TROPOSPHERE LEGAL

April 23, 2025

Ms. Lisa Felice
Michigan Public Service Commission
7109 W. Saginaw Hwy.
Lansing, MI 48909

Via E-File

RE: MPSC Case No. U-21806

Dear Ms. Felice:

Attached please find the enclosed documents for filing:

- Direct Testimony and Exhibits of Matthew Bandyk on behalf of Citizens Utility Board of Michigan (Exhibit CUB-13 through CUB-20); and
- Proof of Service.

Thank you for your assistance in this matter. If you have any questions, please feel free to contact me.

Sincerely,

Digitally signed by Holly Hillyer
Date: 2025.04.23 14:36:36 -04'00'

Holly L. Hillyer
holly@troposphereelegal.com

CC: Parties to Case No. U-21806

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for authority to increase its rates for authority to increase its rates for the distribution of natural gas and for other relief.	U-21806

DIRECT TESTIMONY OF MATTHEW BANDYK

ON BEHALF OF

CITIZENS UTILITY BOARD OF MICHIGAN

April 23, 2025

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I. INTRODUCTION AND QUALIFICATIONS

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

A My name is Matthew Bandyk. I am a Principal Associate at Synapse Energy Economics Inc., located at 485 Massachusetts Ave, Suite 3, Cambridge, Mass., 02139.

Q Please describe Synapse Energy Economics.

A Synapse Energy Economics is a research and consulting firm specializing in energy industry regulation, planning, and analysis. Synapse works for a variety of clients, with an emphasis on consumer advocates, regulatory commissions, and environmental advocates.

Q Please describe your professional experience before beginning your current position at Synapse Energy Economics.

A I was previously a consultant at 5 Lakes Energy, a Michigan-based energy policy consulting firm. My experience is summarized in my resume, attached as Exhibit CUB-13.

Q Have you previously testified before the Michigan Public Service Commission?

A Yes. I have previously testified before the Michigan Public Service Commission (Commission) in the following cases:

- **Case No. U-21585 (Consumers Energy Electric rate case);**
- **Case No. U-21534 (DTE Electric rate case);**
- **Case No. U-21555 (UPPCO Rate case);**
- **Case No. U-21540 (Michigan Gas Utilities Rate case);**
- **Case No. U-21490 (Consumers Energy Gas Rate case);**
- **Case No. U-21389 (Consumers Energy Electric Rate case);**
- **Case No. U-21048 (Consumers Energy 2022 PSCR Plan case); and**
- **Case No. U-21291 (DTE Energy Gas Rate case).**

Q What is the purpose of your testimony?

A The purpose of my testimony is to give a recommendation on the overall rate of return the Commission should approve in this case.

Q Are you sponsoring any exhibits?

A Yes, I am sponsoring the following exhibits:

- Exhibit CUB-13: Resume of Matthew Bandyk
- Exhibit CUB-14: Cost of Capital
- Exhibit CUB-15: CAPM Analysis
- Exhibit CUB-16: Equity Risk Premium
- Exhibit CUB-17: Beta
- Exhibit CUB-18: DCF Analysis
- Exhibit CUB-19: Long-Term Growth Rates
- Exhibit CUB-20: Bulkley Testimony from Wisconsin Public Service Corporation Case

II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Q Please summarize your primary recommendations.

A I recommend that the Commission approve a return on equity of 9.24% for Consumers Gas. Based on a capital structure of 50.75% equity and 49.1% debt and a cost of long-term debt of 4.35%, this return on equity results in an overall rate of return of 5.79%.

III. COST OF CAPITAL - PRINCIPLES

Q Please explain the concept of cost of capital and its significance.

A The cost of capital is the return demanded by investors on the capital they supply to the Company.[1] It is the weighted average of the costs of the various classes of capital supplied by investors — in this case, debt and equity. The cost of debt and cost of equity are each weighted by the respective amounts of debt and equity in the Company's total capital structure, so the ratio of equity to debt is another important component of the cost of capital. The cost of debt can be relatively easily observed through the interest rates lenders demand on debt issued by the Company. The cost of equity, however, is the product of market expectations that can only be estimated by looking at a number of factors.

Estimating the cost of equity for a regulated utility must be done carefully so as to arrive at a return that ensures rates that are "just and reasonable," a principle elaborated on in the landmark U.S. Supreme Court cases that set the legal standards

[1] Roger A, Morin, PhD. Modern Regulatory Finance. PUR Books, 2021, p. 27.

governing public utility regulation, *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia* and *Federal Power Commission v. Hope Natural Gas Co*.

For example, in *Hope*, the Court said that the "just and reasonable" standard implies that "the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital."[2]

But the Court was also clear that the determination of what return is "sufficient" in that regard must also involve a consideration of the interests of the company's customers. Indeed, just as a return for a utility that is set below the amount "commensurate with returns on investments in other enterprises having corresponding risks" causes the utility to lose wealth relative to what it should earn with a more appropriate return, a return that is set above this amount will cause the utility's customers to be overcharged and lose wealth relative to what they would be charged with a lower and more appropriate return. In this latter case, that wealth is instead transferred from customers to the utility holding company's shareholders.

Q What methods may be employed to determine the cost of capital?

A In *Hope*, the Supreme Court held that it is the result reached, not the method employed, which is controlling, and that result should be a rate that people would reasonably consider to be commensurate with the risk of the investment. In practice,

[2] *Fed Power Com v Hope Natural Gas Co*, 320 US 591, 603 (1944).

reaching that result involves using methods that are widely accepted in the financial community to estimate investor perceptions of risk. I rely on these methods in my testimony to estimate the Company's return on equity (ROE).

Q How have public regulatory commissions historically fared at estimating returns on equity for utilities that are commensurate with risk?

A There is strong evidence from multiple observers and peer-reviewed academic research that public regulatory commissions on average have tended to set electric utility ROEs above what economists would arrive at using the widely-accepted methods for estimating ROE. I will describe this ROE that regulatory commissions tend to exceed as a "market-based ROE" since it is estimated using methods that gauge how the market rates the risk of a utility investment. Commissions approving ROEs that exceed a market-based ROE has resulted in a transfer of wealth from ratepayers to shareholders.

Arriving at an ROE is a process of estimation, and that process will invariably include some degree of subjectivity. Subjective factors can influence any human decision-making process, including the decisions of public regulatory commissions, and lead to unintended results. These factors include the influence of utilities in the regulatory process. Utilities often have more resources to make their case heard for why ROE should be higher than opposing groups do, even if the utilities' arguments are not necessarily stronger.

Academics have also noted the phenomenon of a growing premium of regulatory commission-awarded ROEs over the rate of return on long-term U.S. Treasury bonds (the risk-free rate), and research has found that this premium cannot

statistically be explained by financial fundamentals, such as a change in the equity or debt risk of the utilities in question.[3] This premium costs consumers because it ensures that utilities collect a greater return from consumers than would be justified by a market-based ROE. A 2023 paper published by the Energy Institute at the University of California Berkeley's Haas School of Business found that the cost to consumers from rates of return for electric and gas utilities that are set above a market-based return costs U.S. consumers around $7 billion per year.[4]

Experts including utility attorney Steve Huntoon have also examined the record of authorized ROEs and found that regulators tend to set ROEs above returns of investments that are riskier than utilities, indicating that regulatory decisions are not in line with the economic reality that lower risk means lower return.[5]

A higher return implies higher risk, so approving ROEs that are higher than market returns would imply that regulated utilities are riskier investments than the market as a whole. But they are not. Regulated utility returns tend to be less risky than the market as a whole, as demonstrated by the betas of regulated utility holding companies. Beta is a measurement of the sensitivity of a stock's returns relative to those of the market as a whole. Utility holding company betas tend to be less than

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[3] "This growing premium does not appear to be explained by traditional asset-pricing models, often in direct contrast to regulators' stated intent… However, absent some normative justification for this premium, it would appear that regulators are authorizing excessive returns on equity to utility investors and that these excess returns translate into tangible profits for utility firms." David Rode and Paul Fischbeck. "Regulated equity returns: A puzzle." Energy Policy, Oct. 2019. Available at https://www.sciencedirect.com/science/article/abs/pii/S0301421519304690?via%3Dihub

[4] Karl Dunkle Werner and Stephen Jarvis. "Rate of Return Regulation Revisited." Energy Institute at Haas Working Paper 329R. Revised September 2024. Available at https://haas.berkeley.edu/wp-content/uploads/WP329.pdf

[5] Steve Huntoon. "Nice Work If You Can Get It." Fortnightly Magazine, August 2016. Available at https://www.fortnightly.com/fortnightly/2016/08/nice-work-if-you-can-get-it.

one, meaning that those stocks are less sensitive to changes in overall market returns.

Q If regulated utilities are less risky than the market, then why have regulated utilities historically been awarded ROEs above market returns?

A The remaining explanation is that public regulatory commissions have tended to accept estimates for ROE that are above fair, market-based ROE estimates.

Q What ROE is Consumers Energy recommending in this case?

A In this case, supported by testimony from Witness Bulkley, Consumers Energy is proposing an ROE of 10.25%, an increase from its current authorized ROE of 9.9%.

Q Does this evidence for ROEs being generally set too high relative to cost of equity show that Ms. Bulkley's recommended ROE is not commensurate with risk?

A Not by itself, no. One must still turn to financial models to form a quantitative basis for the company's cost of capital. But the history of inflated ROEs is a reason to enter this exercise with an informed presumption that Consumers Energy's proposed ROE is likely to be well above its cost of equity, and the burden is on the Company to prove otherwise. In my opinion, Ms. Bulkley has failed to do so.

In other words, the reasons listed above are reasons to *suspect* that the proposed ROE is too high. But the quantitative analysis from applying financial models *confirms* that suspicion.

Q Is Ms. Bulkley's recommended ROE of 10.25% a return commensurate with risk?

A No. Ms. Bulkley's recommended ROE is inflated above what would be a fair return due to several overestimated inputs into her discounted cash flow (DCF) and capital asset pricing model (CAPM) analyses, as well as her methodologically-flawed application of a bond yield risk premium (BYRP) analysis.

Q Ms. Bulkley claims that "the authorized ROE and equity ratio for regulated utilities is very important for determining the degree of regulatory support for reinforcing a utility's creditworthiness and financial stability in the jurisdiction."[6] Do you agree that "reinforcing a utility's creditworthiness and financial stability" should be a goal of the MPSC in this proceeding?

A No. The Company is not entitled to a particular level of "financial stability" – only that its return be sufficient to assure confidence in its financial integrity, per *Hope*. The distinction between "financial stability" and "financial integrity" is an important one. If the utility were entitled to a specific level of financial stability, that could imply that its ROE should never be reduced, since doing so would introduce instability. But a return sufficient to maintain "financial integrity" only implies that the utility be able to attract capital – not that it can attract capital on the terms that it currently does. A utility can still attract capital with a lower ROE. For example, if a lower ROE causes the stock price to drop, that lower price will attract new investors.

[6] Direct Testimony of Company Witness Ann E. Bulkley p. 9, at 5-7.

Q Similarly, Mr. Bleckman testifies that recent MPSC decisions on ROE have caused Michigan to slide in analyst rankings of "regulatory environment," and argues against further "degradations" of ROE because "Michigan's above average regulatory standing needs to be protected and bolstered."[7] Do you agree?

A No. The commission should not take rankings of "regulatory environment" into account when deciding where to set ROE. These rankings by UBS and S&P appear to be judgments for how generous utility commissions tend to be with the ROEs they tend to grant utilities. The rankings have nothing to do with the critical question of whether or not the commissions are properly arriving at returns commensurate with the risks of the underlying utilities. No doubt Consumers' current shareholders want a return as high as possible. But one should not confuse desire with risk. The "just and reasonable" standard from *Bluefield* and *Hope* does not entitle a utility to its current level of cost of capital. The language of *Hope* is that a "just and reasonable" return is one "commensurate with risk," and that return may be one below its current level of cost of capital. Indeed, as I described above, there is strong support for the proposition that public regulatory commissions consistently set ROEs too high, resulting in costs of capital for utilities that are too high. For those utilities, the current level itself is not "just and reasonable."

[7] Direct Testimony of Company Witness of Marc R. Bleckman p. 21, at 5-7.

Q Would Consumers Energy customers pay for an excessive return if the MPSC approves Ms. Bulkley's proposed ROE in this case?

A Yes. The ROE is a component of the overall rate of return along with the cost of debt. If the MPSC were to approve the utility's request for a rate increase without changes, Consumers would collect about $730.85 million from customers for a return on its rate base, based on an overall rate of return of 6.22%[8] and a total jurisdictional rate base of $11.75 billion.[9] If the ROE were instead the market-based ROE of 9.24% that I am recommending in this case, that overall rate of return would fall to 5.79%[10], and so the amount collected would fall from $730.85 million to $680.33 million, resulting in savings to customers of about $50.53 million on an annualized basis.

Q Does Consumers Energy acknowledge that an excessive return is detrimental to ratepayers?

A No. Mr. Bleckman attempts to argue that the Company's current ROE is actually leading to ratepayer savings by bolstering the Company's credit rating and leading to lower interest costs.[11]

Exhibit A-35 (MRB-13) shows the sum of the spread between the interest costs from the S&P rating on CMS Energy (CMS) senior secured debt in a given year and the interest costs if the rating were BBB-. The sum is $153 million in

[8] Exhibit A-14 (MRB-1), Sched. D-1.

[9] Exhibit A-12 (HLR-31), Sched. B-1.

[10] See Exhibit CUB-14.

[11] Bleckman, p. 18, lines 13-14.

"cumulative annual interest savings" from 2007 to 2024, or $9 million on an annualized basis. Those "savings" are $41.5 million less than the $50.53 million in costs per year that customers would pay for the excessive ROE in this case. Clearly, Consumers Energy's high ROE is more financially detrimental to ratepayers than any potential interest cost savings cited by the Company.

In addition, the Company has not shown that CMS's debt rating would have fallen to BBB- if the Company had been awarded an ROE or equity-debt ratio below its actual awarded ROE in those years, nor does any witness show that such a rating would follow this case if the Commission approved an ROE below the Company's recommended range in this case.

IV. COST OF CAPITAL – METHODS

Summary

Q What quantitative methods did you use to estimate the utility's ROE?

A As I stated earlier in my testimony, arriving at an ROE commensurate with risk requires the use of the methods that are widely accepted in the financial community to estimate investor perceptions of risk. My ROE estimate is based on the Capital Asset Pricing Model (CAPM) and the Discounted Cash Flow (DCF) methods, which are widely accepted methods for calculating ROE. These are also two of the methods used by Ms. Bulkley to develop her recommended ROE. I did not, however, use two of the methods she used, for reasons I will explain. These two are the Empirical Capital Asset Pricing Model (ECAPM) and the BYRP analysis.

Q Please summarize your ROE recommendation.

A The results of my DCF and CAPM analyses and my resulting recommendation for the utility's ROE in this case are below:

CAPM	7.95%
DCF	9.22%
Average of CAPM and DCF	8.58%
Consumers Energy current ROE	9.9%
Recommendation	**9.24%**

Q Why are you recommending an ROE that is higher than any of the results found in your financial models?

A The average of my model results suggests that an ROE lower than 9.24% would be a market-based cost of equity for Consumers Energy. But Consumers Energy is not a competitive business solely answerable to market forces. Any significant changes in Consumers Energy's ROE should be implemented gradually so as not to create unnecessary instability in the company's market value, which to some degree reflects the outcomes of regulatory proceedings like this one.

To account for modeling uncertainty and this principle of gradualism, my final recommendation represents the midpoint between the average result of my models and the 9.9% ROE awarded to Consumers Energy in its last gas rate case (U-21490).

CAPM & ECAPM

Q Please describe your application of the CAPM to estimate the ROE.

A I provide my CAPM estimate in Exhibit CUB-15.

Ms. Bulkley's use of the CAPM formula is for the most part noncontroversial, and my CAPM analysis follows the same basic formula. The numbers we use for several important inputs to the formula – the equity risk premium (ERP), beta and the risk-free rate – differ, for reasons I explain below.

Q Please explain how you arrived at the ERP used in your CAPM formula.

A The ERP is an essential component of the CAPM formula. It represents the excess return an investor would receive over the risk-free rate by investing in the broader equity market. The ERP is calculated as the estimated return on the market an investor can expect from investing in the broad stock market minus the risk-free rate.

It is important when estimating the ERP to not be overly reliant on historical data. While historical estimates of ERP are commonly used by the financial community, that popularity does not make them less flawed. As New York University Stern School of Business Professor Aswath Damodaran, one of the most highly respected and widely cited experts in finance and valuation, has written:

Given how widely the historical risk premium approach is used, it is surprising how flawed it is and how little attention these flaws have received.[12]

[12] Aswath Damodaran, "Estimating Equity Risk Premiums," Stern School of Business, accessed March 2025, available at https://pages.stern.nyu.edu/~adamodar/pdfiles/papers/riskprem.pdf.

There are two main reasons for the flaw with this methodology. First, the historical estimate for ERP is extremely sensitive to the historical time period selected, meaning that the subjective judgment by the person deciding which time period to collect market data for has an outsized impact on the result.[13]

Second, regardless of the time period selected, historical estimates of ERP are subject to the problem of survivorship bias, where returns that go into historical ERPs tend to be those from stocks that remain in the market, rather than those that drop out. This survivorship bias effect tends to inflate historical ERPs.[14]

Q Are there any methods of estimating ERP not subject to these problems?

A Yes. Dr. Damodaran suggests using an "implied equity risk premium" method:

The advantage of this approach is that it is market-driven and current, and does not require any historical data. Thus, it can be used to estimate implied equity premiums in any market.[15]

This approach values stocks in a market at the present value of dividends from each stock growing at a constant rate. Essentially, Dr. Damodaran takes the same discounted cash flow model Ms. Bulkley and I use to estimate the cost of equity for a single company and applies it to value the expected return of a broad market

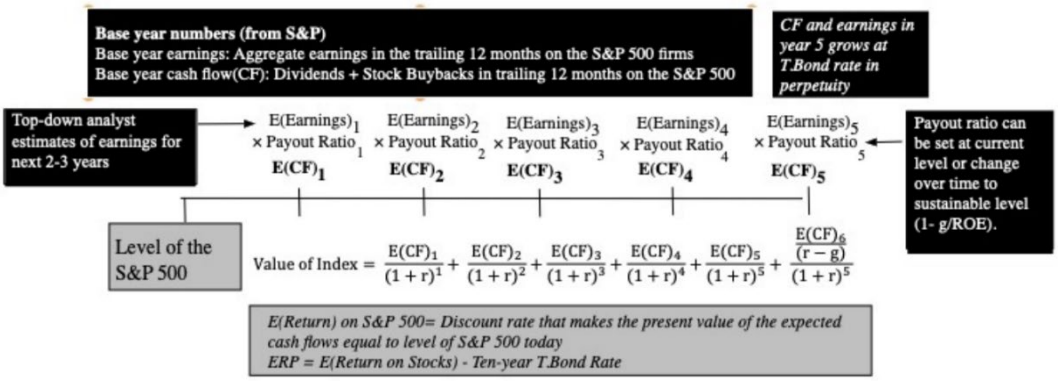
[13] *Id.* "…the risk premium estimated in the US markets by different investment banks, consultants and corporations range from 4% at the lower end to 12% at the upper end… In summary, the risk premium estimates vary across users because of differences in time periods used, the choice of treasury bills or bonds as the risk-free rate and the use of arithmetic as opposed to geometric averages."

[14] *Id.* "…the survivor bias will result in historical premiums that are larger than expected premiums for markets like the United States, even assuming that investors are rational and factor risk into prices."

[15] *Id.*

index, the S&P 500. Dr. Damodaran's formula, summarized in the figure below, begins with the base level of aggregate earnings of the S&P 500 index, and then applies the basic assumption of the discounted cash flow model that the present value of an asset is the stream of cash flows it is expected to generate, with each cash flow discounted at a rate that reflects the time value of money.

Fig. 1[16]



In Dr. Damodaran's approach, the cash flows are the earnings from dividends and stock buybacks that stocks in the S&P 500 generate, assumed to grow for five years at a rate derived from analyst growth forecasts, and then slowing to a perpetual growth rate that is equal to the risk-free rate. He then algebraically calculates the discount rate that allows these future cash flows to equal the current level of the index, resulting in a rate that reflects the return that investors require to invest in the market. Subtracting the risk-free rate from that required return results in the ERP.

[16] Reproduced from Damodaran, "Estimating Equity Risk Premiums," p. 94.

Dr. Damodaran regularly publishes five estimates of the U.S. ERP based on this implied equity premium approach. The estimates are based on different assumptions, such as normalizing earnings by replacing the base year earnings with the average earnings yield over the last decade. For my ERP,[17] I use the average of a) all five different estimates for ERP from Dr. Damodaran calculated in September 2024 and b) ERP estimates from two other sources. My first other source is the average U.S. market risk premium identified by the 2023 IESE Business School survey of thousands of finance and economics professors, analysts and managers of companies. While described as a "market risk premium," this number indicates the equity risk premium for the U.S. market.[18] Second, I used the recommended U.S. ERP from financial research firm Kroll for 2025.[19] Kroll's recommended U.S. ERP is based on risk perceptions in the market and other qualitative and quantitative inputs, such as an implied equity risk premium model.

Q Is the ERP you calculate forward-looking to account for the fact that Consumers Energy's test year is in the future?

A Yes. Dr. Damodaran's ERP is purposely calculated to be forward-looking in order to avoid the aforementioned pitfalls with historical approaches for ERP.[20] More

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[17] See Exhibit CUB-16.

[18] Pablo Fernandez, Teresa García De Santos and Javier Fernandez Acin. "Survey: Market Risk Premium and Risk-Free Rate used for 96 countries in 2024," March 10, 2024. Available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4754347.

[19] Kroll, "Kroll Lowers its Recommended U.S. Equity Risk Premium to 5.0%, Effective June 5, 2024," June 6, 2024. https://media-cdn.kroll.com/jssmedia/kroll-images/pdfs/kroll-lowers-its-recommended-us-equity-risk-premium-effective-june-5-2024.pdf?_ga=2.111398599.2140960630.1741375312-1534596282.1741375312

[20] "The implied ERP is computed by using expected cash flows in the future, and what investors are paying for those cash flows today, making them forward looking." Damodaran, p. 93.

specifically, Dr. Damodaran calculates the ERP using an expected growth rate for payouts to investors (i.e., dividends and stock buybacks) that is the average of two-year growth forecasts of the aggregate earnings of the S&P 500 Index from analysts from Thomson Reuters, Factset, Yardeni and S&P Capital IQ.

Q Does Ms. Bulkley calculate the ERP she uses for her CAPM analysis using the same method as Dr. Damodaran?

A No. While she describes her equity risk premium as an "implied expected equity risk premium,"[21] Ms. Bulkley uses a very different methodology. Her expected return on the market is the addition of a) a Bloomberg forecast of the three- to five-year growth rate for earnings per share of companies in the S&P 500 Index and b) a Bloomberg estimate of the dividend yield of companies in the S&P 500 Index. This formula, where (cost of equity) = expected dividend yield plus *g* [growth rate], is essentially a simplified version of the discounted cash flow formula used by Dr. Damodaran and many others.

Q Why is Ms. Bulkley's ERP estimate so much higher than yours?

A Ms. Bulkley has used an inflated estimate for *g*, and the consequence of that choice is amplified by her use of a more simplified discounted cash flow, which makes her result much more sensitive to the level at which *g* is set because *g* is only one of two inputs to her formula (the other input being the dividend yield). As I described above, Dr. Damodaran's approach assumes cash flows will grow for five years at an analyst-forecasted rate, then assumes that growth will settle at a more sustainable

[21] Bulkley, p. 27.

long-term rate based on the risk-free rate. But Ms. Bulkley's approach assumes that cash flows will grow in the long term at a constant 10.45%[22] rate based on analyst expectations of the next three to five years. It is unrealistic to assume that dividends can grow in perpetuity at such a high rate, and Dr. Damodaran's assumption that growth will settle to a more sustainable rate is much more appropriate for a realistic application of the discounted cash flow model. This problem with Ms. Bulkley's approach will surface again when I discuss her DCF analysis for ROE.

In addition, Ms. Bulkley relies on just one source for her long-term growth rate: Bloomberg. Contrast that with Dr. Damodaran's estimate for the cash flow growth rate that is an average of forecasts from four different sources. His resulting expected growth rate for the ERP estimates I use is 8.82%, a result that is much more conservative than Ms. Bulkley's 10.45%. Ms. Bulkley's reliance on one source contributes to her inflated ERP estimate.

Q Explain how you arrived at the beta used in your CAPM formula.

A The beta coefficient is a measure of the sensitivity of a company's returns to the returns of the market as a whole – how much the historical returns mathematically vary compared to the variance of the historical returns of the market. Its relevance for the CAPM formula is that it measures the risk associated with investing in the company's equity that cannot be eliminated through portfolio diversification. In theory, an investor can buy other stocks in the market to compensate for the risk of any one stock, but if that stock's returns are heavily correlated with the returns of

[22] Exhibit A-14 (AEB-1), Sched. D-5, p. 16.

the market, the investor is essentially not diversifying away the stock's risk because it is merely adding more of the same kind of risk. Thus, beta is often described as a measure of "systematic risk" – the financial risk of a company that is not the result of risks from the company itself, but from its performance relative to the market as a whole (the "system").

While calculating beta for publicly-traded stocks is fairly straightforward due to the availability of plentiful data on a stock's performance relative to the market, even a company that is not publicly traded, such as Consumers Energy, carries systematic risk vis-à-vis the market that can be calculated as a beta coefficient.

I use the average of two beta coefficients in my CAPM formula: First, the average of the Value Line beta estimates for the companies in Ms. Bulkley's proxy group, and second, the average of the Bloomberg beta estimates for the companies in her proxy group. But for each of these two betas, I make an important adjustment that makes the beta coefficient more accurate.

Q Please explain the adjustment you made to beta.

A To be more precise, as shown in Exhibit CUB-17, I remove an adjustment that has been made to the Bloomberg and Value Line betas by those data sources. Bloomberg and Value Line report "adjusted" betas rather than "raw" betas. Raw betas are converted into adjusted betas through the commonly used "Blume adjustment" equation that is meant to remove the bias that stems from the long-run tendency of betas to regress to 1. For stocks in most industries, this tendency of

betas is thought to be a result of efforts by management to keep the systematic risk of a given firm close to that of the market.[23]

But this assumption that betas revert to the mean does not hold when it comes to the betas of rate-regulated utilities. The ability to recover costs inoculates rate-regulated utilities from systematic risk. Rate regulation protects investor-owned utilities like Consumers from the risks of rising expenses, commodity price risk and competitive risks, and they enjoy natural monopolies that mitigate market risks associated with the customer base. As a result, the Blume adjustment is not appropriate to apply to the betas of companies like those in the Company's proxy group.

There is extensive academic literature supporting the inapplicability of the Blume adjustment when it comes to utilities. The theoretical argument that the unique characteristics of rate regulation reduce systematic risk for utility stocks is well-supported. Utility stock performance tends to be countercyclical, so betas tend to be less than 1.[24]

There is a strong empirical record in the academic literature showing that rate-regulated utility stock betas in practice do not revert to 1. An empirical analysis of the monthly returns of stocks of 57 publicly-traded electric and gas utilities from

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[23] Michelfelder, "Public Utility Beta Adjustment and Biased Costs of Capital in Public Utility RateProceedings" The Electricity Journal, 2013. https://www.sciencedirect.com/science/article/abs/pii/S1040619013002340

[24] "We note that it has been pointed out in the finance literature that applying the Blume adjustment can cause (rather than remedy) bias, particularly when being applied to industries where a beta of below or above unity is expected." Allen Consulting Group, "Empirical evidence on proxy beta values for regulated gas distribution activities," June 2007. https://www.aemc.gov.au/sites/default/files/content/3016ea51-04c4-4b64-890c-845d23d2c47d/Annexure-C-Empirical-Evidence-on-Proxy-Betas.pdf

1962 to 2007 found that the mean and median betas decline over time, rather than rise to 1, as the Blume adjustment to beta assumes.[25]

Q Why did you not use the ECAPM?

A To my knowledge, the Commission has never recognized the ECAPM as a valid methodology for estimating ROE.[26] The MPSC Staff has also historically declined to use the ECAPM model as part of its ROE analyses.[27]

DCF

Q Please explain your application of the Discounted Cash Flow (DCF) model to estimate the Company's cost of equity.

A I add the Company's growth rate, or (g), to the dividend yields of each company in Ms. Bulkley's preferred proxy group to arrive at an estimated cost of equity. My DCF result is lower than Ms. Bulkley's primarily due to the lower estimate I use for the growth rate. Selecting the growth rate may be the most important element of the DCF analysis.

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[25] These results "strongly refute the validity of the Blume equation for public utility stocks." Michelfelder 2013.

[26] Case No. U-21389, PFD, December 21, 2023, p 337 ("This PFD notes that Consumers has not identified an order wherein the Commission has recognized let alone adopted the use of the ECAPM model, and this ALJ is unaware of any."); *see also* Case No. U-21585, PFD, January 27, 2025, p 341 ("The Company failed to identify any order in which the Commission recognized this approach, and for the reasons identified by Staff and the other intervenors, this PFD is not persuaded that the ECAPM approach is reliable or reasonable.").

[27] *See, e.g.*, Case No. U-20940, Direct Testimony of MPSC Staff Witness Joseph Ufolla, 5 TR 1869, lines 9-16.

Q Why is the growth rate you have selected superior to that selected by Ms. Bulkley?

A The EPS projections used by Ms. Bulkley are all in the short term: three- to five-year consensus analyst dividend per share growth estimates. But a short-term growth rate cannot be the only growth rate used in the DCF model.

The use of only short-term rates for perpetual growth leads to a wildly unrealistic outcome. A DCF growth rate input higher than the growth rate of the economy as a whole implies that, in the long run, the Company will grow larger than the entire U.S. economy. Such an outcome is impossible.[28]

Q Explain how you selected the *g* you use in your DCF model.

A My DCF analysis is presented in Exhibit CUB-18. I use a two-stage DCF model that includes a weighted average of a short-term growth rate based on investor expectations of utility earnings growth and a long-term growth rate that matches investor expectations of the growth of the domestic economy as a whole. The formula for this model is essentially the same as that in the model used by Ms. Bulkley: ke = (D1/P0) + g.

But whereas in Ms. Bulkley's model, (*g*) is merely the short-term earnings projection, in the two-stage model (*g*) is a composite of the short-term projection and the long-term growth rate that represents the proper bound for Consumers

[28] Aswath Damodaran. *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*, 3rd ed. John Wiley & Sons, Inc, 2012 ("If a firm is a purely domestic company, either because of internal constraints . . . or external constraints (such as those imposed by a government), the growth rate in the domestic economy will be the limiting value.")

Energy's long-term growth, reflecting that in the long term Consumers Energy cannot grow larger than the domestic economy of which it is a part. The reason for this two-step process is that short-term and long-term growth often differ and failing to account for those differences leads to an incorrect application of the DCF model.[29]

My method follows FERC's approved methodology used to analyze the base ROE of a public utility's rates under the Federal Power Act using the DCF model. FERC has endorsed a two-step model in which the short-term growth rate is weighed at 80% and the long-term growth rate is weighed at 20%.[30] I use those same weightings in my model. Specifically, I weighed the short-term growth rates for each proxy group company from Exhibit A-14 (AEB-1), Schedule D-5, page 3 at 80%, and the long-term growth rate at 20%.

Candidates for long-term growth rates are listed in Exhibit CUB-19, and they each represent conservative estimates of long-term economic growth. I select the highest of these candidates, the nominal GDP growth rate from 2028 to 2035, as the value for the long-term (g) used in the DCF formula.

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[29] "The standard DCF model would be incorrectly specified when the investors' expected intermediate term EPS growth rate differs from the long-term sustainable EPS growth rate." Morin, p. 385.

[30] Stephen M. Spina, J. Daniel Skees and Patrick R. Pennella. "FERC Revises Methodology to Evaluate Return on Equity (Again)." Morgan Lewis, June 2, 2020, available at https://www.morganlewis.com/blogs/powerandpipes/2020/06/ferc-revises-methodology-to-evaluate-return-on-equity-again.

Q How else does your DCF model differ from Ms. Bulkley's?

A To calculate the stock prices used to arrive at dividend yields, Ms. Bulkley uses prices averaged over 30-, 90- and 180-trading-day periods. To reflect current investor expectations, the stock price should be as close to the current spot price as possible. Averaging prices over a short time period to remove the risk of picking an outlier price is appropriate, but the 90- and 180-day periods selected by Ms. Bulkley run the risk of relying on stale information.[31]

My stock prices represent the average of the high and low prices over the 30-day period ending March 21, 2025, with prices obtained from Yahoo! Finance.

BYRP

Q Should the Commission consider the BYRP analysis for estimating ROE?

A No, it should not. It should be disregarded because it introduces into the calculation of ROE, a process that should be based on objective data as much as possible, the reliance on ROEs set by other regulatory commissions. That regulatory process of setting ROE is, as the research about excessive utility ROEs I discussed above supports, not one that has empirically resulted in returns that would be set by objective financial methodology.

[31] Morin recommends no more than one month for an averaging period. Morin, p. 356: "To guard against the possibility that current stock price reflects abnormal conditions or constitutes a temporary aberration, while at the same time retaining the spirit of market efficiency, averaging stock prices over several recent trading days is a reasonable compromise… The average closing stock price calculated over the most recent 10 trading days period at the time of estimating the cost of equity is a reasonable procedure… A similar average computed over a one-moth period rather than a 10-day period would not be unreasonable."

Ms. Bulkley's risk premium used in her BYRP analysis is the spread between those ROEs historically set by other commissions in rate cases and long-term Treasury bond yields. Therefore, the resulting risk premium she calculates is as large as it is only in relation to the degree that regulatory commissions set ROEs at a premium to what the ROEs would be using only objective financial methods.

This problem with similar Risk Premium models has been cited by FERC as one of the reasons to reject the use of the model. In Opinion No. 569 in a 2019 order, FERC found that "while all models, including the DCF, feature some circularity, such circularity is particularly direct and acute with the Risk Premium model because it directly relies on past Commission ROE decisions."[32] In that decision, FERC also rejected the use of the Risk Premium model because it is "largely redundant with the CAPM."

Additional Risk Factors

Q Please describe how Ms. Bulkley introduces section "VIII. Regulatory and Business Risks."

A Ms. Bulkley states that several additional factors must be considered when determining where the Company's cost of equity falls within the range of analytical results. These risk factors should be considered with respect to their overall effect on the Company's risk profile relative to the proxy group.[33]

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[32] FERC Opinion 569, 169 FERC 61129 (2019), par. 343. Available at: https://www.ferc.gov/sites/default/files/2020-04/E-11_1.pdf.

[33] Bulkley, p. 33, lines 15-19.

Q What are the additional factors described in "VIII. Regulatory and Business Risks"?

A The additional factors are flotation costs, capital expenditures, and regulatory risks.[34]

Q What does Ms. Bulkley find about how Consumers Energy's capital expenditure requirements compare to those of the proxy group companies?

A Ms. Bulkley finds that Consumers Energy's ratio of capital expenditures as a percentage of net utility plant (61.71%) is lower than the median (66.33%) for the proxy group companies, however the capital expenditures still represent an extensive capital project relative to the total net plant utility.[35] [36]

Q What does Ms. Bulkley state and suggest about the relationship between capital expenditure requirements and risk?

A Ms. Bulkley states that substantial capital expenditure requirements adversely affect a company 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. This suggests that Ms. Bulkley finds that capital expenditure requirements and risk are positively related, with higher capital expenditure requirements associated with higher risk.

[34] Bulkley, p. 34 line 1, p. 37 line 21, and p. 41 line 11.

[35] Bulkley, p. 38, lines 3-11.

[36] Exhibit A-14 (AEB-1), Schedule D-5, page 27.

Q Are there any problems with this finding about the Company's risk profile?

A Yes. This finding is not in keeping with the aim of the section to compare to the proxy companies. Rather, it emphasizes the Company's capital expenditure requirements in a vacuum.

Q What do you find about how Consumers Energy's capital expenditure requirements compare to those of the proxy group companies?

A I find that Consumers Energy's ratio of capital expenditures as a percentage of net utility plant is lower than the median for the proxy group companies. Relatedly, I find that the Company's ratio of capital expenditures as a percentage of net utility plant is also lower than the average or mean (67.81%) for the proxy group companies.[37]

Q What do you find about the overall effect of capital expenditures on the Company's risk profile relative to the proxy group?

A I find that capital expenditures have the overall effect of lowering the Company's risk relative to the proxy group.

[37] Calculation based on Exhibit A-14 (AEB-1), Schedule D-5, page 27.

Q What does Ms. Bulkley find about the difference between the Company and the proxy group companies in terms of capital tracking mechanisms?

A Ms. Bulkley finds that, unlike approximately 71% of companies in the proxy group, Consumers Energy does not recover gas capital investment costs between rate cases utilizing a capital tracking mechanism.[38]

Q Do you agree with this comparison?

A No. In Exhibit A-14 (AEB-1), Schedule D-5, page 29, Ms. Bulkley calculates the 71% at the operating subsidiary level for each of the six proxy companies, weighing each operating subsidiary equally. 17 operating subsidiaries have capital tracking mechanisms and 7 do not, with 17/24 rounding to 71%. However, this method weighs the proxy companies with more operating subsidiaries more in the overall calculation than the proxy companies with fewer operating subsidiaries. For example, Atmos and NiSource have 6 and 7 subsidiaries, respectively, so Atmos' weight in the overall calculation is 25% (6/24) and NiSource's is 29% (7/24).[39] Both companies spend a higher percentage on capital expenditures than Consumers Energy does.[40] Ms. Bulkley has neither justified nor described this weighted average method. Absent a justification for weighting proxy companies with more subsidiaries more highly than companies with fewer subsidiaries, Ms. Bulkley should calculate the prevalence of capital tracking mechanisms by weighing each proxy company equally. I calculated the percentage of proxy group companies that

[38] As shown in Exhibit A-14 (AEB-1), Schedule D-5, page 29.

[39] Exhibit A-14 (AEB-1), Schedule D-5, page 29.

[40] Exhibit A-14 (AEB-1), Schedule D-5, page 27.

have mechanisms for some form of capital cost recovery in place by first calculating, for each proxy company, the percentage of operating subsidiaries with tracking mechanisms, and then calculating the average by giving each proxy company an equal weight of 1/6 (17%). I found that 64% of the companies in the proxy group currently have mechanisms for some form of capital cost recovery in place.[41]

Q What does Ms. Bulkley conclude about the overall effect of capital expenditures on the Company's risk profile relative to the proxy group?

A Ms. Bulkley states that even though Consumers Energy has lower projected capital expenditure programs relative to net utility plant of the proxy group, the Company still has a significant capital spend program. Further, unlike a number of the operating subsidiaries of the proxy group, the Company does not currently have a capital tracking mechanism for gas capital investment. Ms. Bulkley concludes that this results in greater risk for the Company than the proxy group, all else being equal.[42]

Q Is this conclusion clear?

A No. Ms. Bulkley stated that section "VIII. Regulatory and Business Risks" risks including capital expenditures should be considered with respect to their overall effect on the Company's risk profile relative to the proxy group. Ms. Bulkley concludes the capital expenditures section with "This results in greater risk for the

[41] Calculation based on Exhibit A-14 (AEB-1), Schedule D-5, page 29.

[42] Bulkley p. 41, at 5-10.

Company than the proxy group, all else being equal."[43] It is not clear what role this sentence plays in the overall capital expenditures section. One possibility is that this sentence summarizes only the previous sentence ("Further, unlike a number of the operating subsidiaries of the proxy group, Consumers Energy does not currently have a capital tracking mechanism for gas capital investment"). Another possibility is that this sentence summarizes Ms. Bulkley's position on the overall effect of capital expenditures on the Company's risk profile relative to the proxy group (in other words, concluding that the overall effect is that capital expenditures make the Company riskier than the proxy group).

Q What is the problem if ("This results in greater risk for the Company than the proxy group, all else being equal") only summarizes the previous sentence about the capital tracking mechanism?

A The problem would be that Ms. Bulkley has not offered a conclusion as to the overall effect of capital expenditures on the Company's risk profile.

Q What is the problem with the potential conclusion that the overall effect of capital expenditures is to make the Company riskier relative to the proxy group?

A There are two problems with this conclusion. The first problem is that Ms. Bulkley's first statement ("Even though Consumers Energy has lower projected capital expenditure programs relative to net utility plant of the proxy group over the next five years, the Company still has a significant capital spend program") does

[43] Bulkley p. 41, at 9-10.

not support the conclusion that the Company is riskier relative to the proxy group. Ms. Bulkley compared projected capital expenditures relative to net utility plant and found that the Company's capital expenditure percentage relative to net utility plant is lower than the median of the proxy group, suggesting that the Company has a lower risk profile than the proxy group. Ms. Bulkley claims that "Even though Consumers Energy has lower projected capital expenditure programs relative to net utility plant of the proxy group over the next five years, the Company still has a significant capital spend program." This latter part of the claim may be true but is not essential to the section of testimony, which considers capital expenditures "with respect to their overall effect on the Company's risk profile relative to the proxy group."

The second problem is that, taking the two statements together, Ms. Bulkley has not justified the overall conclusion. Ms. Bulkley makes two contrasting statements about different factors that affect the Company's risk relative to the proxy group but does not indicate or compare their relative importance. It is therefore not clear how these two statements, which have opposite effects, lead to the overall conclusion of "greater risk for the Company than the proxy group." Ms. Bulkley has not justified a conclusion that the absence of a capital tracking mechanism identified in her first statement has a greater impact on the Company's risk profile than the Company's significant capital spend program identified in her second statement, , especially considering my finding that only 64% of the proxy group has a tracking mechanism, not 71%.

Q Do you have any other concerns about this potential conclusion?

A Yes. Ms. Bulkley has not justified why it is relevant that the Company has "not requested approval to recover gas capital investment costs between rate cases utilizing a capital tracking mechanism."[44] With capital expenditure requirements lower than both the mean and median of the proxy group, this emphasis on capital recovery tracking is not justified. In Ms. Bulkley's public direct testimony on behalf of Wisconsin Public Service Corporation (WPSC), Ms. Bulkley concluded that "WPSC's capital expenditure requirements as a percentage of net utility plant are significant relative to the proxy group and are expected to continue over the next few years. Furthermore, unlike a majority of the proxy group companies, WPSC does not have capital cost recovery mechanisms to allow for timely recovery of WPSC's capital expenditures between rate cases. Therefore, all else equal, WPSC's capital expenditure plan and limited ability to recover the capital investments as incurred results in a risk profile that is greater than that of the proxy group."[45] While it may make sense to discuss concerns about lack of capital recovery tracking between rate cases for a utility that has "significantly higher"[46] capital expenditure requirements compared to the median of its proxy group, Ms. Bulkley has not justified why the same is necessary for Consumers Energy.

[44] Bulkley p. 40, at 24-25.

[45] Exhibit CUB-20, WPSC Bulkley p. 54 lines 18-21, p. 55 lines 1-3.

[46] Exhibit CUB-20, WPSC Bulkley p. 52, lines 1-2.

Q Does this conclude your direct testimony?

A Yes, it does.

Matthew Bandyk, Principal Associate

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mbandyk@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Principal Associate*, January 2025 – Present.

- Performs financial analysis for clients in regulatory cases involving utility cost of capital.
- Summarizes complex technical concepts to clients, regulators, and public audiences through papers, presentations, testimony, and meetings.
- Creates, uses, and maintains spreadsheet-based tools and other analytical platforms to analyze energy technologies, programs, and portfolios.

5 Lakes Energy, Northport, MI. *Consultant,* September 2021 – December 2024

- Provided public policy recommendations and financial analysis for nonprofit energy advocacy and government clients.
- Served as expert witness in testimony in Michigan Public Service Commission rate cases; testimony contributed to hundreds of millions of dollars in ratepayer savings from the outcome of cases.
- Frequently used Microsoft Excel for testimony and projects, such as designing financial models for the City of Ann Arbor.
- Coordinated the writing and research for major reports for clients, such as the Citizens Utility Board of Michigan's Utility Performance Report and Evergreen Collaborative's Michigan Clean Energy Framework.
- Served as communications strategist for the Michigan Energy Innovation Business Council, including writing social media, blog posts on utility regulation and policy issues, enterprise articles in publications like Utility Dive, and op-eds in newspapers like the Detroit Free Press and the Detroit News.
- Significantly expanded contract work for 5 Lakes Energy by bringing in clients from my independent consultancy.

Bandyk Consulting LLC, Royal Oak, MI. *Clean Energy Consultant,* January 2019 – September 2021

- Performed communications and regulatory engagement strategy, including writing comments in regulatory cases, for clients such as the Citizens Utility Board of Michigan and the Michigan Energy Innovation Business Council.

Atwell LLC, Southfield, MI. *Financial Services Manager*, May 2018 – January 2019.

- Purchased long-lived assets to support Atwell's work in environmental and engineering project consulting.
- Performed financial analysis to overhaul company's asset leasing policies with goal of saving up to ~$100k per year by improving asset life.

Environmental Defense Fund, Toledo, OH. *Climate Corps Fellow,* Summer 2017

- Built financial valuation tool for payback, NPV and IRR of solar arrays planned by client, determining best ROI for about $300,000 in solar investments.
- Designed energy use tracking system for the largest private low-income housing provider in Toledo, Ohio; system saved hundreds of work hours annually.

DTE Energy, Detroit, MI. *MBA Student Consultant,* March 2017 – April 2017

- Performed market and regulatory compliance research on original proposal for DTE to enter the corporate renewable energy space; presented to company leadership.
- Designed tariff to add wind/solar and cut rates by 20% compared to DTE's green tariff.

S&P Global Market Intelligence/SNL Financial, Arlington, VA. *Reporter,* June 2010 – August 2016

- Used Excel analysis of power plant output and commodity price databases to create actionable intelligence about new trends in the energy industry for clients.
- Wrote articles on utilities, power plants, energy efficiency and regulation for subscription website read daily by thousands of energy and investment professionals.

EDUCATION

University of Michigan Stephen M. Ross School of Business, Ann Arbor, MI
Master of Business Administration, 2018

Davidson College, Davidson, NC
Bachelor of Arts in Political Science, 2006; *cum laude*

TESTIMONY

Michigan Public Service Commission (Docket U-21585): Direct Testimony of Matthew J. Bandyk regarding Consumers Energy Company's application for authority to increase its rates for the generation and distribution of electricity and for other relief. On behalf of Citizens Utility Board of Michigan, Natural Resources Defense Council and Michigan Environmental Council. September 27, 2024.

Michigan Public Service Commission (Docket U-21534): Direct Testimony of Matthew J. Bandyk regarding DTE Electric Company's application to increase its rates, amend its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority. On behalf of Citizens Utility Board of Michigan and Michigan Environmental Council. July 25, 2024.

Michigan Public Service Commission (Docket U-21555): Direct Testimony of Matthew J. Bandyk regarding Upper Peninsula Power Company's application for authority to increase its rates for the generation and distribution of electricity and for other relief. On behalf of Citizens Utility Board of Michigan. July 19, 2024.

Michigan Public Service Commission (Docket U-21540): Direct Testimony of Matthew J. Bandyk regarding Michigan Gas Utilities Corporation's application for authority to increase retail natural gas rates and for other relief. On behalf of Citizens Utility Board of Michigan. June 28, 2024.

Michigan Public Service Commission (Docket U-21291): Direct Testimony of Matthew J. Bandyk regarding DTE Gas Company's application for authority to increase its rates, amend its rate schedules and rules governing the distribution and supply of natural gas, and for miscellaneous accounting authority. On behalf of Citizens Utility Board of Michigan. May 7, 2024.

Michigan Public Service Commission (Docket U-21490): Direct Testimony of Matthew J. Bandyk regarding Consumers Energy Company's application for authority to increase its rates for the distribution of natural gas and for other relief. On behalf of Citizens Utility Board of Michigan. April 22, 2024.

Michigan Public Service Commission (Docket U-21389): Direct Testimony of Matthew J. Bandyk, Natural Resources Defense Council, Sierra Club, and Citizens Utility Board of Michigan regarding Consumers Energy Company's application for authority to increase its rates for the generation and distribution of electricity and for other relief. On behalf of Michigan Environmental Council. August 29, 2023.

Michigan Public Service Commission (Docket U-21048): Direct Testimony of Matthew J. Bandyk regarding Consumers Energy Company's application for approval to implement a power supply cost recovery plan for the 12 months ending December 31, 2022. On behalf of Citizens Utility Board of Michigan. April 29, 2022.

Resume updated January 2025

Exhibit CUB-14

Cost of Capital[3]

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	Capital Structure				Weighted Cost			
Description	Amount ($000,000)	Percent Permanent Capital	Percent of Total Capital	Cost Rate	Permanent Capital	Total Cost	Conversion Factor	Pre-Tax Return
Long-Term Debt	$12,645	49.10%	41.19%	4.35%	2.14%	1.79%	1	1.79%
						0.00%		
Preferred Stock	37	0.14%	0.12%	4.50%	0.01%	0.01%	1.3381	0.01%
						0.00%		
Common Shareholder's Equity	13,070	50.75%	42.58%	9.24%[1]	4.69%	3.93%	1.3381	5.26%
Total Permanent Capital	$25,752	100.00%						
Short-Term Debt	201		0.66%	4.52%		0.03%	1	0.03%
Deferred Income Taxes	4,629		15.08%	0.00%		0.00%	1	0.00%
Investment Tax Credit								
Long-Term Debt	56		0.18%	4.35%		0.01%	1	0.01%
Preferred Stock	0		0.00%	4.50%		0.00%	1.3381	0.00%
Common Equity	58		0.19%	10.25%		0.02%	1.3381	0.03%
Total	$30,697		100.00%			5.79%[2]		7.13%

[1] Recommendation from Bandyk direct testimony.
[2] Sum of (g).
[3] Except where noted, source is Exhibit A-14 (MRB-1), Sched. D-1.

Exhibit CUB-15

CAPM Analysis

a)	b)	c)	d)	e)	f)	g)
Equity Risk Premium[1]	Risk-Free Rate[2]	Value Line Raw Beta[3]	Bloomberg Raw Beta[4]	ROE with Value Line Beta[5]	ROE with Bloomberg Beta[6]	Average ROE[7]
4.86%	4.41%	0.81	0.64	8.35%	7.55%	**7.95%**

[1] Exhibit MJB-4.
[2] Id.
[3] Exhibit MJB-5.
[4] Id.
[5] = b + (a*c)
[6] = b + (a*d)
[7] Average of e and f.

Exhibit CUB-16

Equity Risk Premium and Corresponding Risk-Free Rates

	Equity Risk Premium
Damodaran[1] (Trailing 12 months with sustainable payout)	**4.43%**
Damodaran (Trailing 12 months)	**4.61%**
Damodaran (smoothed)	**5.91%**
Damodaran (normalized)	**4.07%**
Damodaran (net cash yield)	**4.33%**
IESE[2]	**5.70%**
Kroll[3]	**5%**
ERP Average	**4.86%**

	Risk-Free Rate
Damodaran	**4.24%**
IESE	**4.10%**
Kroll[4]	**4.88%**
Risk-Free Rate Average	**4.41%**

[1] Aswath Damodaran. "Implied ERP by month for previous months (September 2008- Current)." https://pages.stern.nyu.edu/~adamodar/New_Home_Page/home.htm. Accessed April 2025.

[2] Pablo Fernandez, Teresa García De Santos and Javier Fernandez Acin. "Survey: Market Risk Premium and Risk-Free Rate used for 96 countries in 2024," March 10, 2024. Available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4754347.

[3] Kroll, "Kroll Lowers its Recommended U.S. Equity Risk Premium to 5.0%, Effective June 5, 2024," June 6, 2024. https://media-cdn.kroll.com/jssmedia/kroll-images/pdfs/kroll-lowers-its-recommended-us-equity-risk-premium-effective-june-5-2024.pdf?_ga=2.111398599.2140960630.1741375312-1534596282.1741375312

[4] 20-year Treasury yield as of 2/13/25. https://www.cnbc.com/quotes/US20Y. Kroll recommends "using the spot 20-year U.S. Treasury yield as the proxy for the risk-free rate if the prevailing spot yield as of the valuation date is higher than the Kroll normalized U.S. risk-free rate of 3.5%."

Exhibit

CUB-17 Beta

Company	Value Line Beta (a)	Raw beta (b)	Bloomberg beta (c)	Raw beta (d)
Atmos Energy Corporation	0.85	0.772727273	0.74	0.614304534
NiSource Inc.	0.95	0.924242424	0.79	0.687944323
Northwest Natural Gas Company	0.85	0.772727273	0.69	0.542268622
ONE Gas, Inc.	0.85	0.772727273	0.76	0.648214786
Southwest Gas Corporation	0.9	0.848484848	0.82	0.735981328
Spire, Inc.	0.85	0.772727273	0.76	0.64065019
Average	0.875	0.810606061	0.762078956	0.644893964

(a) Exhibit A-14 (AEB-1), Sched. D-5, p. 6.

(b) = ((a)-0.34)/0.66

(c) Exhibit A-14 (AEB-1), Sched. D-5, p. 9.

(d) = ((c)-0.33)/0.67

Exhibit CUB-18

DCF Analysis

a) Company	b) Ticker	c)[1] Annualized Dividend	d)[2] High Stock price as of 30 days ended March 21	e)[3] Low Stock Price as of 30 days ended March 21	f)[4] Average Stock Price	g)[5] Expected Dividend Yield	h)[6] Expected Dividend Yield adjusted for Flotation cost	i)[7] Value Line Earnings Growth	j)[8] Yahoo! Finance Earnings Growth	k)[9] Zacks Earnings Growth	l)[10] Average Earnings Growth	m)[11] Long-Term Growth Rate	n)[12] Cost of Equity
Atmos Energy Corporation	ATO	$3.22	154.04	145.16	149.6	2.23%	2.31%	7.00%	7.40%	7.00%	7.13%	3.80%	8.78%
NiSource Inc.	NI	$1.06	41.3	38.07	39.685	2.78%	2.88%	9.50%	7.70%	7.00%	8.07%	3.80%	10.10%
Northwest Natural Gas Company	NWN	$1.95	42.61	40.32	41.465	4.81%	4.99%	6.50%	2.80%	n/a	4.65%	3.80%	9.47%
ONE Gas, Inc.	OGS	$2.64	76.48	71.96	74.22	3.64%	3.77%	3.50%	5.00%	5.00%	4.50%	3.80%	8.13%
Southwest Gas Corporation	SWX	$2.48	77.95	71.39	74.67	3.43%	3.56%	10.00%	4.00%	6.00%	6.67%	3.80%	9.65%
Spire, Inc.	SR	$3.02	78.33	73.94	76.135	4.07%	4.22%	4.50%	6.36%	5.00%	5.29%	3.80%	9.21%

[1] Exhibit A-14 (AEB-1), Sched. D-5, p. 26.
[2] Yahoo! Finance.
[3] Id.
[4] Average of d) and e).
[5] Exhibit A-14 (AEB-1), Sched. D-5, p. 26.
[6] Id.
[7] Id.
[8] Id.
[9] Id.
[10] Average of i), j) and k).
[11] See Exhibit MJB-7.
[12] h) + 0.8*l) + 0.2*m).

Exhibit CUB-19

Long-Term Growth Rate Sources

Nominal GDP annual average growth rate 2028-2035[1]	**3.80%**
Real GDP annual average growth, 2028-2035[2]	1.80%
Inflation annual average growth rate, 2028-2035 (GDP price index)[3]	2.0%

[1] Congressional Budget Office. *The Budget and Economic Outlook: 2025 to 2035*. Table C-1. January 2025. https://www.cbo.gov/publication/61172#_idTextAnchor004.
[2] Id.
[3] Id

BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Wisconsin Public Service Corporation for Authority to Adjust Electric and Natural Gas Rates	Docket No. 6690-UR-128

DIRECT TESTIMONY OF ANN E. BULKLEY

I. INTRODUCTION

Q. Please state your name, occupation 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 direct testimony?

A. I am submitting this direct testimony before the Wisconsin Public Service Commission ("Commission") on behalf of Wisconsin Public Service Corporation ("WPSC").

Q. Please describe your education and experience.

A. I hold a bachelor's degree in Economics and Finance from Simmons College and a master's degree in Economics from Boston University. I have 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 my testimony in other proceedings are included as Ex.-WPSC-Bulkley-1.

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to present evidence and provide a recommendation regarding the appropriate return on equity ("ROE") for WPSC, and to assess the reasonableness of its proposed capital structure for ratemaking purposes.

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

A. Yes. I am sponsoring the following exhibits, which were prepared by me or under my direction.

- **Ex.-WPSC-Bulkley-1** – Resume and Testimony Listing of Ann E. Bulkley
- **Ex.-WPSC-Bulkley-2** – Summary of Results
- **Ex.-WPSC-Bulkley-3** – Proxy Group Screening
- **Ex.-WPSC-Bulkley-4** – Constant Growth DCF Results
- **Ex.-WPSC-Bulkley-5** – CAPM/ECAPM Results
- **Ex.-WPSC-Bulkley-6** – Proxy Group Long-Term Beta
- **Ex.-WPSC-Bulkley-7** – Market Return Calculation
- **Ex.-WPSC-Bulkley-8** – Bond Yield Risk Premium Results
- **Ex.-WPSC-Bulkley-9** – Capital Expenditures Analysis
- **Ex.-WPSC-Bulkley-10** – Regulatory Risk Analysis
- **Ex.-WPSC-Bulkley-11** – RRA Rankings Analysis
- **Ex.-WPSC-Bulkley-12** – S&P Credit Supportive Analysis
- **Ex.-WPSC-Bulkley-13** – Proxy Group Capital Structure Analysis

Q. Please provide a summary of your recommended range for the ROE in this proceeding.

A. Reviewing the cost of equity estimation models I developed for my testimony and considering current market conditions and business risk factors, I conclude that a reasonable range for the ROE is 10.25 percent to 11.25 percent. However, the WPSC is requesting that the Commission authorize an ROE of 10.00 percent. This requested ROE is at the median result of the Constant Growth DCF model for WPSC. Further, the requested ROE is below the low end of the range of all of the risk premium models that I developed for WPSC (CAPM, ECAPM and Bond Yield Risk Premium). Taking into consideration all of the analyses I prepared, I conclude that the requested ROE of 10.00 percent is reasonable.

Q. Please summarize your conclusions about the Company's capital structures.

A. Based on my review of the capital structures of the utility operating companies owned by the proxy group companies and considering the requested ROE for each of these companies, I conclude that the WPSC's requested financial capital structure, which would include 53.50 percent equity, is reasonable and appropriate. A financial capital structure of 53.50 percent equity results in a regulatory capital structure for WPSC within the range of the proxy group analysis. Particularly in light of the relatively lower ROE requested by WPSC, I conclude that a financial capital structure that includes 53.50 percent equity is reasonable and appropriate for WPSC.

Q. Please provide a summary of your recommended range for the ROE in this proceeding.

A. Reviewing the cost of equity estimation models developed in my Direct Testimony and considering current market conditions and the various business risk factors discussed in my Direct Testimony, I conclude that a reasonable range for the ROE is 10.25 percent to 11.25 percent. However, the Company is requesting that the Commission authorize an ROE of 10.00 percent. This requested ROE is at the median result of the Constant Growth DCF model for Wisconsin Public Service. Further, the requested ROE is at below the low end of the range of all of the risk premium models that I developed for Wisconsin Public Service (CAPM, ECAPM and Bond Yield Risk Premium). Taking into consideration all of the analyses prepared in my Direct Testimony, I conclude that the requested ROE of 10.00 percent is reasonable.

Q. Please summarize your conclusions regarding the Company's capital structures.

A. Based on my review of the capital structures of the utility operating companies owned by the proxy group companies and considering the requested ROE for each of these companies, I conclude that the Company's financial capital structure, which is composed of 53.50 percent equity is reasonable and appropriate. The proposed regulatory capital structure for Wisconsin Public Service, which includes 54.90 percent equity in test year 2025 and 54.68 percent equity in test year 2026 is within the range of the proxy group analysis and is reasonable, particularly when considering the requested ROE.

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

A. In developing my recommendation regarding WPSC's proposed ROE in this proceeding, I estimated the cost of equity by applying several traditional estimation methodologies to a proxy group, specifically the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and a Bond Yield Risk Premium ("BYRP" or "Risk Premium") analysis. My recommendation also takes into consideration WPSC's relative business and regulatory risk as compared with the proxy group, and WPSC's proposed capital structure as compared with the capital structures of the operating utilities of the proxy group companies. Although 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 II provides a summary of my analyses and conclusions.
- Section III reviews the regulatory guidelines pertinent to the development of the cost of capital.
- Section IV discusses current and projected capital market conditions and the effect of those conditions on WPSC's cost of equity.
- Section V explains my selection of the proxy group.
- Section VI describes my analyses and the analytical basis for the recommendation of the appropriate ROE for WPSC.

- Section VII provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for WPSC in this case.
- Section VIII provides an assessment of the reasonableness of WPSC's proposed capital structure.
- Section IX presents my conclusions and recommendations.

II. SUMMARY OF ANALYSIS AND CONCLUSIONS

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

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

- The United States Supreme Court's *Hope* and *Bluefield* decisions [1] 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 and support credit quality, and the requirement that the result lead to just and reasonable rates
- The effect of and prospective capital market conditions on the cost of equity estimation models and on investors' return requirements.
- The results of several analytical approaches that provide estimates of WPSC's cost of equity. Because WPSC's authorized ROE should be a forward-looking estimate over the period during which the rates will be in effect, these analyses rely on forward-looking inputs and assumptions (*e.g.*, projected analyst growth rates in the DCF model and forecasted risk-free rate and market risk premium in the CAPM analysis).
- Although the companies in my proxy group are generally comparable to WPSC, each company is unique, and no two companies have the exact same business and financial risk profiles. Accordingly, I considered WPSC's

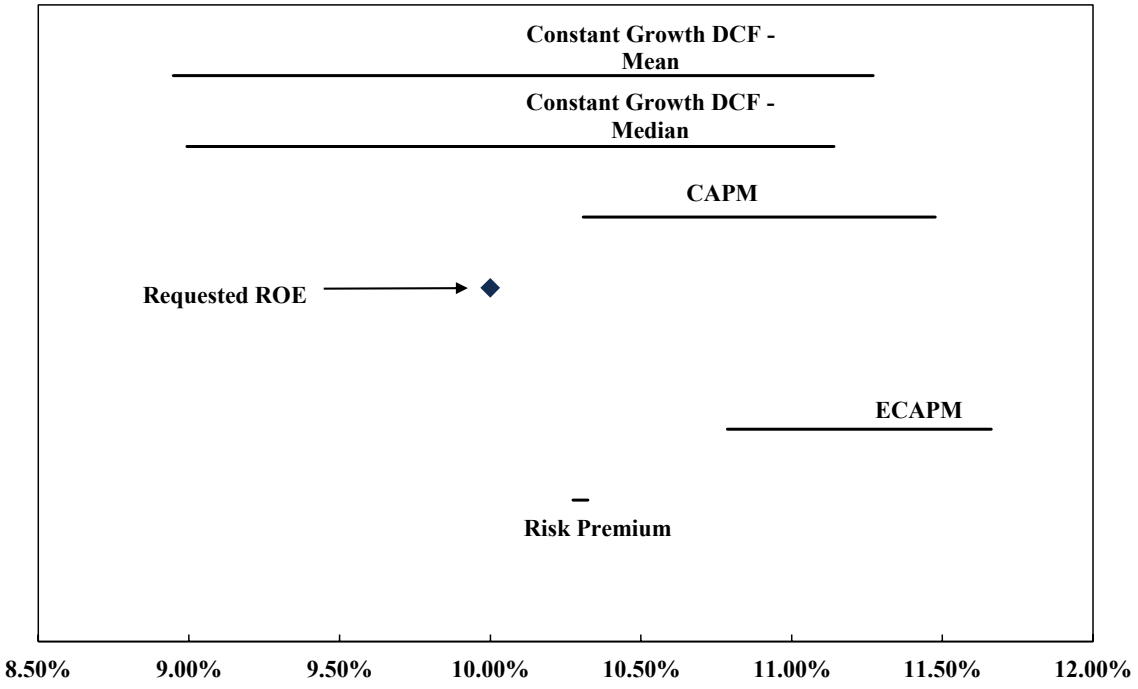
[1] Fed. Power Comm'n v. Hope Nat. Gas Co., 320 U.S. 591 (1944) ("Hope"); Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm'n of West Virginia, 262 U.S. 679 (1923) ("Bluefield").

regulatory, business, and financial risks relative to the proxy group of comparable companies in determining where WPSC's ROE should fall within the reasonable range of analytical results to appropriately account for any residual differences in risk.

Q. What are the results of the models that you have used to estimate the cost of equity for WPSC in this proceeding?

A. Figure 1 summarizes the range of results of my cost of equity analyses.

Figure 1: Summary of Cost of Equity Analytical Results



As shown, the range of results across all methodologies is wide. Although 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.

Q. Are prospective capital market conditions expected to affect the cost of equity for WPSC during the period in which the rates established in this proceeding will be in effect?

A. Yes. Capital market conditions are expected to affect the results of the cost of equity estimation models. Specifically:

- Long-term interest rates have increased substantially in the past two years and are expected to remain relatively high at least over the next year in response to inflation.
- Because (i) utility dividend yields are less attractive than the risk-free rates of government bonds; (ii) interest rates are expected to remain near current levels over the next year, and (iii) utility stock prices are inversely related to changes in interest rates; utility share prices may remain depressed.
- Rating agencies have responded to the risks of the utility sector, citing factors including elevated capital expenditures, interest rates, and inflation that create pressures for customer affordability and prompt rate recovery, and have noted the importance of regulatory support in their current outlooks.
- Similarly, equity analysts have noted the increased risk for the utility sector as a result of rising interest rates and expect the sector to underperform in 2024.
- Consequently, it is important to consider that if utility share prices decline, the results of the DCF model, which relies on current utility share prices, would understate the cost of equity during the period that WPSC's rates will be in effect.

It is appropriate to consider all of these factors when estimating a reasonable range of the investor-required cost of equity and the recommended ROE for WPSC.

Q. Is WPSC's requested ROE reasonable?

A. Yes. Considering the range of analytical results of the cost of equity models, current and prospective capital market conditions, and WPSC's regulatory, business, and financial risk relative to the proxy group, WPSC's requested ROE of 10.00 percent is reasonable.

Q. Is WPSC's requested capital structure reasonable and appropriate?

A. Yes. WPSC's proposed equity ratio of 53.5 percent is well within the range of the actual capital structures of the utility operating subsidiaries of the proxy group companies. Further, WPSC's proposed equity ratio is reasonable considering credit rating agencies' continued concern with the negative effect on the cash flows and credit metrics associated relatively high interest rates and inflation, record levels of capital spending, and the need to fund capital spending in a credit supportive manner.

III. REGULATORY GUIDELINES

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

A. The U.S. Supreme Court's precedent-setting *Hope* and *Bluefield* cases established the standards for determining the fairness or reasonableness of a utility's authorized ROE. Among the standards established by the Court in those cases are: (1) consistency with other businesses having similar or comparable risks; (2) adequacy of the return to support credit quality and access to capital; and (3) the principle that the specific means of arriving at a fair return are not important, only

that the end result (*i.e.*, an ROE that reflects investors' requirements for investments of comparable risks and supports a utility's credit quality and access to capital) leads to just and reasonable rates.[2]

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

A. Yes. The Commission follows the precedents of the *Hope* and *Bluefield* cases by acknowledging that utility investors are entitled to a fair and reasonable return. For example, in WPSC's previous 2022 rate case (Docket No. 6690-UR-127), the Commission stated that:

> The principal factor used to determine the appropriate ROE is the investors' required return. Authorized returns of less than the investors' required return would fail to compensate capital providers for the risks they face when providing funds to the utility. Such sub-par returns would make it difficult for a utility to raise capital on an ongoing basis. On the other hand, authorized returns that exceed the investors' required return would provide windfalls to utility investors as they would receive returns that are in excess of the necessary level. Such high returns would be unfair to utility consumers who ultimately pay for those returns. In reaching its determination as to the appropriate ROE, the Commission must balance the needs of investors with the needs of consumers, with due considerations to economic and financial conditions, along with public policy considerations.[3]

This guidance is in accordance with my view that an authorized rate of return on equity must be sufficient to enable regulated companies, like WPSC, the ability to attract equity capital on reasonable terms.

[2] *Bluefield*, 262 U.S. at 692-93; *Hope*, 320 U.S. at 603.
[3] Final Decision, Docket No. 6690-UR-127 (PSC REF#: 455196) (Dec. 22, 2022) at 45.

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 WPSC to continue to provide safe, reliable electric and natural gas service while maintaining its financial integrity. That return should be commensurate with returns expected elsewhere in the market for investments of equivalent risk. If it is not, debt and equity investors will seek alternative investment opportunities for which the expected return reflects the perceived risks, thereby inhibiting WPSC's ability to attract capital at reasonable cost.

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 utilities. Therefore, the ROE authorized for 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, over the same time period, investors have an incentive to direct their capital to those alternative investments. Thus, an authorized ROE significantly below authorized ROEs for other utilities can inhibit the utility's ability to attract capital for investment.

Q. What is the standard for setting the ROE in a jurisdiction?

A. The stand-alone ratemaking principle is the foundation of jurisdictional ratemaking. This principle requires that the rates that are charged in any operating jurisdiction be for the costs incurred in that jurisdiction. The stand-alone ratemaking principle ensures that customers in each jurisdiction only pay for the costs of the service provided in that jurisdiction, which is not influenced by the business operations in other operating companies. In order to maintain this principle, the cost of equity analysis is performed for an individual operating company as a stand-alone entity. As such, I have evaluated the investor-required return for WPSC's utility operations in Wisconsin.

Q. Does the fact that WPSC is wholly-owned by WEC Energy Group, Inc. ("WEC"), a publicly-traded company, affect your analysis?

A. No. In this proceeding, consistent with stand-alone ratemaking principles, it is appropriate to establish the cost of equity for WPSC, not its publicly-traded parent, WEC. More importantly, however, it is appropriate to establish a cost of equity and capital structure that provide WPSC the ability to attract capital on reasonable terms, both on a stand-alone basis and within WEC. Although WPSC is committed to investing the required capital to provide safe and reliable service, because it is a subsidiary of WEC, WPSC competes with the other WEC subsidiaries for discretionary investment capital. In determining how to allocate its finite discretionary capital resources, it would be reasonable for WEC to consider the authorized ROE of each of its subsidiaries.

Q. Is the regulatory framework, including the authorized ROE and equity ratio, important to the financial community?

A. Yes. The regulatory framework is one of the most important factors in investors' assessments of the risk of utilities. Specifically, the authorized ROE and equity ratio for regulated utilities is very important for determining the degree of regulatory support for a utility's creditworthiness and financial stability in the jurisdiction. To the extent that authorized returns in a jurisdiction are lower than the returns that have been authorized more broadly, such actions are considered by both debt and equity investors in the overall risk assessment of the regulatory jurisdiction in which the company operates.

Q. Are you aware of any utilities that have experienced a credit rating downgrade and/or market response related to the financial effects of a rate case decision?

A. Yes. There are numerous examples in which utilities have experienced a negative market response related to the financial effects of a rate decision, including credit rating downgrades and material stock price declines. For example, ALLETE, Inc.,[4] CenterPoint Energy Houston Electric,[5] and Pinnacle West Capital Corporation ("PNW")[6] each received credit rating downgrades following rate case decisions in

[4] Moody's Investors Service, "Credit Opinion: ALLETE, Inc. Update following downgrade," April 3, 2019, at 3. Any information contained in this citation, based solely on this citation, is not record evidence (NRE).

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

[6] S&P Capital IQ Pro; Fitch Ratings, "Fitch Downgrades Pinnacle West Capital & Arizona Public Service to 'BBB+'; Outlooks Remain Negative," October 12, 2021; and Moody's Investors Service, "Rating Actions: Moody's downgrades Pinnacle West to Baa1 and Arizona Public Service to A3; outlook negative," November 17, 2021. NRE.

the past few years for reasons that included below average authorized ROEs. The most recent examples are the decision by the Illinois Commerce Commission ("ICC") in mid-December 2023 that rejected the multiyear grid plan proposals of Ameren Illinois Co. ("Ameren IL") and Commonwealth Edison Co. ("ComEd") and authorized lower-than-expected ROEs for both utilities. Specifically, the ICC authorized an ROE for Ameren IL of 8.72 percent and 8.905 percent for ComEd, which was a significant reduction from the Administrative Law Judge's recommendations of 9.24 percent and 9.28 percent, respectively.[7] In addition, the ICC issued decisions for the natural gas utilities, including Peoples Gas and North Shore Gas that resulted in low authorized ROEs and significant disallowances. [8]

Q. How did the market respond to the ICC's Decisions for these utilities?

A. Although the Standard & Poor's ("S&P") 500 Index was increasing, the share prices of the parent companies of both Ameren IL and ComEd (*i.e.*, Ameren Corp. and Exelon Corp., respectively) each dropped more than 7 percent on December 14, 2023 after the ICC's decision, and declined again by more than 4.4 percent and 6.4 percent the following day, respectively.[9] As of the close on January 5, 2023, stock prices for Ameren and Exelon were, respectively, 8.9 percent and 11.4

7 Allison Good, "Ameren, Exelon shares fall after Illinois regulators reject grid plans," *Platts*, December 15, 2023. NRE.

8 Peoples Gas and North Shore Gas were authorized ROEs of 9.38 percent. See Illinois Commerce Commission Docket Nos. 23-0069 and 23-0068. NRE.

9 Yahoo! Finance. NRE.

percent below where their stock prices closed on December 13, 2023, or the day immediately prior to the ICC's decisions.[10]

In addition, the reactions of equity analysts were universally negative, and questioned whether the parents of both Ameren IL and ComEd (*i.e.*, Ameren Corp. and Exelon Corp., respectively) will shift their capital spending out of the jurisdiction as a result of the uncertainty associated with the multiyear rate plan and low authorized ROEs. For example:

- Barclays characterized the ICC's ROE authorizations as "draconian" and "one of the lowest awarded in recent memory, especially in an elevated interest rate and cost of capital environment."[11] Barclays also stated it found it hard to believe utilities "can deploy capital under the same magnitude on the updated grid plans to be filed, especially under the current proposed ROE framework."
- In its assessment of the impact on Exelon, the parent of ComEd, UBS stated that, "[t]he actions taken by the ICC today call into question, in our view, the regulatory backdrop in which [Exelon] operates."[12]
- Wells Fargo stated that it was not mincing words, that the ICC's orders were "onerous" and that:

> We now view IL as one of the worst regulatory jurisdictions in the U.S. (nipping at CT's heels). We think the totality of the recent orders suggest that the regulatory balancing act between customers and investors is currently heavily skewed toward customers. As a result, we wonder if AEE & EXC will allocate capital away from IL. Keep in mind, IL represents ~25% of both AEE's & EXC's total rate base."[13]

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10 Ameren Corp.'s stock price closed at $81.32 on December 13, 2023 and $74.05 on January 5, 2023. Exelon Corp.'s stock price closed at $41.00 on December 13, 2023 and $36.31 on January 5, 2023.

11 Barclays, "AEE/EXC: Coal Stocking-Stuffer in Illinois," December 14, 2023. NRE.

12 UBS, First Read Exelon Corp., "Negative Rate Case Outcome – Rating and PT Under Review," December 14, 2023. NRE.

13 Wells Fargo, "The ICC Delivers a Lump of Coal for AEE & EXC," December 14, 2023. NRE.

- In its evaluation of Ameren IL, BofA Securities characterized the ICC's decision as "punitive" and stated that it was a surprise based on numerous conversations with investors that believed the ICC may authorize an ROE above the ALJ's recommendation, not substantially lower, and that the downside surprise was one of the biggest in recent memory for their regulated utility coverage.[14] Although BofA Securities acknowledged that Ameren IL represents less than 20 percent of Ameren Corp.'s consolidated rate base, it will nonetheless need offsets or capital expenditures elsewhere in order to hit its earnings growth rate targets.[15]
- After the decisions, Guggenheim questioned, "Is Illinois Becoming the Next Connecticut?" Guggenheim noted that investors questioned whether Illinois was "slowly becoming a CT-esque jurisdiction," and that equity and debt holders are going to be wary of Illinois as a jurisdiction going forward and that the ICC is "simply sending a negative message to investors."[16]

Also after the ICC's decisions, Regulatory Research Associates ("RRA") lowered its rating of the Illinois regulatory jurisdiction from Average/2 to Average/3 due to the "concerning pattern of restrictive" rate actions in the state.[17]

Q. How did the companies respond to the Illinois rate decision?

A. Ameren reduced its capital spending plan significantly following the rate decisions.[18] WEC Energy Group took an impairment related to the ICC disallowance in the amount of $178.0 million and reduced its capital plans for Illinois gas delivery by $800 million.[19]

14 BofA Securities, Ameren Corporation, "Illinois delivers downside surprise," December 15, 2023. NRE.
15 *Id*.
16 Guggenheim, "IL: Is Illinois Becoming the Next Connecticut? To Be Determined, but Taking a Neutral Stance on the State," December 15, 2023. NRE.
17 Regulatory Research Associates, Commission reviews accessed March 1, 2024. NRE.
18 Ameren Corporation FQ4 2023 Earnings Call Transcript, February 23, 2024, p.11. NRE.
19 WEC Energy Group, 2023 Year End Earnings Released February 1, 2024, at pp. 5, 17. NRE.

Q. What are your conclusions regarding the regulatory principles to be used in establishing the cost of capital in this proceeding?

A. The ratemaking process is premised on the principle that, in order for investors and companies to commit the capital needed to provide safe and reliable utility services, a utility must have a reasonable opportunity to recover the return of, and the market-required return on, its invested capital. Accordingly, the Commission's order in this proceeding should establish rates that provide WPSC with a reasonable opportunity to earn a ROE that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure its financial integrity; and (3) commensurate with returns on investments in enterprises with similar risk. It is important for the ROE authorized in this proceeding to take into consideration current and projected capital market conditions, as well as investors' expectations and requirements for both risks and returns. 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. Providing the opportunity to earn a market-based cost of capital supports the financial integrity of WPSC, which is in the interest of both customers and shareholders.

IV. CAPITAL MARKET CONDITIONS

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

A. The models used to estimate the cost of equity rely on market data and thus the results of those models can be affected by prevailing market conditions at the time

the analysis is performed. Although the ROE established in a rate proceeding is intended to be forward-looking, the analysis uses current and projected market data, including stock prices, dividends, growth rates, and interest rates, in the cost of equity estimation models to estimate the investor-required return for the subject company.

Analysts and regulatory commissions recognize that current market conditions affect the results of the cost of equity estimation models. As a result, it is important to consider the effect of market conditions on these models when determining an appropriate range for the ROE, and the reasonableness of an ROE to be used for ratemaking purposes for a future period. If investors do not expect current market conditions to continue, it is possible that the cost of equity estimation models will not provide an accurate estimate of investors' required return while rates are in effect. Therefore, it is very 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) relatively high inflation; (2) changes in monetary policy; and (3) elevated interest rates that are expected to remain relatively high over the next few years. These factors affect the assumptions used in the cost of equity estimation models.

A. Inflation Expected to Remain Above Federal Reserve's Target Level in the Near-Term.

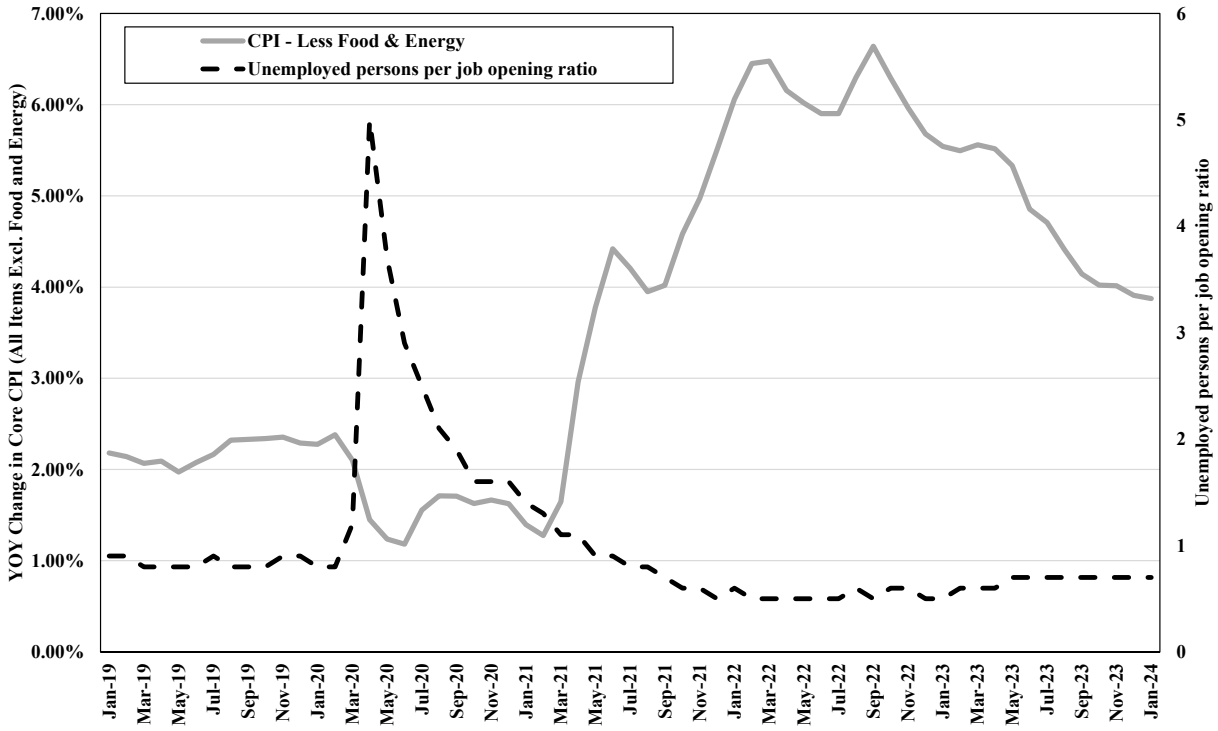
Q. What has the level of inflation been over the past few years?

A. As shown in Figure 2, core inflation increased steadily beginning in early 2021, rising from 1.40 percent in January 2021 to a high of 6.64 percent in September 2022, which was the largest 12-month increase since 1982.[20] Since that time, although core inflation has declined in response to the Federal Reserve's monetary policy, it continues to remain above the Federal Reserve's target level of 2.0 percent.

In addition, as shown in Figure 2**Error! Reference source not found.**, I have also considered the ratio of unemployed persons per job opening, which is currently 0.7 and has been consistently below 1.0 since 2021, despite the Federal Reserve's accelerated policy normalization. This metric indicates sustained strength in the labor market. Given the Federal Reserve's dual mandate of maximum employment and price stability, continued increased levels of core inflation coupled with strength in the labor market has resulted in the Federal Reserve's sustained focus on the priority of reducing inflation through monetary policy.

[20] The year-over-year ("YOY") change in core inflation, as measured by the Consumer Price Index ("CPI") excluding food and energy prices as published by the Bureau of Labor Statistics, is considered because it is the preferred inflation indicator of the Federal Reserve for determining the direction of monetary policy. Core inflation is preferred by the Federal Reserve because it removes the effect of food and energy prices, which can be highly volatile.

Figure 2: Core Inflation and Unemployed Persons-to-Job Openings, January 2019 to January 2024[21]



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

A. The Federal Reserve has indicated it expects inflation will remain elevated above its target level until 2026 and that the extent to which it maintains restrictive monetary policy will depend on market indicators going forward. For example, Federal Reserve Chair Jerome Powell observed during the Federal Open Market Committee ("FOMC") meeting on January 31, 2024 that although inflation is less than its recent highs, progress towards the objective of 2 percent inflation is not assured and may require policy rates to remain elevated for longer.[22] The FOMC

[21] Bureau of Labor Statistics.

concluded their January 2024 FOMC meeting with a unanimous decision to leave the federal funds rate unchanged.

More recently, Chairman Powell addressed Congress on March 6, 2024, indicating that "the central bank's policy-setting committee still isn't convinced that continued progress toward their 2% inflation objective is 'assured', and that it won't make sense to cut interest rates until it is confident."[23] Chairman Powell further noted that the labor market remains relatively tight even though inflation has eased notably.[24] Finally, at the March 2024 meeting the FOMC decided maintain the target range for the federal funds rate at 5.25 percent to 5.50 percent. In his speech following the meeting, Chairman Powell noted the continued economic strength, and that the FOMC remains highly attentive to inflation risks and is prepared to maintain the current federal funds rate for longer, if appropriate.[25]

Q. What is the market's expectation about interest rate cuts?

A. The market has recognized the strength in the economy and the labor market and has tempered its expectations that regarding how much the FOMC will decrease the federal funds rate in 2024. The CME Group, which publishes a "FedWatch" probability chart of FOMC activity, is currently reporting less than a ten percent probability that the FOMC will reduce rates in May.[26]

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23 Barron's, Powell Testimony" Fed Won't Rush Rate Cuts, March 6, 2024. NRE.
24 Id.
25 Federal Reserve, Transcript of Chair Powell's Press Conference, March 20, 2024, at 16. NRE.
26 CME Group, CME FedWatch Tool, accessed March 28, 2024. NRE.

B. The Federal Reserve is Likely to Continue Use of Monetary Policy to Address Inflation.

Q. What policy actions has the Federal Reserve taken to respond to increased inflation?

A. The dramatic increase in inflation since 2021 has prompted the Federal Reserve to pursue an aggressive normalization of monetary policy, removing the accommodative policy programs used to mitigate the economic effects of COVID-19. Since the March 2022 meeting, the Federal Reserve increased the target federal funds rate through a series of increases from a range of 0.00 – 0.50 percent to a range of 5.25 percent to 5.50 percent.[27] Further, as noted above, while the Federal Reserve acknowledges that inflation has declined from its peak, it still is well above the Federal Reserve's target of 2 percent. Therefore, the Federal Reserve anticipates the continued need to maintain the federal funds rate at a restrictive level in order to achieve its goal of 2 percent inflation over the long-run.

C. The Federal Reserve's Monetary Policy to Combat Inflation Has Increased Short- and Long-Term Interest Rates and the Investor-Required Return

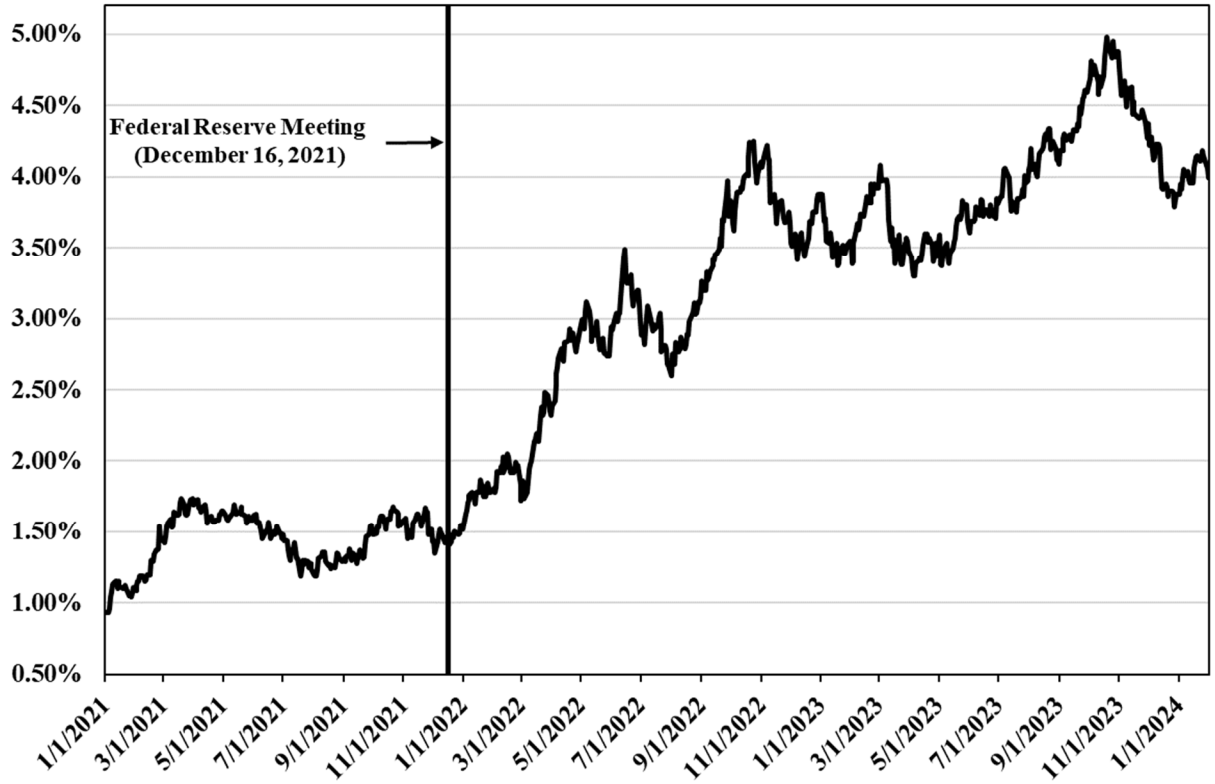
Q. Have yields on long-term government bonds increased in response to inflation and the Federal Reserve's normalization of monetary policy?

A. Yes. As the Federal Reserve has substantially increased the federal funds rate and decreased its holdings of Treasury bonds and mortgage-backed securities in response to increased levels of inflation that have persisted for longer than

[27] Federal Reserve Board of Governors Policy Tools, Open Market Operations, FOMC's target federal funds rate or range. NRE.

originally projected, longer term interest rates have also increased. For example, as shown in Figure 3, since the Federal Reserve's December 2021 meeting, the yield on 10-year Treasury bonds have increasing from 1.47 percent on December 15, 2021 to 3.99 percent at the end of January 2024.

Figure 3: 10-Year Treasury Bond Yield, January 2021 – January 2024



Q. How have interest rates and inflation changed since WPSC's last rate case?

A. As shown in

A. Figure 4, both short-term and long-term interest rates have increased since the Commission authorized an ROE of 9.80 percent for WPSC in its last full rate proceeding. Specifically, long-term interest rates have increased by 50 basis points over this period, which is indicative of an increase in the cost of equity. As discussed, as a result of the Federal Reserve's monetary policy of substantially

increasing short-term interest rates, core inflation has declined since the last rate proceeding, although inflation remains above the Federal Reserve's long-term target value of 2.0 percent.

Figure 4: Change in Market Conditions Since WPSC's Last Rate Case[28]

Docket	Date	Federal Funds Rate	30-Day Avg. of 30-Year Treasury Bond Yield	Core Inflation Rate
Docket No. 6690-UR-127	12/22/2022	4.33%	3.71%	5.68%
Current	1/31/2024	5.33%	4.19%	3.87%

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. For example, according to the *Blue Chip Financial Forecasts* report, the consensus estimate of the average yields on the 10-year and 30-year Treasury bonds are approximately 3.88 percent and 4.10 percent, respectively, through the second quarter of 2025.[29] Therefore, investors expect interest rates to remain elevated for at least the next 15 months.

[28] St. Louis Federal Reserve Bank; Bureau of Labor Statistics. NRE.
[29] *Blue Chip Financial Forecasts*, Vol. 42, No. 2, February 1, 2024, at 2. NRE.

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

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

A. Yes. Interest rates and utility share prices are inversely correlated, which means that increases in interest rates result in declines in the share prices of utilities and vice versa. For example, Goldman Sachs and Deutsche Bank examined the sensitivity of share prices of different industries to changes in interest rates over a five-year period. 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).[30]

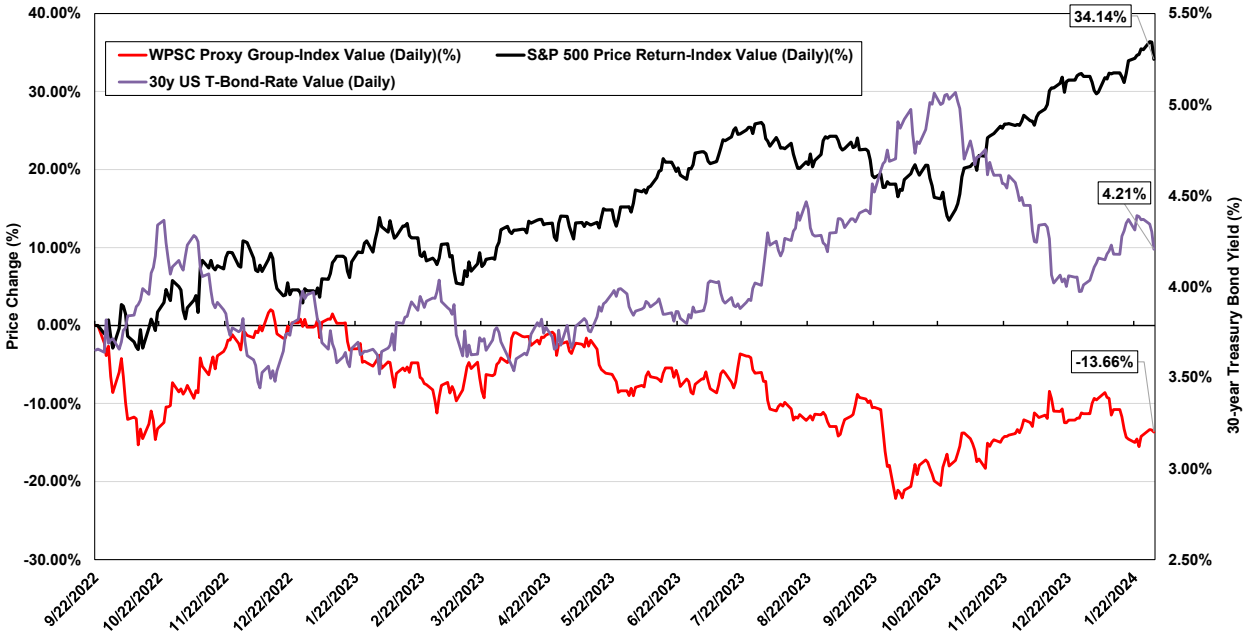
Q. In WPSC's last full rate proceeding, you discussed equity analysts' expected underperformance of the utility sector. Did that occur?

A. Yes. Since the filing of my rebuttal testimony in WPSC's last full rate proceeding in the fall of 2022, utility stocks have significantly underperformed the broader market, as Treasury bond yields have increased to levels greater than the dividend yields of utility stocks. For example, as shown in Figure 5, since September 22, 2022 (*i.e.*, the filing date of my rebuttal testimony in WPSC's last rate proceeding), as noted, the yield on the 30-year Treasury bond has increased by approximately 60 basis points, while the share prices for the utilities included in my proxy group (discussed in the following section) have *declined* by 13.66 percent and the S&P 500

[30] Lee, Justina, "Wall Street Is Rethinking the Treasury Threat to Big Tech Stocks." Bloomberg.com, March 11, 2021. NRE.

Index has *increased* by 34.14 percent. The stock price under-performance for the utility sector indicates that the cost of equity has increased since WPSC's last rate proceeding.

Figure 5: Relative Performance of the Proxy Group and the S&P 500 Index, September 2022 to January 2024[31]



Q. How do equity analysts expect the utilities sector to perform in 2024?

A. Equity analysts have recently projected the continued underperformance of the utility sector, and have not changed their views on the sector:

- Fidelity Investments classifies the utility sector as underweight;[32]
- Bank of America recently noted that they are "not so constructive on [u]tilities" given that the dividend yields for utilities are below both the yields available on long- and short-term treasury bonds;[33]

31 S&P Capital IQ Pro. NRE.
32 Fidelity Investments. "First Quarter 2024 Investment Research Update." January 30, 2024. NRE.
33 Julien Dumoulin-Smith, *et. al.*, "US Electric Utilities & IPPs: As the leaves fall, preparing for Autumn utility outlook. Macro still has potholes," BofA Securities, September 6, 2023. NRE.

- UBS recently classified the 11 sectors of the S&P 500 as most preferred, natural and least preferred for 2024 with the utility sector being classified as one of UBS's three least preferred sectors along with materials and real estate;[34] and
- Professional investors surveyed by *Barron's* in its most recent Big Money poll selected the utility sector as one of the four equity sectors that they liked the least over the next twelve months, indicating they are projecting that utilities will underperform the broader market in 2024.[35]

Finally, although Ned Davis Research classified the utility sector as marketweight, they cited risks going forward that could result in a downgrade of their rating to underweight:

> Key drivers: Falling yields have made Utilities' dividend yield more attractive, but the sector still yields less than the 10-year Treasury. At the end of December, only 40% of the sector's stocks yielded more than the 10-year Treasury, 0.6 standard deviations below its long-term average. Lower interest rates or a continuation of the sector's decline in price will be needed to attract dividend-hungry investors.
>
> Indicators to watch: Utilities saw slight sector model score deterioration in December, as one of its relative overbought/oversold indicators flipped from bullish to neutral during the month. Utilities starts 2024 tied with Consumer Staples and Financials for the lowest composite scores among all sectors. We see the possibility for more defensive leadership in the new year, but the sector model has us much closer to a downgrade of the sector than an upgrade.[36]

[34] Capul, Jason. "UBS Prefers Info Tech, Consumer Staples and Energy in 2024." Seeking Alpha, December 12, 2023. NRE.

[35] Nicholas Jasinski, "Big Money Pros Are Split on the Outlook for Stocks. But They Are Fans of Bonds," *Barron's*, October 27, 2023. NRE.

[36] Ned Davis Research, "Risk-on leadership closes out 2023, January 4, 2024, at 18. NRE.

Q. Why do equity analysts expect the utility sector to underperform over the near-term?

A. Equity analysts expect the utility sector to continue to underperform given that utility dividend yields remain higher than the yields on long-term government bonds. To illustrate this point, I have examined the difference between the dividend yields of utility stocks and the yields on long-term government bonds from January 2010 through January 2024 ("yield spread"). I selected the dividend yield on the S&P's 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 6, the recent significant increase in long-term government bonds yields has resulted in the yield on long-term government bonds exceeding the dividend yields of utilities. The yield spread as of January 31, 2024 was negative 0.42 percent, meaning that the yield on the 10-year Treasury bond exceeds the dividend yield for the S&P Utilities Index. However, the long-term average yield spread from 2010 to 2023 is 1.21 percent. Therefore, the current yield spread is well below the long-term average. Because of the fact that the yield spread is currently well below the long-term average, and the expectation that interest rates will remain relatively high through at least the next year, it is reasonable to conclude that the 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 remain elevated, thus resulting in a decrease in the share prices of utilities.

Figure 6: Spread between the S&P Utilities Index Dividend Yield and the 10-year Treasury Bond Yield, January 2010 – January 2024[37]

E. Conclusion.

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

A. Due to their effect on the estimated cost of equity, it is important that current and projected market conditions be considered in setting the forward-looking ROE in this proceeding. The combination of high inflation and the Federal Reserve's changes in monetary policy indicate that the cost of equity has increased since

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

WPSC's last rate proceeding. Additionally, as demonstrated above, (i) there is a strong historical inverse correlation between interest rates (*i.e.*, yields on long-term government bonds) and the share prices of utility stocks (*i.e.*, as interest rates increase, utility share prices decline, and thus utility dividend yields increase); and (ii) the yields on long-term government bonds currently exceed the dividend yields of utilities, when historically long-term government bond yields have been lower than the dividend yields of utilities. Given these factors, it is possible that the cost of equity could increase over the near-term for utilities. As a result, cost of equity estimates based in whole or in part on historical or current market conditions, as opposed to projected market conditions, may understate the cost of equity during the future period that WPSC's rates will be in effect. Therefore, these current and expected market conditions support consideration of forward-looking cost of equity estimation models such as the CAPM and ECAPM, which better reflect expected market conditions.

V. PROXY GROUP SELECTION

Q. Please provide a brief profile of WPSC.

A. WPSC provides electric generation, transmission, and distribution services to approximately 461,200 electric customers and 340,600 natural gas customers located in northeastern and central Wisconsin. WPSC owns 2,475 MW of generation capacity and serves its electric customers with approximately 13,800 miles of overhead distribution lines and approximately 9,000 miles of underground distribution cable. WPSC provides service to its natural gas

customers through approximately 8,500 miles of natural gas distribution mains and 250 miles of natural gas transmission mains.[38] WPSC's current long-term issuer ratings are: (1) A- (outlook stable) from S&P; and (2) A2 (outlook Stable) from Moody's.[39]

Q. Why have you used a proxy group of publicly traded companies to estimate the cost of equity for WPSC?

A. In this proceeding, I am estimating the cost of equity for WPSC, a rate-regulated subsidy of WEC. Because the cost of equity is a market-based concept and WPSC does not make up the entirety of a publicly-traded entity, it is necessary to establish a group of companies that is both publicly traded and comparable to WPSC in certain fundamental business and financial respects to serve as its "proxy" for purposes of estimating the cost of equity.

The overall purpose of developing a set of screening criteria is to select a proxy group of companies that aligns with the financial and operational characteristics of WPSC and that investors would view as comparable to WPSC. I developed the screens and thresholds for each screen based on judgment with the intention of balancing the need to maintain a proxy group that is of sufficient size with the need to establish a proxy group of companies that are comparable in business and financial risk to WPSC.

[38] Wisconsin Public Service Corporation, Form 10-K, Fiscal Year Ended December 31, 2022, at 4-5 and 29. NRE.

[39] S&P Global Ratings and Moody's Investors Service, accessed March 7, 2024. NRE.

Even if WPSC's regulated utility business made up the entirety of a publicly-traded entity, it is possible that transitory events could bias its market value over a given time period. A significant benefit of using a proxy group is that it mitigates the effects of anomalous events that may be associated with any one company. The proxy companies used in my analyses all possess a set of operating and financial risk characteristics that are substantially comparable to WPSC, and, therefore, provide a reasonable basis to estimate the cost of equity for WPSC.

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

A. I began with the group of companies that *Value Line Investment Survey* ("*Value Line*") classifies as Electric Utilities and Natural Gas Distribution Utilities and applied screening criteria to select companies that:

- pay consistent quarterly cash dividends, because companies that do not cannot be analyzed using the Constant Growth DCF model;
- have investment grade long-term issuer ratings from S&P and/or Moody's;
- are covered by more than one utility industry analyst;
- have positive long-term earnings growth forecasts from at least two utility industry equity analysts;
- own generation assets included in rate base;
- have more than 30 percent of company-owned generation;
- derive more than 60 percent of their total operating income from regulated operations; and,
- were not party to a merger or transformative transaction during the analytical period considered or had a material event that would have affected the market data for the company.

Q. What is the composition of the proxy group?

A. The screening criteria just discussed resulted in a proxy group consisting of the companies shown in Figure 7.

Figure 7: Proxy Group

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avista Corporation	AVA
Black Hills Corporation	BKH
CMS Energy Corporation	CMS
Duke Energy Corporation	DUK
Entergy Corporation	ETR
Evergy, Inc.	EVRG
IDACORP, Inc.	IDA
MGE Energy, Inc.	MGEE
NextEra Energy, Inc.	NEE
NiSource Inc.	NI
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE
Pinnacle West Capital Corporation	PNW
Portland General Electric Company	POR
Southern Company	SO
Xcel Energy Inc.	XEL

VI. COST OF EQUITY ESTIMATION

Q. Please explain the ROE in the context of the regulated rate of return.

A. The rate of return for a regulated utility is the weighted average cost of capital, in which the costs of the individual sources of capital are weighted by their respective proportion (*i.e.*, book values) in the utility's capital structure. The ROE is the cost rate applied to the equity capital in calculating the rate of return. Although the

costs of debt and preferred stock can be directly observed, the cost of equity is market-based and, therefore, must be estimated based on observable market data.

Q. How is the required ROE determined?

A. A range of the required cost of equity is estimated by using analytical techniques that rely on market-based data to quantify investor expectations regarding equity returns. Within that range, the ROE that is recommended is based on a review of the business, regulatory, and financial risks of the subject utility as compared with the proxy group, including the capital structure of the subject utility. A key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' views of the financial markets in general, as well as the subject company (in the context of the proxy group), in particular. It is also important that the ROE that is authorized takes into consideration the financial risk resulting from the authorized capital structure of the subject utility. An authorized capital structure that has a greater amount of leverage results in greater risk, because equity is the last claimant in the event of the dissolution of a company. Therefore, as the leverage in the capital structure increases, it is necessary for the ROE to increase to recognize the incremental risk to equity holders.

Q. What methods do you use to estimate the costs of equity for WPSC in this proceeding?

A. I consider the results of the constant growth DCF model, the CAPM, the ECAPM, and a BYRP analysis. A reasonable cost of equity estimate appropriately considers

alternative methodologies and the reasonableness of their individual and collective results.

Q. Why is it important to use more than one analytical approach to estimate the cost of equity?

A. Because the cost of equity is not directly observable, it must be estimated based on both quantitative and qualitative information. When faced with the task of estimating the cost of equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed. Several models have been developed to estimate the cost of equity, and I use multiple approaches to estimate the cost of equity. As a practical matter, however, all of the models available for estimating the cost of equity are subject to limiting assumptions or other methodological constraints. Consequently, many well-regarded finance texts recommend using multiple approaches when estimating the cost of equity. For example, Copeland, Koller, and Murrin[40] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[41] recommend the CAPM, DCF, and BYRP approaches.

Further, recent changes in market conditions highlight the benefit of using multiple models because each model relies on different assumptions, and these assumptions better reflect current and projected market conditions at different

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

[41] Eugene Brigham, Louis Gapenski, *Financial Management: Theory and Practice*, Orlando, Dryden Press, 1994, at 341. NRE.

times. For example, the CAPM, ECAPM, and BYRP analyses rely directly on interest rates as an assumption in the models and therefore may more directly reflect the market conditions expected when WPSC's rates are in effect. Accordingly, it is important to use multiple analytical approaches to ensure that the cost of equity results reflect market conditions that are expected during the period that WPSC's rates will be in effect.

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

A. Yes. For example, in the last full rate proceeding for WPSC, the Commission considered the range of results of each of the models presented by the witnesses, which included the DCF, CAPM, ECAPM and Risk Premium models and also considered trends for authorized ROEs in other states, ultimately authorizing a 9.80 percent ROE.[42]

A. <u>Constant Growth DCF Model</u>.

Q. Please describe the DCF model.

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

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

[42] Final Decision, Docket No. 6690-UR-127 (PSC REF#: 455196) (Dec. 22, 2022) at 45. NRE.

Where P_0 represents the current stock price, D1…D∞ 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:

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

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 (*i.e.*, "*g*").

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

A. The constant growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions are not objectively valid, considered judgment 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 current annualized dividend and average closing stock prices of the proxy group companies over the most recent 30, 90, and 180 trading days ended January 31, 2024.

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 term P_0 to ensure that the cost of equity 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.

Q. Do you make any adjustment to the dividend yield to account for periodic growth in dividends?

A. Yes. 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 ("EPS"), dividends per share and book value per share all grow

at the same constant rate. However, over the long run, dividend growth can only be sustained by earnings growth, meaning earnings are the fundamental driver of a company's ability to pay dividends. Therefore, projected EPS growth is the appropriate measure of a company's long-term growth. In contrast, changes in a company's dividend payments are based on management decisions related to cash management and other factors. For example, a company may decide to retain earnings rather than pay out a portion of those earnings to shareholders through dividends. Therefore, dividend growth rates are less likely than earnings growth rates to accurately reflect investor perceptions of a company's growth prospects. Accordingly, I have incorporated a number of sources of long-term EPS growth rates into the constant growth DCF model.

Q. Which sources of long-term earnings growth rates do you use in your DCF analysis?

A. I incorporate three sources of long-term EPS growth rates: (1) *Zacks Investment Research*; (2) Yahoo! Finance; and (3) *Value Line*.

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

A. I calculate the low-end result for the constant growth DCF model using the minimum growth rate of the three sources (*i.e.*, the lowest of the *Zacks*, Yahoo! Finance, and *Value Line* projected EPS growth rates) for each of the companies in the proxy group. I use a similar approach to calculate a high-end result, using the maximum growth rate of the three sources for each of the companies in the proxy

group. Lastly, I also calculate results using the average EPS growth rate from all three sources for each proxy group company.

Q. What are the results of your constant growth DCF analyses?

A. The results of my constant growth DCF analyses are presented in Ex.-WPSC-Bulkley-4 and summarized in Figure 8.

Figure 8: Summary of DCF Results[43]

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Mean Results:			
30-Day Avg. Stock Price	8.93%	10.14%	11.25%
90-Day Avg. Stock Price	9.01%	10.22%	11.33%
180-Day Avg. Stock Price	8.90%	10.11%	11.22%
Average	8.95%	10.16%	11.27%
Median Results:			
30-Day Avg. Stock Price	8.97%	9.98%	11.04%
90-Day Avg. Stock Price	9.02%	10.07%	11.17%
180-Day Avg. Stock Price	8.99%	10.06%	11.21%
Average	8.99%	10.03%	11.14%

Q. Have regulatory commissions acknowledged that the DCF model might understate the cost of equity given the current capital market conditions of high inflation and increased interest rates?

A. Yes. For example, in its May 2022 decision establishing the cost of equity for Aqua Pennsylvania, Inc., the Pennsylvania Public Utility Commission concluded that the current capital market conditions of high inflation and increased interest rates

[43] DCF results exclude the results for Black Hills Corporation because they do not provide a reasonable equity risk premium over the current yields on the Moody's A rated and Baa rated utility bond indices, which were 5.42 percent and 5.67 percent, respectively, based on a 30-day average ending January 31, 2024.

has resulted in the DCF model understating the utility cost of equity, and that weight should be placed on risk premium models, such as the CAPM, in the determination of the ROE:

> To help control rising inflation, the Federal Open Market Committee has signaled that it is ending its policies designed to maintain low interest rates. Aqua Exc. at 9. Because the DCF model does not directly account for interest rates, consequently, it is slow to respond to interest rate changes. However, I&E's CAPM model uses forecasted yields on ten-year Treasury bonds, and accordingly, its methodology captures forward looking changes in interest rates.
>
> Therefore, our methodology for determining Aqua's ROE shall utilize both I&E's DCF and CAPM methodologies. As noted above, the Commission recognizes the importance of informed judgment and information provided by other ROE models. In the 2012 PPL Order, the Commission considered PPL's CAPM and RP methods, tempered by informed judgment, instead of DCF-only results. We conclude that methodologies other than the DCF can be used as a check upon the reasonableness of the DCF derived ROE calculation. Historically, we have relied primarily upon the DCF methodology in arriving at ROE determinations and have utilized the results of the CAPM as a check upon the reasonableness of the DCF derived equity return. As such, where evidence based on other methods suggests that the DCF-only results may understate the utility's ROE, we will consider those other methods, to some degree, in determining the appropriate range of reasonableness for our equity return determination. In light of the above, we shall determine an appropriate ROE for Aqua using informed judgement based on I&E's DCF and CAPM methodologies.[44]
>
> …..
>
> We have previously determined, above, that we shall utilize I&E's DCF and CAPM methodologies. I&E's DCF and CAPM produce a range of reasonableness for the ROE in this proceeding from 8.90% [DCF] to 9.89% [CAPM]. Based upon our informed judgment, which includes consideration of a variety of factors, including increasing

[44] Pennsylvania Public Utility Commission, Docket Nos. R-2021-3027385 and R-2021-3027386, Opinion and Order, May 12, 2022, at 154-155. NRE.

inflation leading to increases in interest rates and capital costs since the rate filing, we determine that a base ROE of 9.75% is reasonable and appropriate for Aqua.[45]

Similarly, the Massachusetts Department of Public Utilities concluded in a recent rate case for NSTAR Electric Company that given the recent increase in interest rates there was "greater certainty" that the results of the DCF model were understating the cost of equity for the utility.[46]

B. <u>CAPM and ECAPM Analysis</u>.

Q. Please briefly describe the CAPM.

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable or "systematic" risk of that security.[47] 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:

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

[45] *Id.*, at 177-178.
[46] Massachusetts Department of Public Utilities, D.P.U. 22-22, November 30, 2022, at 385-386. NRE.
[47] Systematic risk is the risk inherent in the entire market or market segment, which cannot be diversified away using a portfolio of assets. Unsystematic risk is the risk of a specific company that can, theoretically, be mitigated through portfolio diversification.

Where:

K_e = the required market ROE;

β = beta coefficient of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market.

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

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

Variance (r_m) represents the variance of the market return, which is a measure of the uncertainty of the general market. *Covariance* (r_e, r_m) represents the covariance between the return on a specific security and the general market, which reflects the extent to which the return on that security will respond to a given change in the general market return. Thus, beta represents the risk of the security relative to the general market.

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

A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year Treasury bonds;[48] (2) the average projected 30-year Treasury bond yield for the second quarter of 2024 through the second quarter of

[48] Bloomberg Professional as of January 31, 2024. NRE.

2025;[49] and (3) the average projected 30-year Treasury bond yield for 2025 through 2029.[50]

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

A. As shown on Ex.-WPSC-Bulkley-5, I use the beta coefficients for the companies in the proxy group reported by *Bloomberg Professional* ("*Bloomberg"*) and *Value Line*. The beta coefficients reported by *Bloomberg* are calculated using ten years of weekly returns relative to the S&P 500 Index. The beta coefficients reported by *Value Line* are calculated based on five years of weekly returns relative to the New York Stock Exchange Composite Index. Additionally, as shown on Ex.-WPSC-Bulkley-5 and Ex.-WPSC-Bulkley-6, I also consider an additional CAPM analysis that relies on the long-term average beta coefficient reported by *Value Line* for the companies in my proxy group from 2013 through 2023.

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

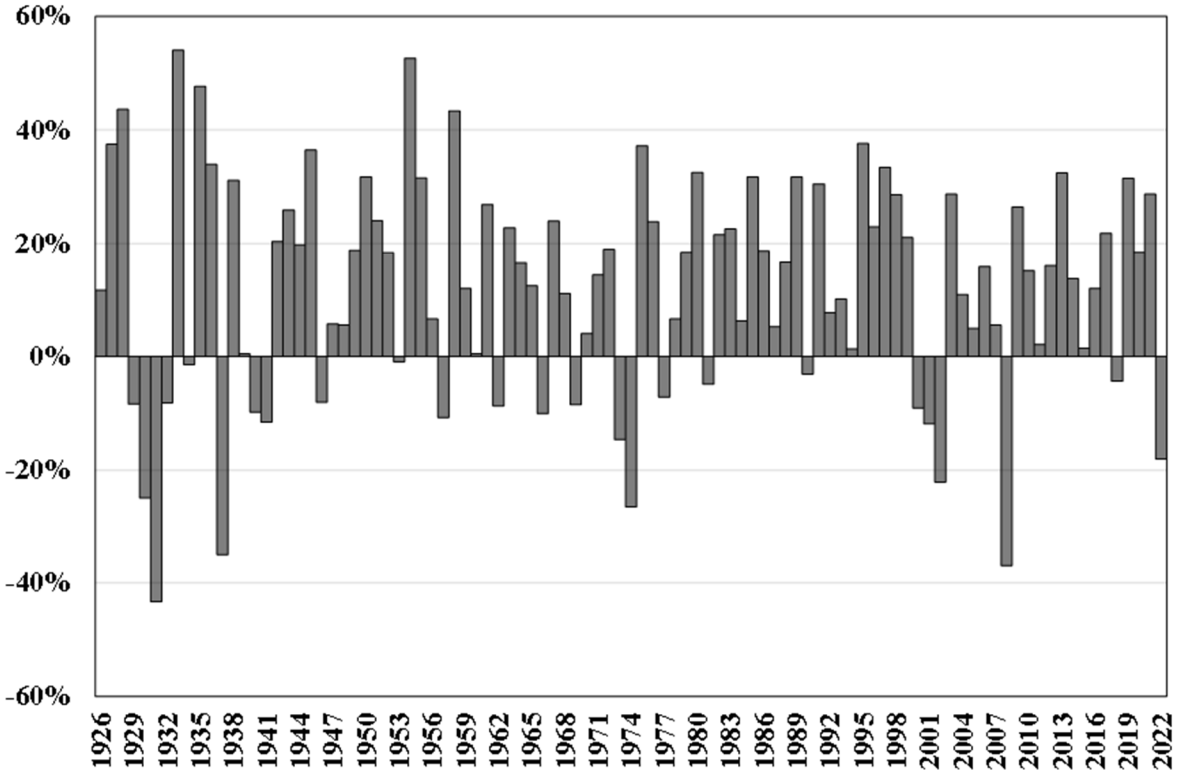
A. I estimate the market risk premium as the difference between the implied expected equity market return and the risk-free rate. As shown in Ex.-WPSC-Bulkley-7, the expected market return is calculated using the constant growth DCF model discussed earlier in my testimony for the companies in the S&P 500 Index. Based on an estimated market capitalization-weighted dividend yield of 1.63 percent and a weighted long-term growth rate of 10.51 percent, the estimated required market return for the S&P 500 Index as of January 31, 2024 is 12.22 percent.

[49] *Blue Chip Financial Forecasts*, Vol. 43, No. 2, February 1, 2024, at 2. NRE.
[50] *Blue Chip Financial Forecasts*, Vol. 42, No. 12, December 1, 2023, at 14. NRE.

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

A. Based on historical returns, a current expected market return of 12.22 percent is reasonable. As shown in Figure 12, in 51 out of the past 97 years (or roughly 53 percent of observations), the realized equity market return was 12.22 percent or greater.

Figure 9: Realized U.S. Equity Market Returns (1926-2022)[51]



[51] Depicts total annual returns on large company stocks, as reported in the 2022 *Kroll* SBBI Yearbook. NRE.

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

A. Yes. I have also considered the results of an ECAPM analysis in estimating the cost of equity for WPSC.[52] The ECAPM calculates the product of the adjusted beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium without any effect from the beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

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

Where:

k_e = the required market ROE;
β = adjusted beta coefficient of an individual security;
r_f = the risk-free rate of return; and
r_m = the required return on the market as a whole.

The ECAPM 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 in the traditional CAPM; 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.[53]

[52] *See, e.g.*, Roger A. Morin, *New Regulatory Finance*. Public Utilities Reports, Inc., 2006, at 189. NRE.
[53] *Id.*, at 191.

Consistent with my CAPM, my application of the ECAPM uses the same three yields on the 30-year Treasury bonds as the risk-free rate, forward-looking market risk premium estimate, and beta coefficients.

Q. What are the results of your CAPM and ECAPM analyses?

A. The results of my CAPM and ECAPM analyses are summarized in Figure 10, as well as presented in Ex.-WPSC-Bulkley-5.

Figure 10: Summary of CAPM and ECAPM Results

	30-Year Treasury Bond Yield		
	Current 30-Day Avg.	Near-Term Projected	Longer-Term Projected
CAPM:			
Current *Value Line* Beta	11.48%	11.47%	11.47%
Current Bloomberg Beta	10.53%	10.51%	10.51%
Long-term Avg. *Value Line* Beta	10.33%	10.31%	10.31%
ECAPM:			
Current *Value Line* Beta	11.66%	11.66%	11.66%
Current Bloomberg Beta	10.95%	10.94%	10.94%
Long-term Avg. *Value Line* Beta	10.80%	10.79%	10.79%

C. <u>BYRP Analysis</u>.

Q. Please describe the BYRP analysis.

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 bondholders. In other words, because returns to equity holders have greater risk than returns to bondholders, equity holders require a higher return to compensate for that

incremental risk. Thus, risk premium approaches, like the BYRP, 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 natural gas and electric utilities as the historical measure of the cost of equity to determine the risk premium.

Q. What is the fundamental relationship between the equity risk premium and interest rates?

A. 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 (*i.e.*, as interest rates increase, the equity risk premium decreases, and vice versa). Consequently, it is important to develop an analysis that: (1) reflects the inverse relationship between interest rates and the equity risk premium; and (2) relies on recent and expected market conditions. Such an analysis can be developed based on a regression of the risk premium as a function of U.S. Treasury bond yields. When the authorized ROEs for natural gas and electric utilities serve as the measure of required equity returns and the yield on the long-term U.S. Treasury bond is defined as the relevant measure of interest rates, the risk premium is the difference between those two points.[54]

[54] *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 (the author used a similar methodology, including using authorized 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 Shareholder Required Rates of Return," *Financial Management*, Spring 1986, at 66. NRE.

Q. Is the BYRP analysis relevant to investors?

A. Yes. Investors are aware of authorized ROEs in other jurisdictions and they consider those authorizations as a benchmark for a reasonable level of equity returns for utilities of comparable risk operating in other jurisdictions. As discussed previously, utilities have experienced credit rating downgrades and been subject to a negative market reaction related to the financial effects of a rate case decision that included a below average authorized ROE. Because my BYRP 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 in the current interest rate environment.

Q. What does your BYRP analysis reveal?

A. As shown in Figure 11, from 1980 through January 2024, 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:

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

Where:

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

a = intercept term;

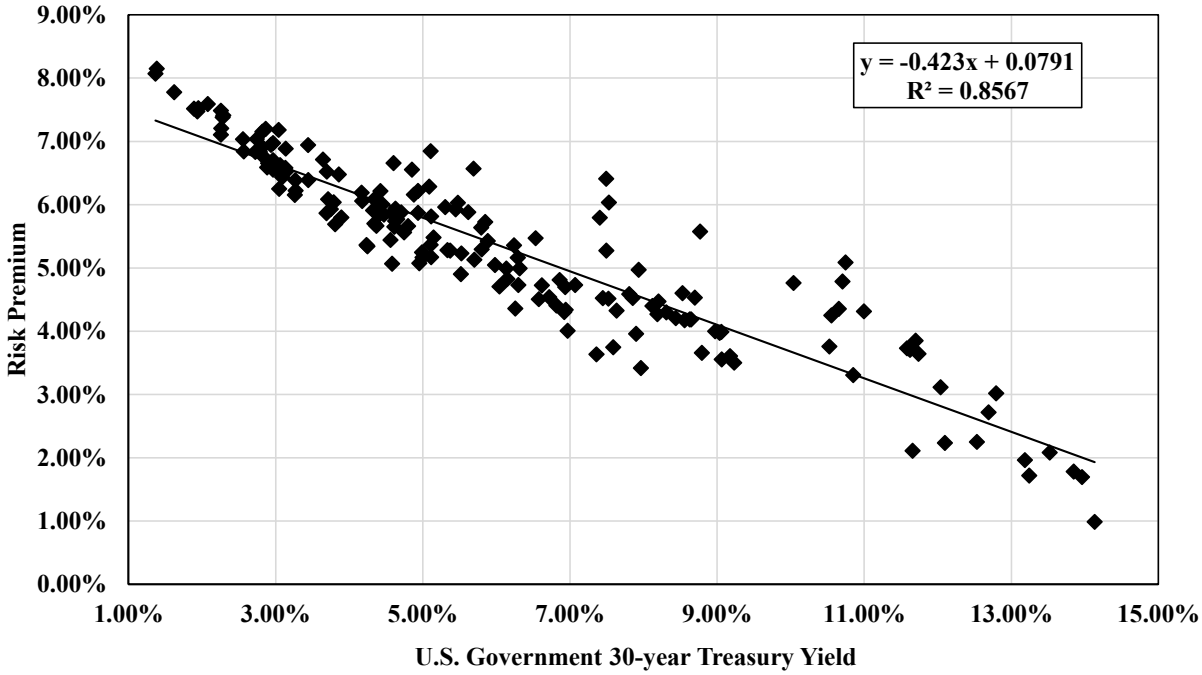
b = slope term; and

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

Data regarding authorized ROEs are derived from all electric and natural gas distribution rate cases over this period as reported by Regulatory Research

Associates ("RRA").[55] This equation's coefficients were statistically significant at the 99.00 percent level.[56]

Figure 11: Risk Premium Regression Analysis – U.S. Electric and Natural Gas Utilities



Q. What are the results of your BYRP analysis?

A. Figure 12 presents the results of my BYRP analysis, which are also presented in more detail in Ex.-WPSC-Bulkley-8.

Figure 12: BYRP Results

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
Bond Yield Risk Premium:			
US Elec & Gas Utilities	10.32%	10.27%	10.27%

[55] The data was screened to eliminate limited issue rider cases, transmission cases, and cases that were silent with respect to authorized ROE.

[56] *See* Ex.-WPSC-Bulkley-8.

VII. REGULATORY AND BUSINESS RISKS

Q. Do the results of the cost of equity analyses alone provide an appropriate estimate of the cost of equity for WPSC?

A. No. The model results provide only a range for the appropriate estimate of WPSC's cost of equity. Several additional factors must be considered when determining where WPSC's cost of equity falls within the range of analytical results. These risk factors, discussed below, should be considered with respect to their overall effect on WPSC's risk profile relative to the proxy group.

A. Capital Expenditures.

Q. Please summarize WPSC's capital expenditure requirements.

A. As of December 31, 2023, WPSC had net utility plant of approximately $**5.5** billion, and WPSC currently projects capital expenditures for 2024 through 2028 of approximately $**5.3** billion.[57] Therefore, WPSC's projected capital expenditures represent approximately 96.36percent of its net utility plant as of December 31, 2023.

Q. How do WPSC's capital expenditure requirements compare to those of the proxy group companies?

A. As shown on Ex.-WPSC-Bulkley-9, I have calculated the ratio of expected capital expenditures to net utility plant for WPSC and each of the companies in the proxy group by dividing each company's projected capital expenditures for the period from 2024 through 2028 by its total net utility plant as of December 31, 2023. As

[57] Data provided by WPSC.

shown, WPSC's ratio of capital expenditures as a percentage of net utility plant is significantly higher than the median for the proxy group companies.

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

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

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

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

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

favorable are those jurisdictions that present an opportunity for a higher return on capital projects as an incentive to investors.[58]

Recently, S&P evaluated capital expenditure trends in the utility sector, noting that the balance between operating with negative discretionary cash flow from operations offset by reliable access to capital markets for financing may be tested by ever-increasing capital expenditure requirements as a result of the transformation of the energy sector through the focus on low/no carbon generation, electrification, and the replacement of aging infrastructure:

> Some companies have been unable to support financial metrics consistent with former ratings as their discretionary cash flow deteriorated. This trend was a significant contributor to the sector seeing the median rating decline to 'BBB+' from 'A-' for the first time in 2022. What is less clear is whether or not management teams will take steps to forestall another step down in credit quality as high capital outlays persist. So far in 2023, we have not seen evidence that equity issuance is keeping pace with debt issuance to fill ever-deepening discretionary cash flow shortfalls, but time will tell.
>
> …..
>
> Despite the improvement in the economic outlook, we expect inflation, high interest rates, higher capital spending, and the strategic decision by many companies to operate with only minimal financial cushion from their downgrade thresholds to continue to pressure the industry's credit quality. We are cautious about the durability of the current stable ratings outlook given persistently high capital spending that now supports a trend of deterioration in discretionary cash flow. Without a commensurate focus on balance sheet preservation through equity support of discretionary cash flow deficits, limited financial cushions could give rise to another round of negative rating actions. The question then comes back to

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

> management priorities and financial policy decisions, or utilities may be faced with another step down in the median ratings.[59]

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

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

A. Currently, unless WPSC requests and is granted deferral accounting treatment, WPSC does not have a capital cost recovery mechanism to recover capital costs between rate cases. Therefore WPSC still depends on rate case filings to recover its capital expenditures, unlike the majority of companies in its proxy group that have implemented capital trackers. As shown in Ex.-WPSC-Bulkley-10, 71 percent of the companies in the proxy group have some form of capital cost recovery mechanism in place. Because WPSC does not currently have a capital tracking mechanism, its risk relative to the proxy group is increased.

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

A. WPSC's capital expenditure requirements as a percentage of net utility plant are significant relative to the proxy group and are expected to continue over the next few years. Furthermore, unlike a majority of the proxy group companies, WPSC does not have capital cost recovery mechanisms to allow for timely recovery of

[59] S&P Global Ratings, "Record CapEx Fuels Growth Along With Credit Risk For North American Investor-Owned Utilities," September 12, 2023, at 5, 7-8. NRE.

WPSC's capital expenditures between rate cases. Therefore, all else equal, WPSC's capital expenditure plan and limited ability to recover the capital investments as incurred results in a risk profile that is greater than that of the proxy group.

B. <u>Regulatory Risk</u>.

Q. How does the regulatory environment affect investors' risk assessments?

A. The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have the opportunity to recover the return of, and the market-required return on, invested capital. Regulatory commissions recognize that because utility operations are capital intensive, their decisions should enable the utility to attract capital at reasonable terms, and that doing so balances the long-term interests of investors and customers. Utilities must finance their operations and thus require the opportunity to earn a reasonable return on their invested capital to maintain their financial profiles. WPSC is no exception. Therefore, the regulatory environment is one of the most important factors considered in both debt and equity investors' risk assessments.

From the perspective of debt investors, the authorized return should enable the utility to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its systems, and maintain the necessary levels of liquidity to fund unexpected events. This financial liquidity must be derived not only from internally generated funds, but also by efficient access to capital markets. Moreover, because fixed income

investors have many investment alternatives, even within a given market sector, a utility's financial profile must be adequate relative to other investments to ensure the utility is able to attract capital under a variety of economic and financial market conditions.

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

Q. Do credit rating agencies consider regulatory risk in establishing a company's credit rating?

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

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

S&P also identifies the regulatory framework as an important factor in credit ratings for regulated utilities, stating: "One significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions in which a utility operates."[61] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[62]

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

A. The regulatory environment can significantly affect both the access to and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, for rate-regulated utilities, "the regulatory environment and how the utility adapts to that environment are the most important credit considerations."[63] Moody's highlights the importance of a stable and predictable regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as

61 S&P's Global Ratings. Ratings Direct. "Assessing U.S. Investor-Owned Utility Regulatory Environments." August 10, 2016, at 2. NRE.

62 *Id.*, at 1.

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

the predictability and consistency of decision-making provided by that foundation."[64]

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

A. Yes. I have evaluated the regulatory framework in Wisconsin considering three factors that are important in terms of providing a regulated utility a reasonable opportunity to earn its authorized ROE: (1) test year convention (*i.e.*, forecast vs. historical); (2) use of rate design or other mechanisms that mitigate volumetric risk and stabilize revenue; and (3) prevalence of capital cost recovery between rate cases. Each are described below and are summarized in Ex.-WPSC-Bulkley-10:

Test Year Convention: WPSC uses a fully-forecast test year, and similarly, approximately half of the utility operating subsidiaries of the companies in the proxy group also use forecast or partially forecast test years.

Volumetric Risk: WPSC does not have protection against volumetric risk through either a decoupling or other revenue stabilization mechanism; however, approximately 59 percent of the utility operating subsidiaries of the proxy group companies have some form of revenue stabilization through either decoupling, formula-based rates, or straight-fixed variable rate design that separate customer usage from revenues.

Capital Cost Recovery: As noted previously, unless deferral accounting treatment is sought and granted, WPSC does not have a capital tracking mechanism to recover capital investment costs between rate cases. However, approximately 71 percent of the utility operating subsidiaries of the proxy group companies have some form of capital cost recovery mechanism.

[64] *Id.*

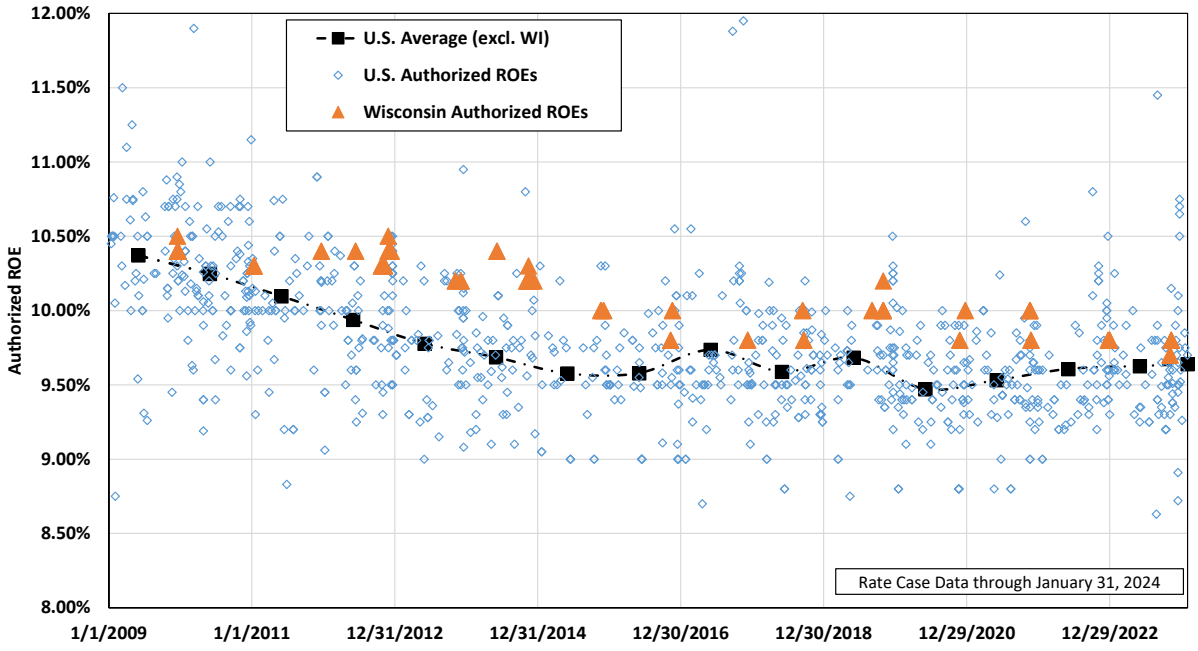
Q. How have ROE authorizations in Wisconsin, and in particular for WPSC, compared to authorized ROEs for electric and natural gas utilities in other jurisdictions?

A. The Commission has been generally supportive of the capital needs of regulated utilities. As shown in Figure 13, the Commission has historically authorized ROEs that are comparable to the national average for electric and natural gas utilities during the same period. This sends an important signal to investors that there is regulatory support for financial integrity, dividends, growth and fair compensation for business and financial risk. Both S&P and Moody's have identified a credit-supportive regulatory environment as a key strength of WPSC's credit profile, however Moody's notes that regulatory lag explains the deterioration in WPSC's cash flow to pre-working capital ratio to approximately 18 percent, which is below the Company's downgrade threshold.[65] Moody's also noted that the credit rating agency's opinion of the regulatory environment could change if the controversy surrounding WEC subsidiaries' 2022 general rate case leads to a permanent deterioration in the relationship with the Commission. Moody's noted this uncertainty tempers the credit quality of WPSC, particularly following recent Commission changes in March 2023.[66]

[65] S&P Global Ratings, Ratings Direct, Wisconsin Public Service Corp., May 5, 2023. Moody's Investor Service, Credit Opinion, Wisconsin Public Service Corporation, June 1, 2023. NRE.

[66] Moody's Investor Service, Credit Opinion, Wisconsin Public Service Corporation, June 1, 2023. NRE.

Figure 13: Authorized ROEs for Wisconsin Utilities v. U.S. Average[67]



Q. Have you developed any additional analyses to evaluate the regulatory environment in Wisconsin 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 Wisconsin to the jurisdictions in which the companies in my proxy group operate. Specifically, I considered two different rankings: (1) the RRA

[67] S&P Capital IQ Pro. Electric and natural gas rate case decisions from January 1, 2009 through January 31, 2024. NRE. The chart does not display either the 12.88% ROE that was authorized for Alaska Electric Light and Power on September 2, 2011 or the 12.55% ROE that was authorized for ENSTAR Natural Gas Co. on August 9, 2010. The chart also excludes: 1) the authorized returns for electric utilities 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; 2) the authorized returns awarded in Arizona because it is a state that relies on fair value rate base usually calculated based on a weighting of original cost rate case and rate base estimated using the replacement cost new less depreciation method; and 3) authorized returns that reflect a utility-specific penalty because an authorized ROE that includes a penalty is not indicative of a market-derived cost of equity.

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 companies in your proxy group with Wisconsin.

A. RRA develops their ranking based on their assessment of how investors perceive the regulatory risk associated with ownership of utility securities in that jurisdiction, specifically reflecting their 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"). RRA ranks Wisconsin as an Above Average/3, which is the third highest score of the nine tiers. As shown in Ex.-WPSC-Bulkey-11, the average ranking of my proxy group is between Average/2 and Average/1, meaning that Wisconsin is generally ranked higher than the average of my proxy group.

Q. How did you conduct your analysis of the proxy group using S&P's ratings?

A. For credit supportiveness, S&P classifies each regulatory jurisdiction into five categories that range from "Credit Supportive" to "Most Credit Supportive." My analysis using S&P's ranking of the regulatory jurisdictions of the companies in my proxy group is similar to my analysis using RRA regulatory rankings. I

assigned a numerical ranking to each category, from Most Credit Supportive ("1") to Credit Supportive ("5"). As shown in Ex.-WPSC-Bulkey-12, similar to the RRA regulatory rankings discussed above, the Wisconsin jurisdictional classification of "Most Credit Supportive" was above the average ranking for my proxy group, which averaged between "Highly Credit Supportive" and "Very Credit Supportive."

Q. What is your conclusion regarding the relative regulatory risk of WPSC as compared to your proxy group?

A. WPSC has greater volumetric risk and greater risk around cost recovery relative to the companies in my proxy group. All else equal, this would support an ROE toward the upper end of the range of ROE results. However, the Commission has maintained a more supportive regulatory environment for Wisconsin utilities, and Wisconsin utilities typically enjoy a slight equity return premium when compared to utilities nationally. So, although other utilities may have lesser risk around cost recovery, the Commission has historically provided Wisconsin utilities a buffer to weather such risks. This constructive regulatory environment has the added advantage of providing additional credit support for the utilities that will ultimately lower debt costs. In other words, the risks to earnings from less automatic recovery is generally mitigated by the premium Wisconsin utilities have historically earned on their equity.

VIII. CAPITAL STRUCTURE

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

A. Yes. The equity ratio is the primary indicator of financial risk for a regulated utility. All else 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, whose claim on the cash flow of WPSC is secondary to debt holders. Therefore, the greater the debt service requirement, the less cash flow is available for common equity holders.

Q. What is WPSC's proposed capital structures?

A. WPSC proposes to establish financial capital structure of 53.50 percent common equity. After imputing off balance sheet financial obligations consistent with guidance from ratings agencies, WPSC's requested financial capital structure results in a a ratemaking capital structure consisting of 54.38 percent common equity, 41.84 percent long-term debt and 3.78 percent short-term debt for Test Year 2025.

Q. Did you analyze whether WPSC's requested equity ratio is reasonable?

A. Yes. I compared WPSC's proposed capital structure relative to the actual capital structures of the utility operating subsidiaries of the companies in the proxy group.

The cost of equity is estimated based on the return that is derived from companies in the proxy group comparable in risk to WPSC; however, those companies must be publicly-traded in order to apply the cost of equity models. The operating utility subsidiaries of the proxy group companies are most risk-comparable to WPSC, and thus it is reasonable to look to the average capital structure of the operating utilities of the proxy group to benchmark the equity ratios for WPSC. Specifically, I have calculated the average proportion of common equity, long-term debt, preferred equity and short-term debt for the most recent three years for each of the utility operating subsidiaries of the proxy group companies. As shown in Ex.-WPSC-Bulkley-13, the common equity ratios for operating subsidiaries of the proxy group companies over the past three years ranged from 44.40 percent to 59.99 percent, with an average of 52.10 percent. Therefore, WPSC's proposed equity ratio is well within the range of equity ratios for the utility operating subsidiaries of the proxy group companies.

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

A. Yes, there are other factors that should be considered in setting WPSC's capital structure, namely the challenges that the credit rating agencies have highlighted as placing pressure on the credit metrics for utilities.

For example, although Moody's recently revised its credit outlook for the utility sector from "negative" to "stable", Moody's continues to note that high interest rates and increased capital spending will place pressure on credit metrics.

Thus, Moody's highlights constructive regulatory outcomes that promote timely cost recovery as a key factor in supporting utility credit quality.[68]

S&P also recently revised its outlook for the industry; however, S&P downgraded its outlook from stable to negative.[69] S&P noted that for the fifth consecutive year it expects downgrades will exceed upgrades with the industry facing significant risks over the near-term as a result of physical risks due to climate change, increased levels of capital spending and cash-flow deficits that are not being "funded in a sufficiently credit supportive manner".[70] In regard to the effect of increased capital spending, S&P noted:

> The industry's capital spending remains at record levels, supporting initiatives for safety, reliability, energy transition, and growth. We consider these trends long term and expect that capital spending will only continue to increase over this decade.
>
> Accordingly, cash flow deficits have increased, pressuring the industry's credit quality. For 2024, our base case assumes that the industry will fund its approximate $85 billion of cash flow deficits with about $40 billion in asset sales and equity issuance.
>
> For 2023, the industry's actual equity issuance was considerably below our expectations, resulting in a weakening of financial performance and credit quality. If this trend persists, credit quality will again likely experience pressure in 2024.[71]

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68 Moody's Investors Service, Outlook, "Outlook turns stable on low prices and credit-supportive regulation," September 7, 2023. NRE.

69 S&P Global Ratings, "Rising Risks: Outlook For North American Investor-Owned Regulated Utilities Weakens, February 14, 2024. NRE.

70 *Id*.

71 *Id.*, at 6-8.

Fitch Ratings ("Fitch") maintained a "deteriorating outlook" on the U.S. utility sector in 2024 based on elevated capital spending and continuing higher interest rates that place pressure on credit metrics.[72]

The continued concerns of credit ratings agencies about the negative effects of inflation, higher interest rates, and increased capital expenditures underscore the importance of maintaining adequate cash flow metrics for the industry as a whole, and WPSC in particular in the context of this proceeding.

Q. Will the capital structure and ROE authorized in this proceeding affect WPSC's access to capital at reasonable rates?

A. Yes. The level of earnings authorized by the Commission directly affects WPSC's ability to fund its operations with internally generated funds. Both bond investors and rating agencies expect a significant portion of ongoing capital investments to be financed with internally-generated funds. In addition, it is important to recognize that because a utility's investment horizon is very long, investors require the assurance of a sufficiently high return to satisfy the long-term financing requirements of the assets placed into service. Those assurances, which often are measured by the relationship between internally generated cash flows and debt (or interest expense), depend quite heavily on the capital structure. Therefore, both the ROE and capital structure are very important to debt and equity investors, particularly given current capital market conditions.

[72] Fitch Ratings, "North American Utilities, Power & Gas Outlook," S&P Market Intelligence, November 13, 2023. NRE.

IX. CONCLUSIONS AND RECOMMENDATION

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

A. WPSC's requested ROE of 10.00 percent is reasonable based on the quantitative and qualitative analyses presented in my direct testimony, and the business and financial risks of WPSC as compared to the proxy group. Figure 14 summarizes the results of my cost of equity analyses.

Figure 14: Summary of Analytical Results[73]

Constant Growth DCF			
	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Mean Results:			
30-Day Avg. Stock Price	8.93%	10.14%	11.25%
90-Day Avg. Stock Price	9.01%	10.22%	11.33%
180-Day Avg. Stock Price	8.90%	10.11%	11.22%
Average	8.95%	10.16%	11.27%
Median Results:			
30-Day Avg. Stock Price	8.97%	9.98%	11.04%
90-Day Avg. Stock Price	9.02%	10.07%	11.17%
180-Day Avg. Stock Price	8.99%	10.06%	11.21%
Average	8.99%	10.03%	11.14%

CAPM / ECAPM / Bond Yield Risk Premium			
	30-Year Treasury Bond Yield		
	Current 30-Day Avg.	Near-Term Projected	Longer-Term Projected
CAPM:			
Current *Value Line* Beta	11.48%	11.47%	11.47%
Current Bloomberg Beta	10.53%	10.51%	10.51%
Long-term Avg. *Value Line* Beta	10.33%	10.31%	10.31%
ECAPM:			
Current *Value Line* Beta	11.66%	11.66%	11.66%
Current Bloomberg Beta	10.95%	10.94%	10.94%
Long-term Avg. *Value Line* Beta	10.80%	10.79%	10.79%
Bond Yield Risk Premium:			
US Elec & Gas Utilities	10.32%	10.27%	10.27%

[73] DCF results exclude the results for Black Hills Corporation because they do not provide a reasonable equity risk premium over the current yields on the Moody's A rated and Baa rated utility bond indices, which were 5.42 percent and 5.67 percent, respectively, based on a 30-day average ending January 31, 2024.

Q. What is your conclusion with respect to WPSC's proposed capital structure?

A. WPSC's proposal to establish a financial capital structure based on 53.50 percent common equity is well within the range of actual capital structures of the proxy group companies. Further, taking into consideration the impact of current and projected market conditions on the cash flows of utilities as raised by the credit rating agencies, I conclude that WPSC's proposal is reasonable and should be adopted for ratemaking purposes.

Q. Does this conclude your direct testimony?

A. Yes.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for authority to increase its rates for the distribution of natural gas and for other relief.	U-21806

PROOF OF SERVICE

On the date below, an electronic copy of **Direct Testimony and Exhibits of Matthew Bandyk on behalf of Citizens Utility Board of Michigan (Exhibit CUB-13 through CUB-20)** was served on the following:

Name/Party	E-mail Address
ALJ James M. Varchetti	varchettij@michigan.gov
Consumer Energy Company Anne M. Uitvlugt Bret A. Totoraitis Evan B. Keimach Gary A. Gensch Jr. Spencer A. Sattler Kelly Hall	mpsc.filings@cmsenergy.com anne.uitvlugt@cmsenergy.com bret.totoraitis@cmsenergy.com evan.keimach@cmsenergy.com gary.genschjr@cmsenergy.com spencer.sattler@cmsenergy.com kelly.hall@cmsenergy.com
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The statements above are true to the best of my knowledge, information and belief.

Date: April 23, 2025

By: _____

Digitally signed by Natasha Fowles
Date: 2025.04.23 14:35:52 -04'00'

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