yields to compensate for the increased risk of inflation, which means interest rates will increase.

Q. Have the yields on long-term government bonds increased in response to inflation and the Federal Reserve's normalization of monetary policy?

A. Yes, they have. As discussed above, at the December 2021, January 2022, March 2022, May 2022 and June 2022 meetings, the Federal Reserve noted its continued concerns over the sustained increased levels of inflation. In addition, starting at the December 2021 meeting and continuing through the June 2022 meeting, the Federal Reserve accelerated the process of normalizing monetary policy to respond to inflation. As shown in Figure 4, since the Federal Reserve's December 2021 meeting, the yield on 10-year Treasury bond has doubled, increasing from 1.47% on December 15, 2021 to 2.85% on May 31, 2022. The increase is due to the Federal Reserve's announcements at the December 2021, January 2022, March 2022 and May 2022 meetings as well as investors' expectations regarding the Federal Reserve's announcement at the June 2022 meeting, and the continued increased levels of inflation that are now expected to persist much longer than the Federal Reserve and investors had originally projected.

FIGURE 4: 10-YEAR TREASURY BOND YIELD
JANUARY 2021–MAY 2022[20]



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

A. Leading equity analysts have noted that they expect the yields on long-term government bonds to remain elevated through at least the end of 2022. According to views of equity analysts summarized in Figure 5, the yield on the 10-year Treasury Bond is expected to range from 3.15% to 4.00% by the end of 2022, which is 26 to 111 basis points greater than the current 30-day average yield on the 10-year Treasury Bond as of May 31, 2022 of 2.89%. Furthermore, as of June 14, 2022, the yield on the 10-year Treasury was trading at 3.49%.

[20] S&P Capital IQ Pro.

FIGURE 5: EQUITY ANALYSTS FORECAST OF THE 10-YEAR TREASURY YIELD

Bank	10-year U.S. Treasury Yield	
	30-day Average as of May 31, 2022	2022 Forecast
Advocate Capital Management [21]	2.89%	4.00%
Goldman Sachs[22]	2.89%	3.30%
Blue Chip Financial Forecasts (Consensus Estimate)[23]	2.89%	3.20%
BMO Economics[24]	2.89%	3.15%

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

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

[21] MarketWatch, "This bond expert who called the spike in U.S. yields forecasts the 10-year to reach 4%," May 7, 2022. https://www.marketwatch.com/story/this-bond-expert-who-called-the-spike-in-u-s-yields-forecasts-the-10-year-to-reach-4-11651843223.

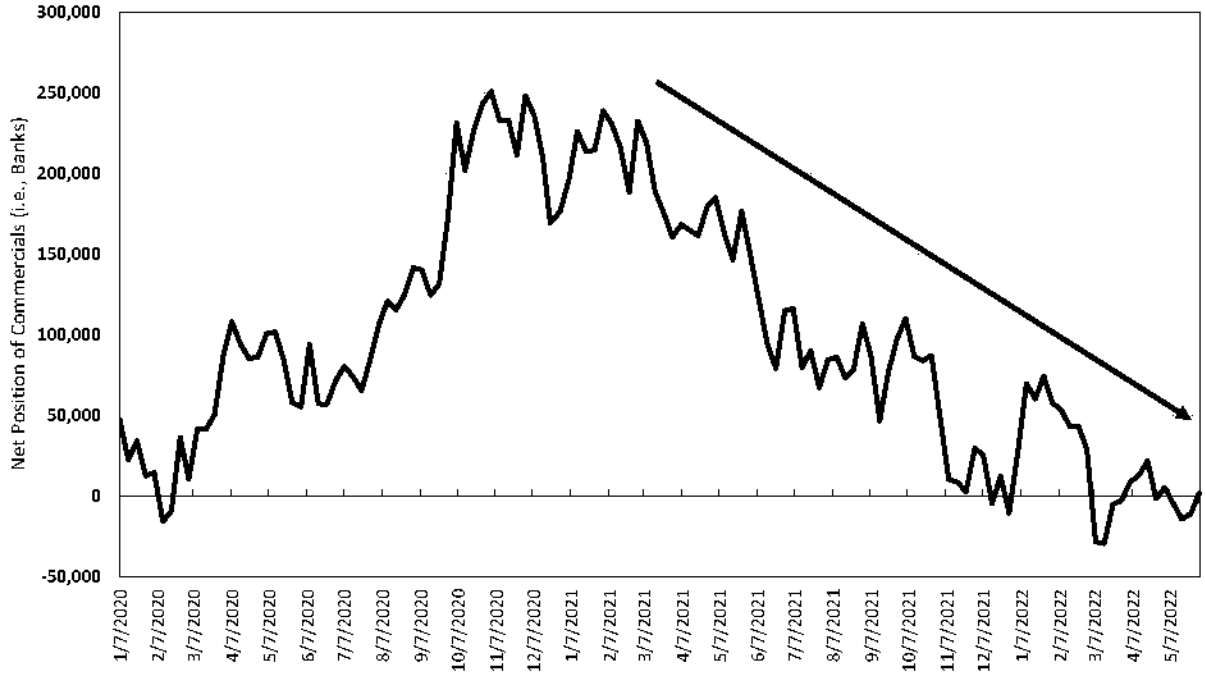
[22] Pollard, Amelia. "Goldman Lifts Yield Forecasts, Sees 10-Year Treasuries at 3.3%." Bloomberg.com, May 12, 2022.

[23] Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022, at 2.

[24] BMO Economics, "Rates Scenario for May 11, 2022," May 11, 2022.

banks are increasing the number of short positions and thus have a declining net position, the banks are assuming that the price of the asset will decline. As shown in Figure 6, the net position of banks in U.S. Treasury Bonds has been decreasing since the end of 2020. Therefore, banks are forecasting a decrease in the price of long-term government bonds and thus the yields (which are inversely related to the price) to increase over the near-term.

FIGURE 6: COMMITMENT OF TRADERS REPORT—NET POSITION OF COMMERCIALS (*I.E.*, BANKS) IN U.S. TREASURY BOND FUTURES CONTRACTS[25]



[25] Commitment of Traders Report, as of May 31, 2022, https://www.cftc.gov/MarketReports/CommitmentsofTraders/HistoricalCompressed/index.htm

D. Expected Performance of Utility Stocks and the Investor-Required ROE on Utility Investments

Q. Are utility share prices correlated to changes in the yields on long-term government bonds?

A. Yes. Interest rates and utility share prices are inversely correlated which means, for example, that an increase in interest rates will result in a decline in the share prices of utilities. For example, Goldman Sachs and Deutsche Bank recently examined the sensitivity of share prices of different industries to changes in interest rates over the past five years. Both Goldman Sachs and Deutsche Bank found that utilities had one of the strongest negative relationships with bond yields (*i.e.*, increases in bond yields resulted in the decline of utility share prices).[26]

Q. Have electric utility stock prices recently increased?

A. Yes. Utility stock prices had trended down as interest rates moved higher; however, as a result of the political turmoil associated with the war in Ukraine, investors have recently returned to utility stocks as a safe haven seeking to lower risk, resulting in higher electric utility stock prices and thus lower dividend yields.[27]

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

A. Even with the recent increase in electric utility stock prices, equity analysts project that utilities will underperform the broader market as interest rates increase. For example, in

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

[27] Sonenshine, Jacob. "Utilities Have Been Soaring as Treasuries Get Crushed. That Isn't Supposed to Happen." Barrons.com, April 11, 2022, https://www.barrons.com/articles/utilities-treasury-yields-outlook-51649457572?mod=hp_INTERESTS_bonds&refsec=hp_INTERESTS_bonds

its most recent Big Money Poll, which closed in mid-April 2022 and surveyed 112 money managers regarding the outlook for the next twelve months, the professional investors surveyed by Barron's selected the utility sector as the least attractive of all industries for investment.[28] In addition, Fidelity recently recommended underweighting the utility sector and noted that it classified the sector as underweight due to a combination of "poor fundamentals and expensive valuations."[29] Furthermore, regarding the recent increase in utility share prices, Fidelity stated that:

> Energy stocks have garnered a lot of attention, but in February utilities was the only sector with monthly returns in the 90th percentile of its historical range. In the past, powerful utilities rallies have signaled investors getting too defensive. The market typically has gained, and utilities have underperformed, in 12-month periods after top-decile monthly relative returns for the sector.[30]

Q. Have you reviewed any market indicators that may imply that utilities will underperform over the near-term?

A. Yes, I have. As discussed above, the utility sector is considered a "bond proxy" or a sector that investors view as a "safe haven" alternative to bonds, and changes in utility stock prices are therefore inversely related to changes in interest rates. For example, the utility sector tends to perform well when interest rates are low since the dividend yields for utilities offer investors the prospect of higher returns when compared to the yields on long-term government bonds. Conversely, the utility sector underperforms as the yields on long-term government bonds increase and the spread between the dividend yields on utility stocks and the yields on long-term government bonds decreases. Therefore, I

[28] Jasinski, Nicholas. "Bearish Now, Bullish Later: How Investors Are Sizing up Stocks," Barron's updated April 24, 2022.

[29] Fidelity, "Top sectors to watch in Q2," May 4, 2022.

[30] *Ibid.*

examined the difference ("yield spread") between the dividend yields of utility stocks and the yields on long-term government bonds from January 2010 through May 2022. I selected the dividend yield on the S&P Utilities Index as the measure of the dividend yields for the utility sector and the yield on the 10-year Treasury Bond as the estimate of the yield on long-term government bonds.

As shown in Figure 7, the yield spread as of May 31, 2022, was 0.00% indicating that the yield on the 10-year Treasury Bond is equivalent to the dividend yield for the S&P Utilities Index. Furthermore, the current yield spread of 0.00% is well below the long-term average since January 2010 of 1.45%. Given that the yield spread is currently well below the long-term average as well as the expectation that interest rates will continue to increase, it is reasonable to conclude that utility sector will most likely underperform over the near-term. This is because investors that purchased utility stocks as an alternative to the lower yields on long-term government bonds would otherwise be inclined to rotate back into government bonds, particularly as the yields on long-term government bonds continue to increase, thus resulting in a decrease in the share prices of utilities.

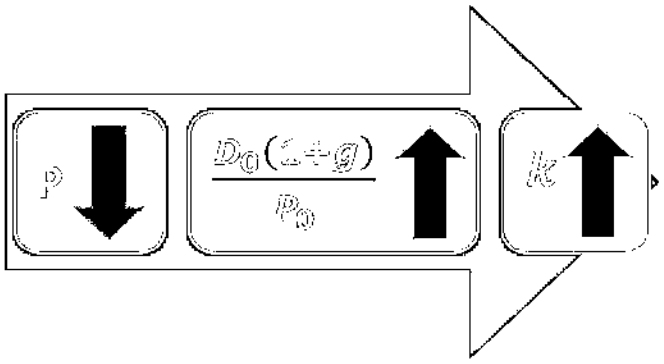
FIGURE 7: YIELD SPREAD BETWEEN THE DIVIDEND YIELD ON THE S&P UTILITIES INDEX AND THE YIELD ON THE 10-YEAR TREASURY BOND – JANUARY 2010 – MAY 2022[31]

Q. What is the significance of the inverse relationship between interest rates and utility share prices in the current market?

A. As discussed above, the Federal Reserve is currently normalizing monetary policy in response to inflation which actions are expected to increase long-term government bond yields. If interest rates increase as expected, then the share prices of utilities will decline. If the prices of utility stocks decline, then the DCF model, which relies on historical averages of share prices, is likely to understate the cost of equity. For example, Figure 8, below summarizes the effect of price on the dividend yield in the Constant Growth DCF model.

[31] Bloomberg Professional and S&P Capital IQ Pro.

FIGURE 8: THE EFFECT OF A DECLINE IN STOCK PRICES ON THE CONSTANT GROWTH DCF MODEL



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

E. Conclusions

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

A. Over the near-term, investors expect long-term interest rates to increase in response to continued elevated levels of inflation and the Federal Reserve's normalization of monetary policy. Because the share prices of utilities are inversely correlated to interest rates, an increase in long-term government bond yields will likely result in a decline in utility share prices, which is the reason a number of equity analysts expect the utility sector to underperform over the near-term. The expected underperformance of utilities

means that DCF models using recent historical data likely underestimate investors' required return over the period that rates will be in effect. This change in market conditions also supports the use of other ROE estimation models such as the CAPM and the ECAPM, which may better reflect expected market conditions.

VI. PROXY GROUP SELECTION

Q. Why have you used a group of proxy companies to estimate the Cost of Equity for CMP?

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

Even if CMP were 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 CMP.

Q. Please provide a brief profile of CMP.

A. CMP is an electric transmission and distribution utility, wholly owned by Avangrid, serving approximately 646,000 customers in central and southern Maine covering close

to 11,000 square miles.[32] The company's service territory encompasses most of Maine's largest cities, including Portland, Lewiston, Brunswick and Augusta. CMP's transmission and distribution system represents approximately 21.37% of the total rate base of Avangrid's Networks subsidiary.[33] In 2021, the Company delivered approximately 9,297,000 MWh of electricity[34] and had total distribution operating revenues of $313 million.[35] Additionally, CMP had a distribution rate base in 2021 of $1,014 million[36] which consisted of 21,954 miles of overhead lines, and 1,780 miles of underground lines.[37] CMP currently has an investment grade long-term rating of A (Outlook: Stable) from S&P[38], and A2 (Outlook: Stable) from Moody's.[39]

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

A. In prior cases (*i.e.*, Docket No. 2015-00360 and Docket No. 2013-00443), the Commission Staff ("Staff") noted that including companies in the proxy group that own natural gas distribution operations or using a separate proxy group comprised of natural gas distribution companies is appropriate for the purposes of comparing to an electric utility that does not own any generation.[40] Specifically, Staff stated in Docket No. 2015-00360 that "[l]ike distribution and transmission of electricity through poles and wires,

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[32] CMP website.

[33] Avangrid, Inc., 2021 Form 10-K, at 8.

[34] *Ibid.*

[35] Company provided data.

[36] Avangrid, Inc., 2021 Form 10-K, at 9.

[37] *Id.* at 18.

[38] S&P Capital IQ Pro, accessed June 30, 2022

[39] Moody's Investors Service, accessed June 30, 2022.

[40] Emera Maine, Request for Approval of a Proposed Rate Increase, Docket No. 2015-00360, Bench Analysis at 6 (June 2, 2016); Bangor Hydro Electric Company and Maine Public Service Company, Proposed Increase in Distribution Rates, Docket No. 2013-00443, Bench Analysis, at 7 (March 17, 2014).

transportation of gas through pipes presents a similar risk profile to electric T&D utilities."[41] Moreover, in Docket No. 2018-00194 for CMP, Staff developed a proxy group that included natural gas distribution companies for the purposes of estimating the cost of equity for CMP.[42] In recognition of Staff's position and in order to minimize the issues that are disputed in this case, I considered for inclusion in the proxy group, companies that were classified by Value Line as Natural Gas Distribution Companies. Therefore, to develop my proxy group, I began with the companies that Value Line classifies as Electric Utilities and Natural Gas Distribution Companies. That combined group includes 46 domestic U.S. utilities. I simultaneously applied the following screening criteria to establish a risk-comparable proxy group that includes both electric utility companies and natural gas distribution 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;
- Are covered by at least two utility industry analysts;
- Have positive long-term earnings growth forecasts from at least two utility industry equity analysts;
- Derive more than 70.00% of their total operating income from regulated operations; and

[41] Emera Maine, Request for Approval of a Proposed Rate Increase, Docket No. 2015-00360, Bench Analysis, at 6-7 (June 2, 2016).

[42] Central Maine Power Company, Investigation into the Rates and Revenue Requirements of Central Maine Power Company, Docket No. 2018-00194, Bench Analysis, at 42 (February 22, 2019).

- Were not parties to a merger or transformative transaction during the relevant analytical periods.

Q. Did you include Avangrid in your analysis?

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

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

A. Yes. I also excluded Pinnacle West Capital Corporation ("PNW") and Hawaiian Electric Industries, Inc. ("HE") from the proxy group. For PNW, the share price decreased approximately 24% over a two-month period from October through November 2021 resulting from a negative regulatory decision for its largest operating company, Arizona Public Service Company. Therefore, similar to the reason that I exclude transformative transactions; because the stock price can be affected by one-time events, I also excluded PNW from the proxy group.

HE's operations are concentrated on the islands of Hawaii; therefore, the company faces geographic concentration risk. As HE noted in the company's 2020 Form10-K:

> The Company is subject to the risks associated with the geographic concentration of its businesses and current lack of interconnections that could result in service interruptions at the Utilities or higher default rates on loans held by ASB [American Savings Bank].[43]

The increased risk of service interruptions resulting from HE's geographic location which could result in revenue loss and increased costs is a risk unique to HE and would not apply to utilities located on the U.S. mainland. Furthermore, HE's unregulated operations which represent approximately 33% of the company's operation income in

[43] Hawaii Electric Industries, Inc., 2021 Form 10-K, at 23.

2021 are concentrated in the banking sector through the ownership of American Savings Bank ("ASB").[44] ASB also only operates on Hawaii; thus, all of the company's consumer and commercial loans are to customers in Hawaii. If Hawaii were to face an adverse economic or political event, ASB could face severe financial effects given the company's geographic concentration in Hawaii.[45] As a result, I have excluded HE from my proxy group considering HE's unique geographical risks.

Q. What is the composition of your proxy group?

A. The screening criteria discussed above is shown in Exhibit AEB-3 and resulted in a proxy group consisting of the companies shown in Figure 9 below.

FIGURE 9: PROXY GROUP

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Atmos Energy Corporation	ATO
Avista Corporation	AVA
Black Hills Corporation	BKH
CMS Energy Corporation	CMS
Consolidated Edison, Inc.	ED
Duke Energy Corporation	DUK
Edison International	EIX
Entergy Corporation	ETR
Evergy, Inc.	EVRG
Eversource Energy	ES
IDACORP, Inc.	IDA
MGE Energy, Inc.	MGEE
NextEra Energy, Inc.	NEE
NiSource Inc.	NI
Northwest Natural Gas Company	NWN

[44] *Id.* at 86.

[45] *Id.* at 20.

Company	Ticker
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE
ONE Gas, Inc.	OGS
Otter Tail Corporation	OTTR
Portland General Electric Company	POR
Public Service Enterprise Group Inc.	PEG
Southern Company	SO
Spire, Inc.	SR
Wisconsin Energy Corporation	WEC
Xcel Energy Inc.	XEL

VII. COST OF EQUITY ESTIMATION

Q. Please briefly discuss the ROE in the context of the regulated rate of return.

A. The rate of return ("ROR") for a regulated utility is based on its weighted average cost of capital, in which the costs of the individual sources of capital are weighted by their respective percentages of total capitalization of the utility. The ROE included in the ROR is weighted by the percentage of common equity in the regulated utility's ratemaking capital structure.

Q. How is the required ROE determined?

A. While the cost of debt can be directly observed, the cost of equity and the required ROE are market-based and, therefore, must be estimated based on observable market information. The required ROE is determined by using one or more analytical techniques that rely on market data to quantify investor expectations regarding the range of required equity returns. Informed judgment is applied, based on the results of those analyses, to determine where within the range of results the cost of equity for a company falls. As a general proposition, the key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' views of the financial markets, the proxy group companies, and the subject company's risk profile.

Q. What methods did you use to determine the Company's ROE?

A. I considered the results of the Constant Growth DCF model, the CAPM, the ECAPM, and the Bond Yield Plus Risk Premium 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. As a result, a number of models have been developed to estimate the cost of equity. For that reason, I use multiple approaches to estimate the cost of equity. As a practical matter, however, all of the models available for estimating the cost of equity are subject to limiting assumptions or other methodological constraints. Consequently, many finance texts recommend using multiple approaches when estimating the cost of equity. For example, Copeland, Koller, and Murrin[46] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[47] recommend the CAPM, DCF, and "bond yield plus risk premium" approaches.

Q. Do current market conditions justify using more than one analytical approach?

A. Yes. Interest rates have increased and are expected to continue to increase from the lows as a result of the COVID-19 pandemic. Given the inverse relationship between interest

[46] 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.

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

rates and utility share prices, the dividend yields of utilities are expected to increase over the near-term. Therefore, the current low dividend yields for utilities result in DCF cost of equity estimates that are understating the forward-looking cost of equity. The CAPM and Bond Yield Plus Risk Premium method offer some balance to the sensitivity of the DCF model to Treasury yields. Low interest rates might 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. However, when applied appropriately, the CAPM will take into account the relationship between ROE and interest rates through the market risk premium component. Therefore, it is important to use multiple analytical approaches to ensure that the ROE results reflect the market conditions that are expected during the period that CMP's rates will be in effect. Given the expectation that interest rates will increase, it is important to moderate the impact that the current lower interest rates are having on the ROE estimates, especially the DCF analysis, and where possible consider using projected market data in the models to estimate the return for the forward-looking period.

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

A. Yes, several regulatory commissions consider the results of multiple ROE estimation methodologies such as the DCF, CAPM, and ECAPM in determining the authorized ROE, including the Federal Energy Regulatory Commission ("FERC"),[48] Minnesota

[48] FERC Opinion No. 569-A, Order on Rehearing, May 21, 2020, para. 112, 140.

Public Utilities Commission ("Minnesota PUC"),[49] the Michigan Public Service Commission ("Michigan PSC"),[50] the Iowa Utilities Board ("IUB"),[51] the Washington Utilities and Transportation Commission ("Washington UTC"),[52] and the New Jersey Board of Public Utilities ("NJBPU").[53] For example, FERC issued Opinion No. 569-A, Order on Rehearing, on May 21, 2020, in which FERC reviewed prior decisions and found that investors rely on the DCF, CAPM, and risk premium approaches to make investment decisions.[54] Therefore the FERC concluded that the results of each of these models should be given equal weight, as the "evidence does not indicate that there is a clearly superior model for estimating cost of equity that should be given more weight than the others."[55]

Additionally, the Washington UTC has repeatedly emphasized that it "places value on each of the methodologies used to calculate the cost of equity and does not find it appropriate to select a single method as being the most accurate or instructive."[56] The Washington UTC has also explained that "[f]inancial circumstances are constantly

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

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

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

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

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

[54] FERC Opinion No. 569-A, Order on Rehearing, May 21, 2020, para. 112, 140.

[55] *Id.* at para. 141.

[56] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-130043, Order 05, n. 89 (Dec. 4, 2013).

shifting and changing, and we welcome a robust and diverse record of evidence based on a variety of analytics and cost of capital methodologies."[57]

Finally, in its recent order for DTE Gas Company ("DTE Gas") in Case No. U-18999, the Michigan PSC considered the results of each of the models presented by the ROE witnesses, which included the DCF, CAPM, and ECAPM in the determination of the authorized ROE.[58] The Commission also considered authorized ROEs in other states, increased volatility in capital markets and the company-specific business risks of DTE Gas.

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 CMP.

Furthermore, as discussed in Section V above, long-term interest rates have increased since August 2020 and this trend is expected to continue as the Federal Reserve normalizes monetary policy in response to increased inflation. Therefore, the use of current averages of Treasury bond yields as the estimate of the risk-free rate in the

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

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

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 result 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. Discounted Cash Flow (DCF) Model

Q. Please describe the DCF approach.

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

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

Where P_0 represents the current market stock price, $D_1 \ldots D_n$ 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 assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ("P/E") ratio; and (4) a discount rate greater than the expected growth

rate. To the extent any of these assumptions is violated, considered judgment and/or specific adjustments should be applied to the results.

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

A. The dividend yield in my Constant Growth DCF model is based on the proxy companies' current annual dividends and average closing stock prices over the 30-, 90-, and 180-trading days as of May 31, 2022.

Q. Why did you use three averaging periods for stock prices?

A. In my Constant Growth DCF model, I use an average of recent trading days to calculate the price 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, as discussed above, recent market data is not representative of expected market conditions over the long-term. 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 median to median-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. What sources of long-term growth rates did you rely on in your Constant Growth DCF model?

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.

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

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

Q. Please summarize the results of your Constant Growth DCF analyses.

A. Figure 10 (see also Exhibit AEB-4) presents the range of results produced by my proxy group. As shown in Figure 10, for the proxy group, the median and mean DCF results range from 9.07% to 9.35%, and the median high and mean high results are in the range of 9.80% to 10.47%. While I also summarize the median low and mean low DCF results, given the expected underperformance of utility stocks and thus the likelihood that the DCF model is understating the cost of equity, I do not believe it is appropriate to consider the low DCF results at this time.

FIGURE 10: CONSTANT GROWTH DISCOUNTED CASH FLOW RESULTS[59]

	Constant Growth DCF		
	Mean Low	**Mean**	**Mean High**
30-Day Average	8.06%	9.17%	10.28%
90-Day Average	8.12%	9.24%	10.35%
180-Day Average	8.24%	9.35%	10.47%
	Median Low	**Median**	**Median High**
30-Day Average	7.94%	9.07%	9.80%
90-Day Average	8.03%	9.11%	9.91%
180-Day Average	8.30%	9.21%	10.06%

Q. What are your conclusions about the results of the Constant Growth DCF model?

A. As discussed previously, one primary assumption of the DCF model is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. Since utility stocks are expected to underperform the broader market over the near-term as interest rates increase, it is important to consider the results of the DCF models with caution. This means that the results of the DCF models, which rely on historical stock

[59] *See* Exhibit AEB-4.

prices, are below where they would be expected to be going forward during the period in which the rates for the Company will be in effect. 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.

C. Capital Asset Pricing Model

Q. Please briefly describe the Capital Asset Pricing Model ("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

β = Beta coefficient of an individual security

r_f = the risk-free rate of return

r_m = the required return on the market as a whole

In this specification, the term $(r_m - r_f)$ represents the market risk premium. According to the theory underlying the CAPM, investors should be concerned only with systematic or non-diversifiable risk because unsystematic risk can be diversified away. Non-diversifiable risk is measured by the Beta coefficient, which is defined as:

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

The variance of the market return, noted in Equation [4], is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the market reflects the extent to which the return on that security will respond to a given change in the market return.

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

A. I used three estimates of the yield on Treasury bonds: (1) the current 30-day average yield on 30-year Treasury bonds (3.02%);[60] (2) the projected 30-year Treasury yield for Q3 2022 through Q3 2023 (3.48%);[61] and (3) the projected 30-year Treasury yield for the period 2024-2028 (3.80%).[62]

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.

[60] Bloomberg Professional.

[61] Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022, at 2.

[62] Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2021, at 14.

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

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

Additionally, as shown in Exhibit AEB-6, I also considered an additional CAPM analysis which relies on the long-term average utility Beta coefficient for the companies in my proxy group. The long-term average utility Beta coefficient was calculated as an average of the Value Line Beta coefficients for the companies in my proxy group from 2013 through 2021.

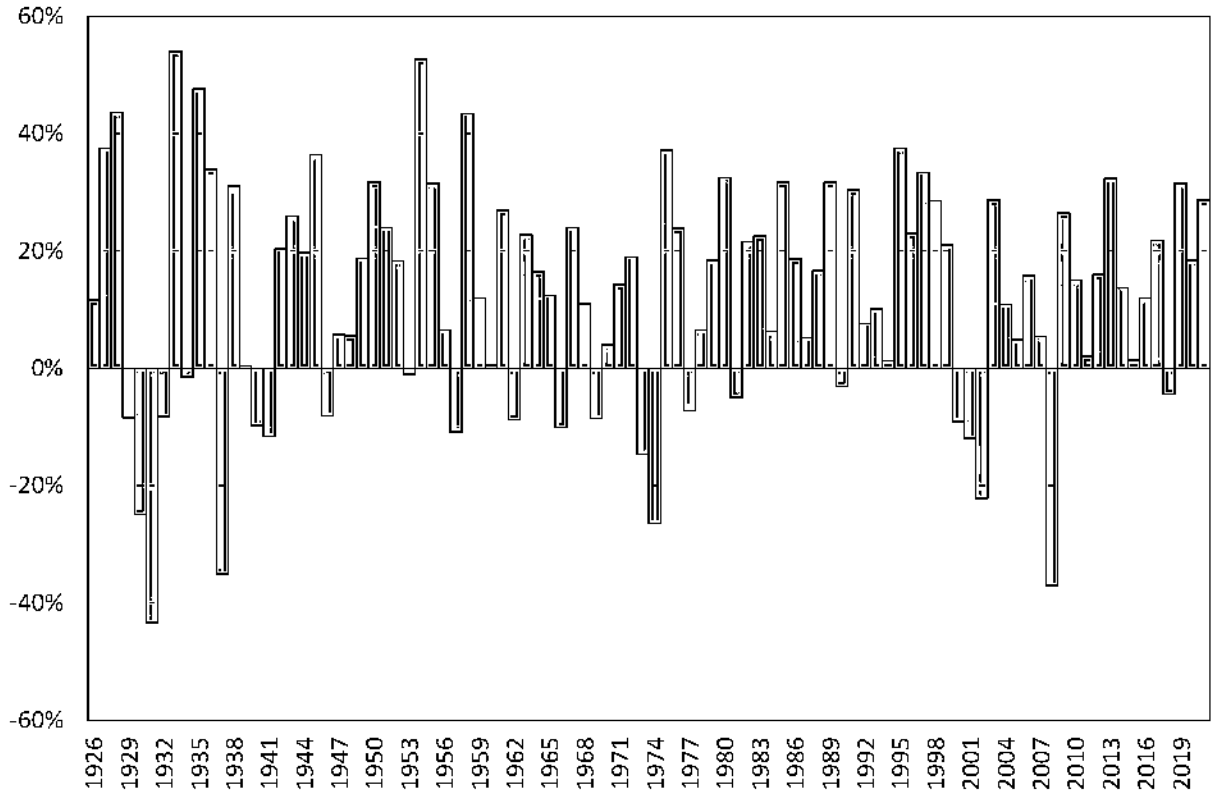
Q. How did you estimate the Market Risk Premium in the CAPM?

A. I estimated the Market Risk Premium ("MRP") as the difference between the implied expected equity market return and the risk-free rate. As shown in Exhibit AEB-7, the expected return on the S&P 500 Index is calculated using the Constant Growth DCF model for the companies in the S&P 500 Index. In my calculation of the market return, I included companies in the S&P 500 that: (1) had either a dividend yield or Value Line long-term earnings projection; and (2) had a Value Line long-term earnings growth rate that was greater than 0% and less than or equal to 20%. Based on an estimated market capitalization-weighted dividend yield of 1.65% and a weighted long-term growth rate of 11.11%, the estimated required market return for the S&P 500 Index is 12.86%.

Q. How does the current expected market return of 12.86% compare to observed historical market returns?

A. Given the range of annual equity returns that have been observed over the past 96 years (shown in Figure 11 below), a current expected return of 12.86% is not unreasonable. In 50 of the past 96 years (*i.e.*, in approximately half of all observations), the realized total equity return was at least 12.86% or greater.

FIGURE 11: REALIZED U.S. EQUITY MARKET RETURNS (1926-2021)[63]



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

A. Yes. I have also considered the results of an Empirical CAPM ("ECAPM" or alternatively referred to as the Zero-Beta CAPM)[64] in estimating the cost of equity for

[63] Depicts total annual returns on large company stocks, as reported in the 2022 Duff & Phelps SBBI Yearbook.

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

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

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

where:

k_e = the required market ROE

β = Adjusted Beta coefficient of an individual security

r_f = the risk-free rate of return

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.[65]

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, Value Line and long-term average Beta coefficients.

[65] *Id.* at 191.

Q. What are the results of your CAPM analyses?

A. As shown in Figure 12 (see also Exhibit AEB-5), my traditional CAPM analysis produces a range of returns from 10.20% to 11.61%. The ECAPM analysis results range from 10.87% to 11.92%.

FIGURE 12: CAPM RESULTS

	Current Risk-Free Rate (3.02%)	Q3 2022 – Q3 2023 Projected Risk-Free Rate (3.48%)	2024-2028 Projected Risk-Free Rate (3.80%)
		CAPM	
Value Line Beta	11.50%	11.57%	11.61%
Bloomberg Beta	10.79%	10.89%	10.95%
Long-Term Avg. Beta	10.20%	10.33%	10.41%
		ECAPM	
Value Line Beta	11.84%	11.89%	11.92%
Bloomberg Beta	11.31%	11.38%	11.43%
Long-Term Avg. Beta	10.87%	10.96%	11.03%

D. Bond Yield Plus Risk Premium Analysis

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

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

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

A. Yes. 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 (decrease), the equity risk premium decreases (increases). 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. If we let authorized ROEs for electric 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.[66]

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

A. Yes. Investors are aware of ROE awards in other jurisdictions, and they consider those awards as a benchmark for a reasonable level of equity returns for utilities of comparable risk operating in other jurisdictions. Because my Bond Yield Plus Risk Premium analysis is based on authorized ROEs for utility companies relative to 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 13 below, from 1992 through May 2022, 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:

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

[66] *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.

Where

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

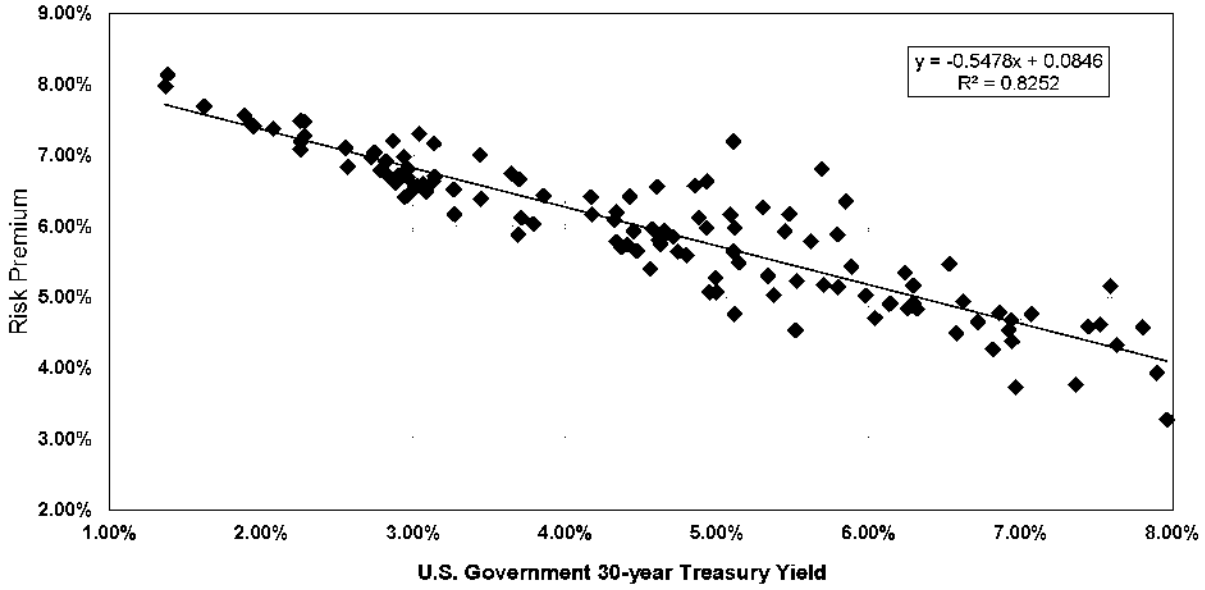
a = intercept term

b = slope term

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

Data regarding allowed ROEs were derived from 885 electric utility rate cases from 1992 through May 2022 as reported by Regulatory Research Associates ("RRA").[67] This equation's coefficients were statistically significant at the 99.00% level.

FIGURE 13: RISK PREMIUM RESULTS



As shown on Exhibit AEB-8, based on the current 30-day average of the 30-year U.S. Treasury bond yield (*i.e.*, 3.02%), the risk premium would be 6.81%, resulting in an

[67] This analysis began with a total of 1,383 cases and was screened to eliminate limited issue rider cases, transmission-only cases, and cases that were silent with respect to the authorized ROE. After applying those screening criteria, the analysis was based on data for 885 cases.

estimated ROE of 9.83%. Based on the near-term (Q3 2022–Q3 2023) projections of the 30-year U.S. Treasury bond yield (*i.e.*, 3.48%), the risk premium would be 6.65%, resulting in an estimated ROE of 10.04%. Based on longer-term (2024–2028) projections of the 30-year U.S. Treasury bond yield (*i.e.*, 3.80%), the risk premium would be 6.38%, resulting in an estimated ROE of 10.18%.

Q. How did the results of the Bond Yield Plus Risk Premium inform your recommended ROE for CMP?

A. I have considered the results of the Bond Yield Plus Risk Premium analysis in setting my recommended ROE for CMP. As noted above, investors consider the ROE determination by a regulator when assessing the risk of that company as compared to utilities of comparable risk operating in other jurisdictions. The risk premium analysis takes into account this comparison by estimating the return expectations of investors based on the current and past ROE awards of electric utilities across the U.S.

VIII. REGULATORY AND BUSINESS RISKS

Q. Do the DCF, CAPM, and ECAPM results for the proxy group, taken alone, provide an appropriate estimate of the cost of equity for CMP?

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

A. Capital Expenditures

Q. Please summarize the projected capital expenditure requirements for CMP.

A. The distribution capital expenditure projections for CMP are approximately $984 million for the period from 2022 through 2026. As discussed in the Capital Investment panel testimony, the Company's capital plan includes expenditures to enhance reliability, increase system resiliency, expand the system to accept load growth resulting from beneficial electrification, increase distributed generation and address aging infrastructure.[68] Based on the Company's net utility plant of approximately $1,418.82 million as of December 31, 2021, the $984 million anticipated capital expenditures is approximately 69.37% of CMP's net utility plant as of December 31, 2021.

Q. How are the Company's risk profile affected by their 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 significant 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

[68] Testimony for Capital Investment Panel.

and, therefore, credit ratings. To that point, S&P explains the importance of regulatory support for large capital projects:

> 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.[69]

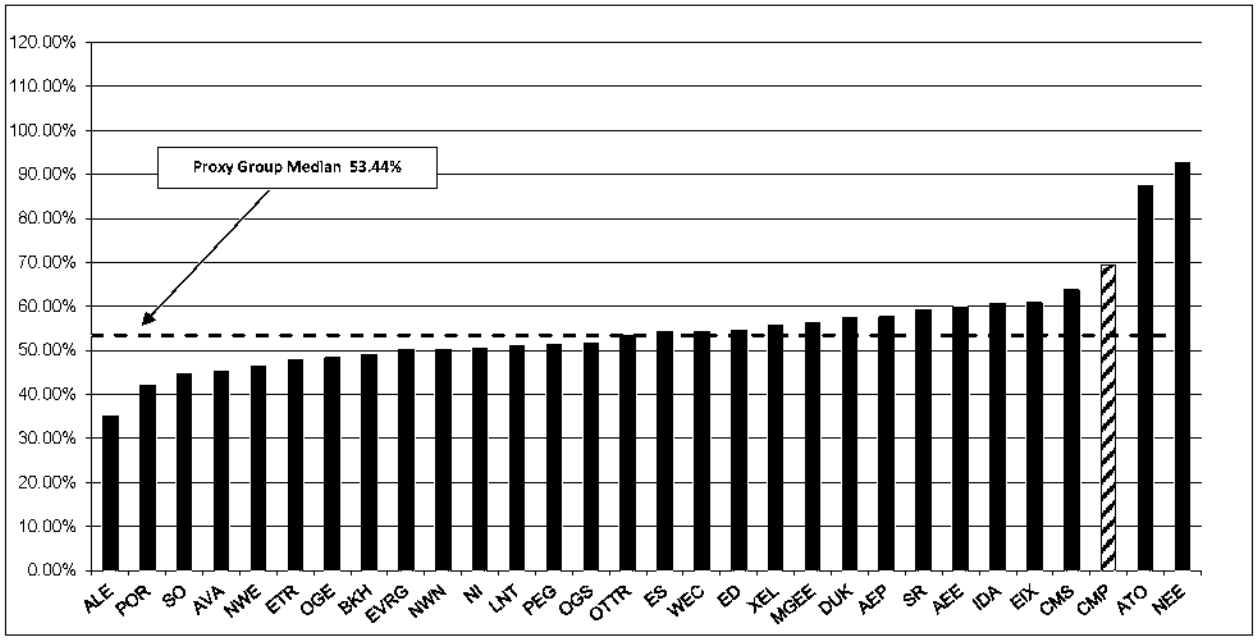
Therefore, to the extent that the Company's rates do not permit the opportunity to recover its capital investments on a regular and timely basis, the Company will face increased recovery risk and thus increased pressure on its credit metrics.

Q. Have you conducted any analysis of the Company's projected capital expenditures relative to the proxy companies?

A. As shown at Exhibit AEB-9, I calculated the ratio of expected capital expenditures to net utility plant for CMP and each of the companies in the proxy group by dividing each company's projected capital expenditures for the period 2022-2026 by its total net utility plant as of December 31, 2021. As shown at Exhibit AEB-9 (see also Figure 14 below), CMP's ratio of capital expenditures as a percentage of net utility plant of 69.37% is approximately 1.30 times the median for the proxy group companies of 53.44%. This result indicates greater risk relative to the companies in the proxy group.

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

FIGURE 14: COMPARISON OF CAPITAL EXPENDITURES – 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. CMP's capital expenditure requirements as a percentage of net utility plant are significant and are proposed to continue over the next few years. Historically, CMP has relied entirely on rate case filings for capital cost recovery. In this proceeding, CMP is proposing to recover capital investments through a combination of annual price increases based on forecast plant additions for base projects and programs during each year of the multi-year rate plan and reconciling mechanisms for certain incremental programs. More timely recovery through appropriate rate mechanisms has been relied upon in the industry for significant capital programs. As shown in Exhibit AEB-10, 56.94% of the companies in the proxy group have some form of capital cost recovery mechanisms in place. Therefore, CMP's proposed recovery of capital expenditures is generally consistent with the proxy group companies and therefore would not result in any difference in risk when

compared to the group. However, to the extent that more timely recovery was not authorized, CMP's relative risk would be greater than the proxy group.

B. Regulatory Environment

Q. Please explain how the regulatory framework 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 services, the subject utility must have the opportunity to recover invested capital and the market-required return on such capital. Regulatory commissions recognize that because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms, which balances the long-term interests of investors and customers. In that respect, the regulatory framework in which a utility operates is one of the most important factors considered in both debt and equity investors' risk assessments.

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

From the perspective of equity investors, the authorized return must be adequate to provide a risk-comparable return on the equity portion of the Company's capital investments. Because equity investors are the residual claimants on the Company's cash flows (that is, debt interest must be paid prior to any equity dividends), equity investors

are particularly concerned with the regulatory framework in which a utility operates and its effect on future earnings and cash flows.

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

A. Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings.

In the rating agency's evaluation of CMP, Moody's relies on its ratings methodology for Regulated Electric and Gas Networks. The criteria used for networks are based on five key factors: (1) regulatory environment and asset ownership model; (2) scale and complexity of capital program; (3) financial policy; (4) leverage and coverage metrics, and (5) structural considerations and sources of rating uplift from creditor protection. Of these criteria, regulatory environment and asset ownership model is assigned 40.00E. Within that weighting, stability and predictability of regulatory regime and cost and investment recovery (the ability to recover and the timeliness of recovery) are each given a weighting of 15.00%. Leverage and coverage ratios and metrics are also weighted a total of 40.00%. Therefore, Moody's assigns regulatory risk a very significant overall weighting.[70]

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

[70] Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Networks, March 16, 2017, at 4.

utility operates."[71] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory environment in which investor-owned regulated utilities operate: (1) regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[72]

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. As noted by Moody's:

> We consider the characteristics of the regulatory environment in which a network operates. These include how developed and transparent the regulatory framework is; the strength of the political and legal underpinnings of the regulatory framework; the regulator's track record for predictability and stability in terms of decision making; its independence from political interference; and our forward looking view on whether these conditions will continue to persist. In addition, this sub-factor also considers the effectiveness of the independent body or legal system that can arbitrate disputes between a regulator and a regulated company in a timely fashion.[73]

Moody's further highlighted the relevance of a stable and predictable regulatory environment to a utility's credit quality, noting: "the predictability and supportiveness of the regulatory framework in which a network operates - as well as the legal and political framework that underpins it – is a key credit consideration and one that differentiates this sector from most other corporate sectors."[74]

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[71] 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.

[72] *Id.* at 1.

[73] Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Networks, March 16, 2017, at 8.

[74] *Id.* at 7

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

A. Yes. I have evaluated the regulatory framework in Maine considering two factors which are important to ensuring CMP maintains access to capital at reasonable terms. As I will discuss in more detail below, the two factors are: (1) cost recovery mechanisms which allow a utility to recover costs in a timely manner between rate cases and provide the utility the opportunity to earn its authorized return; and (2) comparable return standard[75] because an awarded ROE that is significantly below the ROEs awarded to other utilities with comparable risks can affect the ability of a utility to attract capital at reasonable terms.

1. Cost Recovery Mechanisms

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

A. Yes. I selected four mechanisms that are important to provide a regulated utility an opportunity to earn its authorized ROE. These are: (1) test year convention (*i.e.*, forecast vs. historical); (2) method for determining rate base (*i.e.*, average vs. year-end); (3) use of revenue decoupling mechanisms or formula-based rates that mitigate volumetric risk; and (4) prevalence of capital cost recovery between rate cases. The results of this cost recovery assessment are shown in Exhibit AEB-10 and are summarized below:

- Test year convention: CMP is proposing a forward looking rate plan that escalates from the test-year to each rate year and a multi-year capital plan. However, the

[75] *Hope* and *Bluefield* require the return be commensurate with returns on investments in enterprises with similar risk.

Commission has authorized a historical test-year escalated to the rate year based on the 5-year compound annual growth in plant additions and the escalation of O&M costs to the rate year. As shown in Exhibit AEB-10, 51.39% of the proxy group provide service in jurisdictions that use a fully or partially forecast test year. Forecast test years have been relied on for several years and produce cost estimates that are more reflective of future costs which results in more accurate recovery of incurred costs and mitigates the regulatory lag associated with historical test years.

- Rate base: CMP's rate base in Maine is determined based on the average of the beginning and ending test year rate base balances, while as shown in Exhibit AEB-10, 44.44% of the operating companies held by proxy group relied on a year-end rate base as the test year. The year-end methodology means that the rate base includes capital additions that occurred in the second half of the test year and is more reflective of total net utility plant going forward.
- Non-Volumetric Rate Design: CMP does have protection against volumetric risk in Maine, through a revenue decoupling mechanism that was approved for continuation in the Company's last rate case. Similarly, 89 out of 144 (61.81%) of the operating companies held by the proxy group have non-volumetric rate design through either straight fixed variable rate design, revenue decoupling mechanisms or formula rate plans that allow them to break the link between customer usage and revenues.
- Capital Cost Recovery: As discussed above, CMP is proposing to recover capital investments through a combination of annual price increases based on forecast plant additions for base projects and programs during each year of the multi-year rate plan and reconciling mechanisms for certain incremental programs. As shown in Exhibit

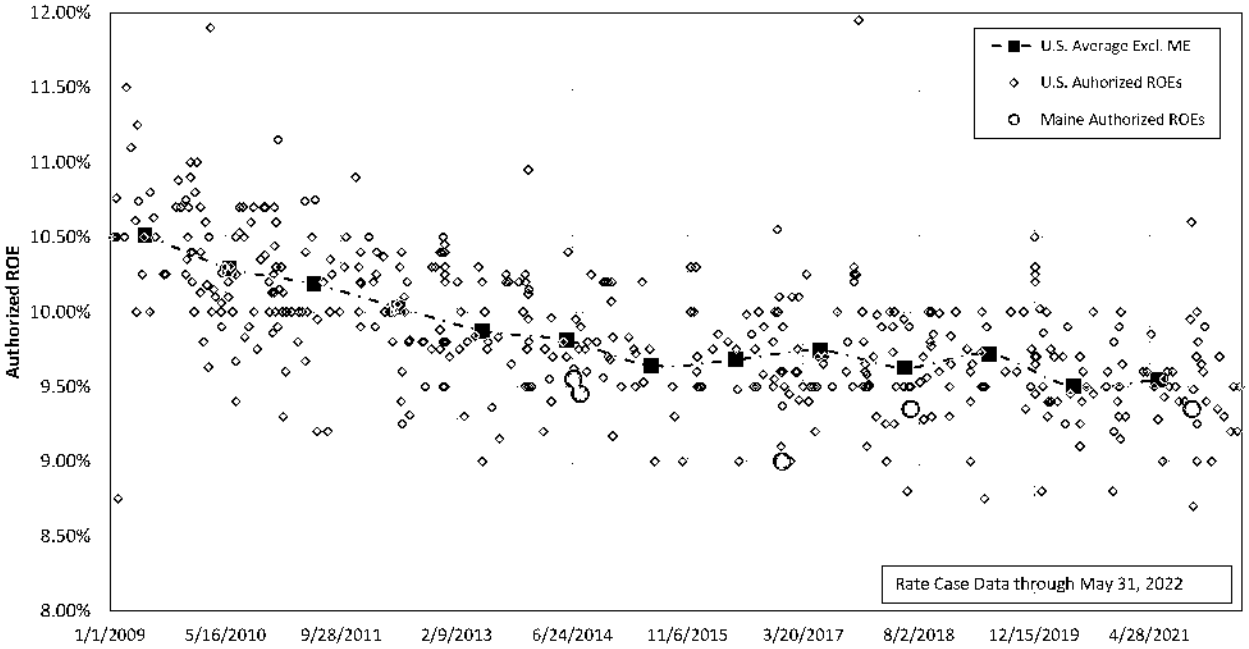
AEB-10, 56.94% of the operating companies held by the proxy group have some form of capital cost recovery mechanism in place.

2. Authorized ROEs

Q. How do recent returns in Maine compare to the authorized returns in other jurisdictions?

A. The Commission has historically relied primarily on the results of the DCF analysis with results of the CAPM model used as a check on the reasonableness of the DCF results. This practice has reduced the authorized ROE for electric utility operations in Maine. Figure 15 below shows the authorized returns for electric utilities in other jurisdictions since January 2009, and the returns authorized in Maine for electric utilities. As shown in Figure 15, the authorized returns for electric utilities in Maine have been below the average authorized ROE for electric utilities in other jurisdictions since 2009.

FIGURE 15: COMPARISON OF MAINE AND U.S. AUTHORIZED ELECTRIC RETURNS[76]



1 **Q. Should the Commission be concerned about authorizing equity returns that are at**
2 **the low end of the range established by other state regulatory jurisdictions?**
3 A. Yes. Placing CMP at the low end of authorized ROEs outside Maine over the longer
4 term can negatively affect the Company's access to capital and the overall cost of capital.
5 As I discuss below, the recent negative rate case determination, including a below
6 average authorized ROE, for Arizona Public Service resulted in a 24% decline in the
7 share price for Pinnacle West Capital, increasing the overall cost of equity for that
8 company.

[76] S&P Capital IQ Pro. Electric rate case decisions from January 1, 2009 through May 31, 2022. The chart does not display the 12.88% ROE that was authorized for Alaska Electric Light and Power on September 2, 2011. The chart also excludes the authorized returns in Illinois and Vermont since they are established based on a formulaic approach that is directly linked to interest rates and therefore is affected by market conditions and monetary policy. Finally, the chart excludes the authorized ROE for CMP in the Company's last rate case of 8.25% because the authorized return included a 100 basis point ROE penalty.

Second, as noted in Sections V and VII, interest rates are expected to increase as the Federal Reserve normalizes monetary policy, and thus utilities are expected to underperform over the near-term. If utility stocks underperform over the near-term then utility dividend yields will increase resulting in higher estimates of the ROE results produced by the DCF model. Therefore, the results of the DCF model using current market information will underestimate investors' expected ROE over the time period in which CMP's rates will be in effect. As a result, it is important that the Commission consider, the results of alternative methods such as the forward looking CAPM, ECAPM, and Bond Yield Plus Risk Premium and the returns that have been authorized by other electric utilities across the U.S.

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

A. Yes, they do. To the extent that the returns in a jurisdiction are lower than the returns that have been authorized more broadly, credit rating agencies will consider this in the overall risk assessment of the regulatory jurisdiction in which the company operates. It is important to consider credit ratings because they affect the overall cost of borrowing, and they act as a signal to equity investors about the risk of investing in the equity of a company. Therefore, lower credit ratings can affect both the cost of debt and equity. Examples of recent credit rating agency responses include ALLETE, Inc., CenterPoint Energy Houston Electric and Pinnacle West Capital Corporation. Moody's downgraded ALLETE, Inc. from A3 to Baa1 primarily based on the less than favorable outcome in Minnesota Power's last fully litigated rate case in Minnesota which included what

Moody's noted was a below average authorized ROE of 9.25%.[77] In addition, FitchRatings downgraded CenterPoint Energy Houston Electric's ("CEHE") Long-Term Issuer Default rating from A- to BBB+ and revised the rating outlook from Stable to Negative following the approval of an unfavorable outcome in a recent rate case in Texas.[78] Finally, FitchRatings recently downgraded and maintained a negative outlook for Arizona Public Service Company ("APS") and its parent, Pinnacle West Capital Corporation, following the hearings conducted by the Arizona Corporation Commission ("ACC") in October 2021 regarding APS' current rate case proceeding.[79] While the ACC had not issued a final order in APS' rate case at the time, FitchRatings noted that the developments at the hearing in October indicate a likely credit negative outcome that will negatively affect the financial metrics of both APS and Pinnacle West Capital Corporation. It is also important to note that both Standard & Poor's and Moody's downgraded Pinnacle West Capital's and APS' credit rating and put the companies on credit watch negative following the Commission's November vote that officially authorized the 8.70% ROE.[80]

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

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

[79] FitchRatings, "Fitch Downgrades Pinnacle West Capital & Arizona Public Service to 'BBB+'; Outlooks Remain Negative," October 12, 2021.

[80] *See* S&P Capital IQ and Moody's Investors Service, "Rating Actions: Moody's downgrades Pinnacle West to Baa1 and Arizona Public Service to A3; outlook negative," (Nov. 17, 2021).

Q. Are you aware of any utilities whose market data has been affected by adverse rate case developments?

A. Yes, I am. The market has responded negatively to recent returns authorized by the ACC. As noted above, the most recent ROE determination in Arizona was for APS. The Recommended Opinion and Order ("ROO") issued in the APS rate proceeding on August 2, 2021, recommended an ROE of 9.16%. In October 2021, that recommendation was amended to reduce the company's ROE to 8.70%.[81] The final ROE that was established for APS was 8.70%. The market reacted strongly to the proposed order and subsequent amendment and final decision. Guggenheim Securities LLC, an equity analyst that follows Pinnacle West Capital Corporation, the parent company of APS, informed its clients that:

> [T]he "Arizona Corporation Commission is now confirmed to be the single most value destructive regulatory environment in the country as far as investor-owned utilities are concerned".[82]

S&P Global Market Intelligence (Regulatory Research Associates) noted that this decision was "among the lowest ROEs RRA had encountered in its coverage of vertically integrated electric utilities in the past 30 years."[83]

As shown in Figure 16 below, Pinnacle West Capital Corporation's stock price declined approximately 24% from August 2, 2021 to November 4, 2021 following the issuance of the ROO, which recommended an ROE of 9.16%, and then the subsequent amendment to that opinion recommending the 8.70% ROE ultimately adopted by the

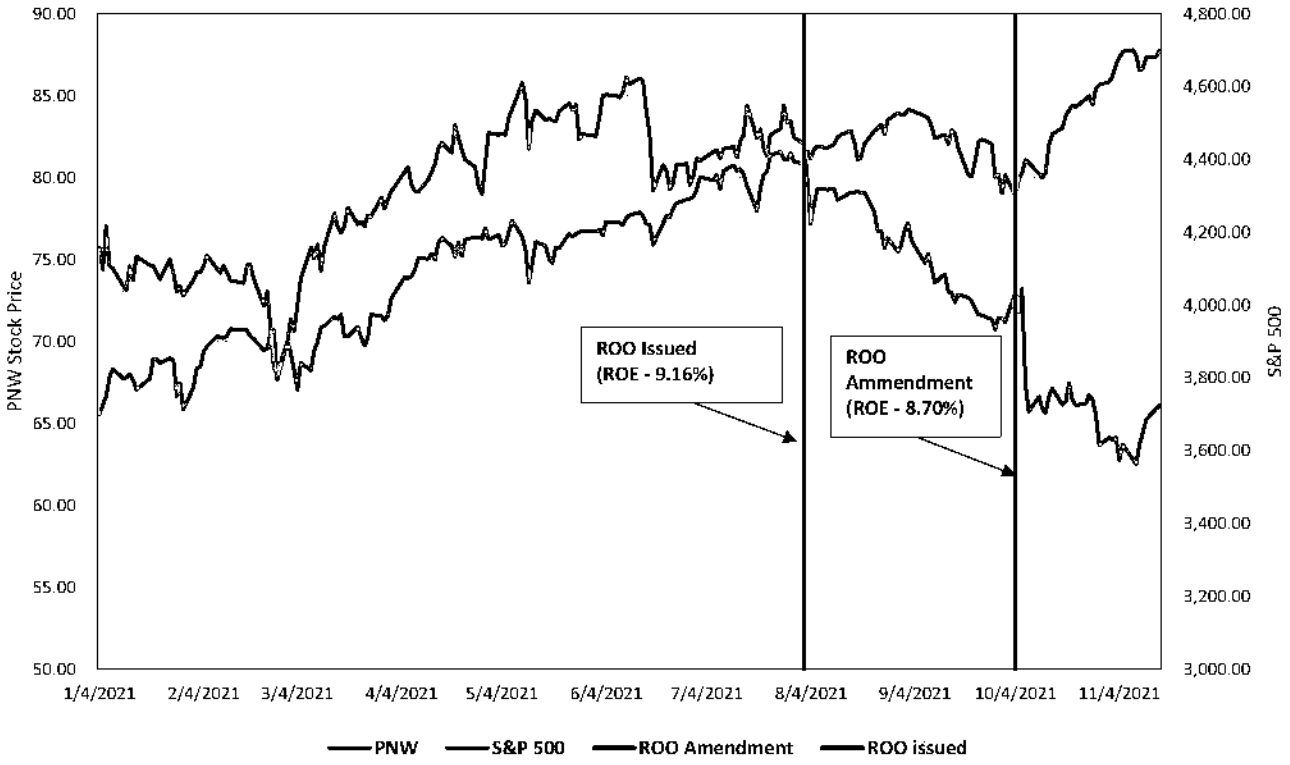
[81] Arizona Corporation Commission Docket No. E-01345A-19-0236, Commissioner Olson Proposed Amendment No. 1 to the Recommended Opinion and Order. October 4, 2021.

[82] S&P Global Market Intelligence, "Pinnacle West shares tumble after regulators slash returns in rate case," October 7, 2021.

[83] S&P Global Market Intelligence, RRA Regulatory Focus, "Commission accords Arizona Public Service Company a well below average ROE," October 8, 2021.

ACC. Moreover, the Value Line five-year projected EPS growth rates for this company have fallen from 5.0% in July 2021, prior to the deliberations in the rate proceeding to "Nil" in October 2021 and most recently 1.5% in April 2022. This recent Value Line report noted that PNW's earnings would "almost certainly decline in 2022" primarily related to the APS rate order. For PNW, the APS decision has had a significant effect on the share price and growth rate assumptions used in the DCF model.

FIGURE 16: PINNACLE WEST CAPITAL STOCK PRICE VS. S&P 500 UTILITIES



Q. How should the Commission use the information regarding authorized ROEs in other jurisdictions in determining the ROE for CMP?

A. As discussed above, the companies in the proxy group operate in multiple jurisdictions across the U.S. Since CMP must compete directly for capital with investments of similar risk, it is appropriate to review the authorized ROEs in other jurisdictions. The

comparison is important because investors are considering the authorized returns across the U.S. and are likely to invest equity in those utilities with the highest returns.

3. Regulatory Risk

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

A. Yes. I have conducted two additional analyses to compare the regulatory framework of Maine to the jurisdictions in which the companies in the proxy group operate. Specifically, I considered two different rankings: (1) the Regulatory Research Associates ("RRA") ranking of regulatory jurisdictions; and (2) S&P's ranking of the credit supportiveness of regulatory jurisdictions.

Q. Please explain how you used the RRA ratings to compare the regulatory jurisdictions of the proxy companies with the Company's regulatory jurisdiction.

A. RRA develops its ranking based on its assessment of how investors perceive the regulatory risk associated with ownership of utility securities in that jurisdiction, specifically reflecting its assessment of the probable level and quality of earnings to be realized by the State's utilities as a result of regulatory, legislative, and court actions. RRA assigns a ranking for each regulatory jurisdiction between "Above Average/1" to "Below Average/3," with nine total rankings between these categories. I applied a numeric ranking system to the RRA rankings with "Above Average/1" assigned the highest ranking ("1") and "Below Average/3" assigned the lowest ranking ("9"). As shown on Exhibit AEB-11, the Maine jurisdictional ranking ("Average/3" – "6.0") was below the proxy group average ranking ("Average/1 – Average/2" – "4.63") from RRA.

Q. Has RRA provided recent commentary regarding its regulatory ranking for the Maine?

A. Yes, they have. In fact, in March 2020, RRA downgraded the regulatory environment ranking for Maine from Average/2 to Average/3. RRA recently noted the following:

> Maine regulation of energy utilities is somewhat restrictive from an investor viewpoint. The PUC's ROE determinations, historically, have been somewhat below prevailing industry averages when established. In a rate case for Central Maine Power, or CMP, the PUC imposed a penalty to reflect "imprudent" management decisions with respect to a new billing system. The penalty reduced the utility's authorized ROE below the average of ROEs authorized by state commission in cases decided in 2019, and was the lowest equity return authorization for an electric utility nationwide since RRA began tracking equity returns in the 1980s. The penalty was removed in February 2022. The PUC has generally relied on an average original-cost rate base for an historical test period adjusted for known-and-measurable changes, which tends to contribute to regulatory lag and makes it difficult for the utilities to earn the authorized return. Full decoupling mechanisms are in place for the electric utilities, a mechanism is also in place for one electric utility that reflects costs of significant weather events and one of the state's gas utilities uses a targeted infrastructure replacement adjustment mechanism that provides for recovery of certain operational and safety-related infrastructure replacement and upgrade projects. The state took a constructive approach to electric industry restructuring. Full electric retail competition has been in place since 2000. The investor-owned utilities were required to divest most of their non-nuclear generation assets, and are being accorded a reasonable opportunity to recover stranded costs, albeit over an extended timeframe. The power to meet standard-offer-service requirements is procured through a PUC-administered competitive bid and is provided by third parties; therefore, the utilities have no exposure to market-price risk. Historically, natural gas service has been limited in the state, and over the last several years, the commission has adopted innovative pricing and regulatory mechanisms to encourage gas industry development. Cost-of-gas adjustment mechanisms are utilized by the state's gas utilities. Legislation enacted in 2019 amended the PUC's standard of approval for public utility corporate reorganizations to a "net benefits" standard from a "no net harm" standard. RRA accords Maine regulation an Average/3 ranking.[84]

[84] Regulatory Research Associates, Profile of Maine Public Utilities Commission, accessed June 30, 2022.

Q. How did you conduct your analysis of the S&P credit supportiveness?

A. For credit supportiveness, S&P classifies each regulatory jurisdiction into five categories that range from "Credit Supportive" to "Most Credit Supportive." My analysis of the credit supportiveness of the regulatory jurisdictions that the proxy companies operate in, as compared with the Company's regulatory jurisdiction, was similar to the analysis of the RRA overall regulatory ranking discussed above. I assigned a numerical ranking to each category, from Most Credit Supportive ("1") to Credit Supportive ("5"). As shown in Exhibit AEB-12, the proxy group average ranking was 2.43, which would be classified between "Highly Credit Supportive" and "Very Credit Supportive", and is generally consistent with the Maine jurisdictional classification of "Highly Credit Supportive" ("2").

Q. What is your conclusion regarding the regulatory framework in Maine as compared with the jurisdictions in which the proxy group companies operate?

A. As discussed throughout this section of my testimony, both Moody's and S&P have identified the supportiveness of the regulatory environment as an important consideration in developing their overall credit ratings for regulated utilities. Considering the regulatory adjustment mechanisms, many of the companies in the proxy group have timely cost recovery through forecasted test years, year-end rate base, cost recovery trackers and revenue stabilization mechanisms. Additionally, authorized ROEs in Maine have been below the average authorized ROEs for electric utilities across the U.S. Moreover, RRA recently downgraded the RRA jurisdictional ranking for Maine; thus a comparison of Maine's RRA jurisdictional ranking to the proxy group indicates greater risk than the average for the proxy group. For these reasons, I conclude that CMP has

greater than average regulatory risk when compared to the proxy group, indicating that the authorized ROE for CMP should be higher than the proxy group median.

IX. 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 are 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 CMP's proposed capital structure?

A. The Company is proposing a hypothetical capital structure consisting of 50.00% common equity, 48.87% long-term debt, 0.02% preferred equity, and 1.11% short-term debt.

Q. Is the Company's proposed hypothetical equity ratio consistent with the Company's actual equity ratio?

A. No, it is not. As shown in Figure 17 below, CMP's actual equity ratio has ranged from 53.60% to 59.57% over the period from 2013-2021. As a result, the Company's proposed hypothetical capital structure is well below the actual equity ratio of the Company.

FIGURE 17: HISTORICAL CMP EQUITY RATIO

Year	Year End Equity Ratio
2013	54.66%
2014	53.60%
2015	55.27%
2016	57.67%
2017	59.57%
2018	59.08%
2019	58.58%
2020	57.88%
2021	58.97%
Average	57.25%

Q. Why is the Company proposing that a hypothetical capital structure be used for ratemaking purposes as opposed to the Company's actual capital structure?

A. The Commission has historically relied on the use of a hypothetical capital structure consisting of 50% common equity for CMP.[85] Therefore, the Company has proposed a hypothetical capital structure that is consistent with the Commission's prior decisions for the Company.

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

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

[85] CMP, Investigation into Rates and Revenue Requirements of Central Maine Power Company, Docket No. 2018-00194, Order, (February 19, 2020) at 87.

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

A. I calculated the mean proportions of common equity and long-term debt for the most recent four years (2018-2021) for each of the companies in the proxy group at the operating subsidiary level. My analysis of the capital structures of the proxy group companies is provided in Exhibit AEB-13. As shown in Exhibit AEB-13, the equity ratios for the proxy group ranged from 44.95% to 63.58%, with an average of 54.10%. CMP's proposed equity ratio of 50.00% is well below the average equity ratio for the utility operating subsidiaries of the proxy group.

Q. Why is it appropriate to consider the equity ratio for the proxy companies?

A. As noted above, the determination of the ROE is based on the expected return for a proxy group of companies that are comparable in risk to CMP. The equity ratio is a measure of the financial risk of the company, and the authorized ROE is the return to compensate investors for that risk. If the Commission is going to rely on the ROE estimates for the proxy companies to establish the authorized ROE for CMP, it is important that the financial risk of CMP be similar to the financial risk of the proxy group. This is accomplished when the equity ratio of the subject company (in this case CMP) is comparable to the equity ratios of the proxy group.

Q. Have you reviewed any academic literature that provides support for the use of capital structures of the proxy group companies in determining the reasonableness of the subject company's capital structure?

A. Yes, I have. Dr. Morin noted that the use of a hypothetical capital structure is only appropriate if the estimated cost of equity based on current investor expectations is adjusted to account for the change from the company's actual capital structure (*i.e.*, the

capital structure expected by investors) to the hypothetical capital structure.[86] As noted above, in the current proceeding the cost of equity for CMP is being estimated based on the expected return for a proxy group of companies that are of comparable risk to CMP. Therefore, the estimated cost of equity is based on the financial risk of the proxy group which is in turn measured by the capital structure. If the company's equity ratio were to deviate from the proxy group then an adjustment to the cost of equity would be needed to account for the difference in financial risk. Dr. Morin noted the importance of adjusting for the difference in financial risk:

> [i]f a regulator were to impute a capital structure consisting of substantially more (less) debt than the rate year capital structure, the higher (lower) common equity cost rate related to the changed common equity ratio should be reflected in the approach. If the regulator ascribes a capital structure different from the test year capital structure, which imputes a higher debt amount for example, the repercussions on equity costs must be recognized. It is a rudimentary tenet of basic finance that the greater the amount of financial risk borne by common shareholders, the greater the return required by shareholders in order to be compensated for the added financial risk imparted by the greater use of debt financing. In other words, the greater the debt ratio, the greater is the return required by equity investors. Both the cost of incremental debt and the cost of equity must be adjusted to reflect the additional risk associated with the more debt-heavy capital structure. Lower common equity ratios imply greater risk and higher capital cost, and conversely.[87]

Q. Would the use of the Company's proposed 50% hypothetical equity ratio have any implications for the Company's ROE?

A. Yes. The average equity ratio of the proxy companies is well above 50.00%, which means that, all else equal, the proxy companies have lower financial risk than is implied by the Company's hypothetical 50.00% equity ratio. Given this risk differential and the significance of the overall ROE/capital structure determination to the Company's

[86] Dr. Roger Morin, *Modern Regulatory Finance*, 2021, at 541

[87] Dr. Roger Morin, *Modern Regulatory Finance*, 2021, at 541

continuing ability to access capital, the use of a hypothetical capital structure consisting of 50% equity would support an ROE towards the higher-end of my recommended ROE range.

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

A. Yes. The credit rating agencies' response to the Tax Cuts and Jobs Act of 2017 (TCJA) must also be considered when determining the equity ratio. All three rating agencies have noted that the TCJA has negative implications for utility cash flows. S&P and Fitch specifically identified increasing the equity ratio as one approach to ensure that utilities have sufficient cash flows following the federal income tax rate reductions and the loss of bonus depreciation. As S&P noted "[r]egulators must also recognize that tax reform is a strain on utility credit quality, and we expect companies to request stronger capital structures and other means to offset some of the negative impact."[88] Furthermore, Moody's downgraded the rating outlook for the entire utilities sector in June 2018 and has continued to downgrade the ratings of utilities based in part on the negative effects of the TCJA on cash flows.

S&P continues to maintain a negative outlook for the utility industry in 2022 and noted that since downgrades outpaced upgrades for a second consecutive year in 2021 for the first time ever the median investor-owned utility credit rating fell to the "BBB" category.[89] Further, S&P expects continued pressure on cash flows over the near-term as utilities continue to increase leverage to fund capital expenditure plans necessary to reduce greenhouse gas emission and improve safety and reliability. Finally, S&P also

[88] Standard & Poor's Ratings, "U.S. Tax Reform: For Utilities' Credit Quality, Challenges Abound," January 24, 2018, at 5.

[89] S&P Global Ratings, "For the First Time Ever, the Median Investor-Owned Utility Ratings Falls to the 'BBB' Category," January 20, 2022.

highlighted inflation, higher interest rates and rising commodity prices as additional risks that could further constrain the credit metrics for utilities over the near-term. In regards to inflation S&P noted:

> Inflation recently spiked to its highest level in decades after rising for several consecutive months in 2021. Given the sustained increase to the U.S. consumer price index in 2021, inflation no longer appears to be just transitory and may have financial implications for the investor-owned North American regulated utility industry. Because of the regulatory lag within the industry, inflation, which causes prices to rise, typically leads to a weakening of financial performance. The regulatory lag is the timing difference between when costs are incurred and when regulators allow those costs to be fully recovered from ratepayers.[90]

The credit ratings agencies' continued concerns over the negative effects of the TCJA, inflation, and increased capital expenditures underscore the importance of maintaining adequate cash flow metrics for the industry, as a whole, and CMP, particularly, in the context of this proceeding.

Q. What is your conclusion regarding CMP's proposed equity ratio?

A. Considering the actual capital structures of the proxy group operating companies, I believe that CMP's proposed hypothetical common equity ratio of 50.00% is reasonable. The proposed equity ratio is well below the average equity ratio established by the capital structures of the utility operating subsidiaries of the proxy companies, which would suggest that CMP has greater financial risk than the proxy group. This proposed capital structure would support an ROE towards the high-end of my recommended ROE range. Finally, based on the cash flow concerns raised by credit rating agencies as a result of the TCJA, inflation, and increased capital expenditures, it is reasonable to rely on a higher equity ratio than the Company may have relied on in prior rate cases.

[90] *Ibid.*

X. MULTI-YEAR RATE PLAN

Q. Are you aware that the Company is filing a multi-year rate plan?

A. As discussed in the Policy Panel testimony, the Company is proposing a multi-year rate plan to support the capital investment plan required to build the smarter, stronger and more resilient grid needed to provide safe and reliable service going forward in the face of increasing extreme weather events, aging plant and additional customer expectations and to meet the State of Maine's clean energy and climate policies.

Q. Have current market conditions increased the risk of a multi-year stay-out for the Company?

A. Yes. While a multi-year plan provides a solution to achieve these objectives more efficiently than filing more frequent rate cases, current market conditions have increased the risk of a multi-year stay-out for the Company. As noted earlier in my testimony, inflation is at the one of the highest level seen since 1981; 9.0% in June 2022. In response, the Federal Reserve is currently normalizing monetary policy which will result in increases in long-term interest rates over the near-term. As a result, in the current market environment, there is additional risk that the authorized ROE for the latter years of a multi-year rate plan will be lower than investors' future requirements as interest rates are expected to increase.

Q. Have you conducted any analysis as to the expected return on equity over the period that the Company is proposing for its multi-year rate plan?

A. Yes. As discussed in Section VII of my testimony, the CAPM and ECAPM analysis shown in Exhibit AEB-5 estimates the projected yields on 30-year Treasury bonds over the period from 2024 - 2028 as the risk-free rate and results in an estimated cost of equity range of 10.41% to 11.92%.

Moreover, as also discussed in Section VII, it is possible to use the Bond Yield Plus Risk Premium analysis to estimate the historical relationship between bond yields and the market risk premium. As shown in Exhibit AEB-8, the regression equation indicates that for every 100 basis point change in the yield on 30-year treasury bonds, the risk premium moves in an opposite direction by about 55 basis points. This relationship implies that for every 100 basis point change in Treasury rates, the ROE will change in the same direction by about 45 (100-55) basis points. Considering the projected 30-year Treasury bond yield over the period from 2024–2028, the Bond Yield Plus Risk Premium produces an ROE estimate of 10.18% which is 35 basis points greater than the estimate of the ROE of 9.83% produced by the Bond Yield Plus Risk Premium Analysis relying on the current average of the 30-year Treasury bond yield.

Q. What are your conclusions regarding the Company's proposed multi-year rate plan and its effect on the ROE for CMP?

A. Inflation is currently at its highest level seen in approximately 40 years and is expected to remain elevated over the near-term. Thus, investors expect interest rates to increase over the near-term. Because the share prices of utilities are inversely correlated with interest rates, the utility sector is expected to underperform and therefore, estimates of the ROE using current market data are likely to understate the ROE during CMP's proposed multi-year rate period. As a result, the Commission should adopt an ROE which is based on the use of forward looking data to ensure the Company can attract capital on reasonable terms, under varying market conditions, during the period that rates will be in effect. The Company is requesting an ROE of 10.20% which is below the midpoint of my recommended ROE range and therefore a conservative estimate of the investor-required return over the three-year multi-year rate period. However, as the Company explains

elsewhere in testimony, the selection of 10.20% is intended to be sensitive to current economic circumstances affecting its customers at this time.

XI. CONCLUSIONS AND RECOMMENDATIONS

Q. What is your conclusion regarding a fair ROE for CMP?

A. Figure 18 below provides a summary of my analytical results for the proxy group. Based on these results, it is my view that a reasonable ROE for the Company is within the range of 9.75% to 11.25%. Considering the qualitative analyses presented in my testimony, the business and financial risks of CMP compared to the proxy group, current conditions in capital markets including the expectation for rising interest rates and increasing inflationary pressure, and the Company's proposed capital structure, I conclude that the ROE would reasonably be set above the midpoint of this range. However, the Company is requesting an ROE of 10.20%, which is below the midpoint of my recommended range, in order to take into consideration the effects of currently high inflationary pressures on customers.

FIGURE 18: SUMMARY OF ANALYTICAL RESULTS

Constant Growth DCF			
	Mean Low	Mean	Mean High
30-Day Average	8.06%	9.17%	10.28%
90-Day Average	8.12%	9.24%	10.35%
180-Day Average	8.24%	9.35%	10.47%
	Median Low	Median	Median High
30-Day Average	7.94%	9.07%	9.80%
90-Day Average	8.03%	9.11%	9.91%
180-Day Average	8.30%	9.21%	10.06%

CAPM			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.50%	11.57%	11.61%
Bloomberg Beta	10.79%	10.89%	10.95%
Long-Term Avg. Beta	10.20%	10.33%	10.41%

ECAPM			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.84%	11.89%	11.92%
Bloomberg Beta	11.31%	11.38%	11.43%
Long-Term Avg. Beta	10.87%	10.96%	11.03%

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 Results	9.83%	10.04%	10.18%

Q. What is your conclusion regarding the Company's proposed common equity ratio?

A. I conclude that CMP's proposed hypothetical rate-making capital structure composed of 50.00% common equity, 48.87% long-term debt, 0.02% preferred equity, and 1.11% short-term debt is reasonable and should be adopted. This conclusion is supported by a review of the proxy group capital structures, inflation, the ongoing effect of the TCJA, and increased capital expenditures on cash flows.

Q. Does this conclude your testimony at this time?

A. Yes, it does.

PRE-FILED DIRECT TESTIMONY

OF

ANN E. BULKLEY

Cost of Capital

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DIRECT TESTIMONY OF ANN E. BULKLEY

I. Introduction

Q. Please state your name, affiliation, and business address.

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

Q. On whose behalf are you submitting this testimony?

A. I am submitting this pre-filed direct testimony before the Massachusetts Department of Public Utilities (the "Department") on behalf of Massachusetts Electric Company ("Mass. Electric") and Nantucket Electric Company ("Nantucket Electric") each d/b/a National Grid (together, "National Grid" or the "Company").

Q. Please describe your education and experience.

A. I hold a Bachelor of Art degree in Economics and Finance from Simmons College and a Master of Art degree in Economics from Boston University, with over 25 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. My resume and a summary of testimony that I have filed in other proceedings are provided in Appendix A.

II. Purpose of Testimony

Q. What is the purpose of your pre-filed direct testimony?

A. The purpose of my direct testimony is to present evidence and provide a recommendation regarding the appropriate return on equity ("ROE") for the Company. I also assess the reasonableness of the Company's projected capital structure and cost of debt. Lastly, I discuss the Company's proposal for exogenous treatment of the recovery of the Company's long-term debt costs given that interest rates have been volatile and are unpredictable over the five-year term of the proposed rate plan.

Q. Briefly, what are the analyses you have conducted and what factors have you considered that support your recommended ROE for the Company in this proceeding?

A. I have estimated the Company's cost of equity by applying traditional estimation methodologies to a proxy group of comparable utilities, including the constant growth and the multi-stage forms of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and the Bond Yield Plus Risk Premium ("BYRP") analysis. My recommendation also takes into consideration the Company's Comprehensive Performance and Investment Plan ("CPI Plan") and the components of the Company's proposed multi-year rate plan, as presented in the pre-filed direct testimony of the CPI Plan Panel at Exhibit NG-CPIP-1. I also considered the Company's proposed capital structure as compared to the capital structures of the utility operating companies of the proxy group. While I do not make specific

adjustments to my ROE recommendation for these factors, I did consider them in the aggregate when determining where my recommended ROE falls within the range of the analytical results.

Q. How is the remainder of your testimony organized?

A. The remainder of my testimony is organized as follows:

- Section III provides a summary of my analyses and conclusions.
- Section IV reviews the regulatory guidelines pertinent to the development of the cost of capital.
- Section V discusses current and projected capital market conditions and the effect of those conditions on the cost of equity.
- Section VI explains my selection of the proxy group for the Company.
- Section VII describes my cost of equity estimates and the analytical basis for my recommendation of the appropriate ROE.
- Section VIII 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 IX provides an assessment of the reasonableness of the Company's proposed capital structure relative to the proxy group, the Company's proposed cost of debt and preferred equity, and the Company's proposed treatment of its long-term debt during the term of the rate plan.
- Section X presents my conclusions and recommendations.

Q. Are you sponsoring any exhibits as part of your testimony in this case?

A. Yes. My analyses and recommendations are supported by the data presented in Exhibits NG-AEB-2 through NG-AEB-18, which were prepared by me or under my direction:

- Exhibit NG-AEB-2: Summary of Cost of Equity Model Results
- Exhibit NG-AEB-3: Constant Growth DCF

- Exhibit NG-AEB-4: Multi-Stage DCF
- Exhibit NG-AEB-5: Long-term GDP Growth Rate
- Exhibit NG-AEB-6: CAPM and ECAPM
- Exhibit NG-AEB-7: Long Term Beta
- Exhibit NG-AEB-8: Market Return
- Exhibit NG-AEB-9: Department Market Return
- Exhibit NG-AEB-10: Weighted Market Risk Premium
- Exhibit NG-AEB-11: BYRP Analysis
- Exhibit NG-AEB-12: Capital Expenditures
- Exhibit NG-AEB-13: Capital Tracking Mechanisms
- Exhibit NG-AEB-14: RRA Regulatory Rankings
- Exhibit NG-AEB-15: Capital Structure
- Exhibit NG-AEB-16: Cost of Debt
- Exhibit NG-AEB-17: Overall Rate of Return

III. Summary of Analysis and Conclusions

Q. What are the key factors considered in your analyses and upon which you base your recommended ROE?

A. The key factors that I considered in my cost of equity analyses and recommended ROE for the Company in this proceeding are:

- The United States Supreme Court's Hope and Bluefield decisions[1] that established the standards for determining a fair and reasonable authorized ROE for public utilities, including consistency of the allowed return with the returns of other businesses having similar risk, adequacy of the return to provide access to capital

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