Exhibit No.: _____
Issue(s): Rate of Return (ROR)/Capital Structure
Witness/Type of Exhibit: Murray/Direct
Sponsoring Party: Public Counsel
Case No.: WR-2024-0104

DIRECT TESTIMONY

OF

DAVID MURRAY

Submitted on Behalf of the Office of the Public Counsel

LIBERTY UTILITIES (MISSOURI WATER) CORP.
D/B/A LIBERTY UTILITIES'

FILE NO. WR-2024-0104

** _____ **
Denotes Confidential Information that has been redacted.

August 20, 2024

PUBLIC

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OF

DAVID MURRAY

LIBERTY UTILITIES (Missouri Water) LLC
d/b/a Liberty

FILE NO. WR-2024-0104

Q. What is your name and what is your business address?

A. My name is David Murray, and my business address is P.O. Box 2230, Jefferson City, Missouri 65102.

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Office of the Public Counsel ("OPC") as a Utility Regulatory Manager.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of the OPC.

Q. What aspect of ratemaking do you address in your testimony?

A. My testimony will address the appropriate rate of return ("ROR") for purposes of setting Liberty Utilities (Missouri Water) LLC ("Liberty Water") revenue requirement for its regulated water and sewer utility operations.

Q. What experience, knowledge and education qualify you to sponsor ROR testimony in this case?

A. I have been sponsoring ROR testimony for the past twenty-five years, the first nineteen as a Staff witness. During my tenure with Staff, I also supervised employees who sponsored ROR testimony. In 2010, I was awarded the Chartered Financial Analyst ("CFA") designation after passing three rigorous examinations covering a variety of areas, including the cost of capital and valuation. For more details, please see the attached Schedule DM-D-1 for my qualifications as well as a summary of the cases in which I have sponsored testimony on ROR and other financial issues.

Q. What aspects of ROR will you address?

A. I will address a fair and reasonable allowed return on common equity ("ROE"), cost of debt and ratemaking capital structure.

Q. What is your main conclusion after analyzing Liberty Water's specific financial situation as well as the current state of capital markets?

A. Liberty Water's allowed ROE should be set at 9.25%, based on my recommended authorized ROE range of 9.00% to 9.50%. My recommended range reflects the following considerations:

- during 2024 the water utility industry's stock valuation levels (as measured by price-to-earnings ratios) traded at premiums of approximately 38% to electric utilities and 47% to local natural gas distribution ("LDC") utilities;
- my multi-stage DCF cost of common equity ("COE") estimates for the water utility industry imply the COE for water utilities may be up to 100 basis points lower than the COE for the electric and LDC industries;
- my COE estimates are lower than average authorized ROEs of around 9.65%;
- the fact that water utility stocks have generally been trading at higher P/E ratios than in 2015, when the Commission's determined that authorized ROEs of approximately 9.5% were fair and reasonable for Missouri's electric utilities; and
- under the Commission's typical zone of reasonableness ("ZOR") standard, a recommended ROE in the range of 8.65% to 10.65% is generally considered reasonable.

Q. Before you discuss the details supporting your analysis, can you summarize the rationale for your conclusions?

A. Yes. Although capital structure and the allowed ROE are interrelated as to the ultimate impact on Liberty Water's revenue requirement, I will first briefly explain my rationale for each component, separately.

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I recommend that the Commission set Liberty Water's allowed ROE for its Missouri water and sewer operations at 9.25% based on a range of 9.0% to 9.5%. During most of 2020 to 2022, utility stocks had not traded consistent with their typical negative correlation to changes in long-term bond yields. However, since the end of 2022, utility stock valuation levels resumed their typical negative correlation to interest rates. Further, utility stocks have been significantly underperforming the S&P 500 since the end of 2022. The S&P 500's P/E ratios during 2023 to 2024 have been higher than modern historical averages, which implies a lower market risk premium than in 2022. Based on my application of several cost of equity methods and corroborating information from investors, I estimate the COE for the water utility industry to be in the 7.5% to 8.5% range, which is lower than my COE estimate of approximately 8.5% for LDCs in the Liberty Midstates rate case, Case No. GR-2024-0106, and 8.5% for electric utilities in the Evergy Missouri West, Inc. ("EMW") EMW rate case, Case No. ER-2024-0189.

I recommend that the Commission set Liberty Water's ratemaking common equity ratio at 47.5% rather than Algonquin Power & Utilities Company's ("APUC") consistent request of approximately 52.5% to 53% for its Missouri utility companies. APUC manages its operating utility subsidiaries' capital structures through affiliate financing transactions. Liberty Water, as well as its Missouri sister subsidiaries, do not issue their own debt or equity to third parties. In past rate cases involving APUC's regulated Missouri utility subsidiaries, the Commission cited this fact when deciding to authorize a capital structure consistent with the ratios APUC targeted and maintained for Liberty Utilities Co. ("LUCo"), which directly and indirectly issues debt on behalf of its United States' regulated utilities.

While LUCo's average capital structures at the time of Liberty Water's, Liberty Midstates' and Empire's past rate cases were consistent with their low business risks, this dynamic is no longer true. APUC has not been financially stable since its third quarter earnings conference call on November 11, 2022, after which its stock price declined by approximately 40% through the end of 2022. As a result, activist investors prodded APUC to undergo a strategic review, which resulted in APUC announcing its plan to divest its

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non-regulated generation assets directly owned by its subsidiary, Algonquin Power Company ("APCo"). On August 9, 2024, APUC announced the sale of its non-regulated generation assets for $2.5 billion to LS Power. In conjunction with this announcement, APUC also cut its dividend by another 40%. APUC's stock price declined by another 12% after this announcement.

APUC's strategic intent to transition to an owner of only regulated utility companies should eventually stabilize its business and financial risk, as well as simplify its capital structure. Until that occurs, the Commission should set APUC's authorized ROR for its Missouri utilities based on APUC's own past communications to investors as to the proportion of debt that its low-risk regulated utility segment can support, which is in the range of 50% to 55% of its capital structure.

Q. What allowed ROE, long-term cost of debt, capital structure, and, ultimately, allowed ROR are you recommending that the Commission use to set Liberty Water's revenue requirement?

A. I recommend a ROE of 9.25%, which is within my recommended ROE range of 9.0% to 9.5%, a long-term debt cost of 4.29%, a capital structure consisting of 47.5% common equity, and 52.5% percent long-term debt, and a ROR of 6.65%.

Q. How is your testimony organized?

A First, I address a fair and reasonable ratemaking capital structure. Second, I explain the basis for my recommended cost of debt. Third, I discuss the context of current utility capital market conditions as it relates to the longer-term trend since 2015, when the Commission generally deemed a 9.5% allowed ROE fair and reasonable for Missouri's large electric utility companies. Fourth, I provide the details of the approaches and analysis I performed to estimate Liberty Water's COE. Finally, I summarize my overall ROR recommendation.

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CAPITAL STRUCTURE

Q. What is capital structure?

A. Capital structure represents how a company's assets are financed. A typical, simple capital structure consist of common equity, long-term debt, and short-term debt. Some utilities' capital structures may include a small portion of preferred stock. Although short-term debt is a typical component of a utility company's capital structure, if it is fully supporting construction work in progress ("CWIP"), then it is typically excluded from the rate making capital structure, and, instead, is reflected in the allowance for funds used during construction ("AFUDC") rate.

Q. What is a market-based capital structure?

A. A capital structure in which third-parties can directly purchase securities funding a company's assets.

Q. Does Liberty Water have a market-based capital structure?

A. No. As I will explain in more detail in my testimony, Liberty Water is financed completely by affiliate financing transactions. Therefore, it does not have an investable capital structure.

Q. Is Liberty Water owned by any companies that can be used as a proxy to estimate a fair and reasonable ratemaking capital structure for Liberty Water?

A. Yes. In Liberty Water's 2018 rate case, Case No. WR-2018-0170, I recommended the Commission use the capital structure of Liberty Water's intermediate holding company, LUCo, for purposes of setting Liberty Water's ROR. Although I still consider LUCo an appropriate proxy, as I will explain in further detail, the Commission should use LUCo's communicated targeted ratios rather than recent actuals.

APUC's capital structure can also be used as a proxy, but it is a very complex capital structure that is in a state of transition due to APUC's announced sale of its non-regulated operations. Part of APUC's rationale to transition to a holding company that only owns

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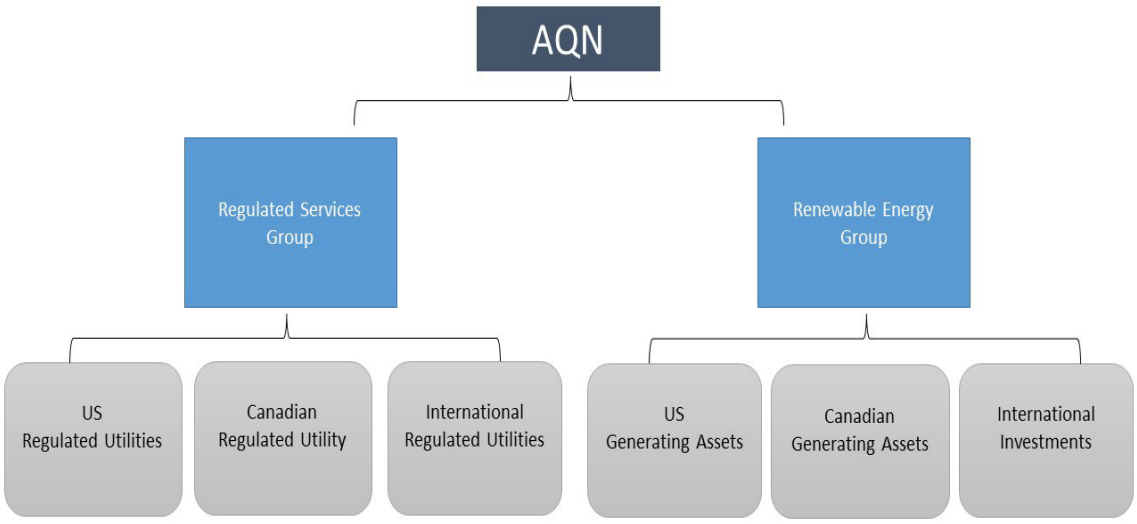
rate-regulated utility companies is to reduce its cost of capital.[1] In order to accomplish lowering its cost of capital, APUC had communicated plans to eventually utilize more leverage at the holding company. Because APUC is in a state of transition, with recapitalization accompanying this transition, I do not consider it to be an appropriate proxy for this case.

Q. What capital structure ratios do you recommend for purposes of setting Liberty Water's ROR?

A. I recommend the Commission use a capital structure consisting of 47.5% common equity and 52.5% long-term debt to set Liberty Water's authorized ROR. This capital structure is ** _____ _____ _____ _____ **

Q. Can you describe the corporate structure in which Liberty Water resides?

A. Yes, but it is not an easy task. APUC provided the following simplified version of its organizational structure in its 2023 Annual Report:



[1] Algonquin Power & Utilities Corp, Investor Presentation Q2 2023 Earnings Conference Call, August 10, 2023, p. 5.

APUC's Renewable Energy Group typically consists of approximately 25% to 30% of APUC's operations, depending on the metric used to measure the concentration. LUCo is the main holding company for APUC's indirect ownership of its United States regulated utilities. As shown in Schedule DM-D-2 there are four other holding companies between LUCo and APUC. In past rate cases involving Liberty Water and its Missouri affiliates, I discovered that APUC's financing subsidiary, Liberty Utilities Finance GP1 ("LUF"), made affiliate loans to some of these intermediate holding companies for purposes of making equity contributions to LUCo, despite the fact that LUCo guaranteed the third-party debt issued for purposes of these equity infusions.

As illustrated in Schedule DM-D-2, APUC is the ultimate parent company of Liberty Water, as well as that of its Missouri affiliates, The Empire District Electric Company ("Empire-Electric"), The Empire District Gas Company ("Empire-Gas"), and Liberty Utilities (Midstates Natural Gas) Corp. ("Liberty Midstates").

It is important to understand and consider APUC's corporate structure, business segments, and financing strategy for purposes of setting a fair and reasonable ROR for APUC's Missouri utilities. This context is especially necessary for the purposes of this and LUCo's other pending or upcoming Missouri rate cases. APUC's financial condition has been tenuous since it released and discussed its third quarter 2022 earnings with investors during its earnings call on November 11, 2022. These financial concerns prompted several activist investor groups[2] to pressure APUC to undergo a strategic review to explore the best path forward to improve APUC's stock value. Consequently, APUC formed a Strategic Review Committee in May 2023 to evaluate various options related to its business and financing strategies. Unfortunately, to date, Liberty Water and Liberty Midstates have resisted providing OPC access to the Strategic Review Committees' documents and analysis. Considering the fact that one of APUC's primary goals in establishing the Strategic Review Committee was to reduce APUC's cost of capital, APUC's assessment of how to do so would likely provide meaningful information to the Commission.

[2] Starboard Value, Corvex and Ancora.

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After APUC's management and board of directors' ("BOD") analyzed and evaluated APUC's current operations and need to limit accessing third-party capital markets, APUC announced it would pursue a sale of its non-regulated generation operations held at APCo. On August 9, 2024, APUC announced it executed a purchase and sale agreement with LS Power for APUC's non-regulated generation assets, except for its hydro generation facilities. APUC indicated it expects the transaction to close by the end of this year or into early 2025. While the eventual sale of these assets should include elimination of APCo debt, because APUC has issued a sizeable amount and proportion of holding company debt over the last several years, APUC's financial risk profile after the divestiture is uncertain. However, APUC communicated to investors that it is committed to maintaining 'BBB' credit ratings. A positive signal to creditors and debt investors is the fact that APUC cut its dividend by another 40% when it announced the agreement to sell it non-regulated assets to LS Power. APUC has also communicated to investors that it intends to minimize capex to maintenance levels at least through the next year. Because of the various moving parts impacting APUC and its credit ratings, the Commission needs to consider APUC's financial conflict of interest as it relates to the management of its various capital structures, including LUCo's capital structure.

APUC manages Liberty Water's capital structure, as well as that of its Missouri affiliates, through affiliate company financing transactions. As it relates to affiliate promissory notes issued by Liberty Water, APUC imputes a cost of long-term debt to Liberty Water based on third-party debt issued by LUCo and its financing affiliate LUF. Although rating agencies have not changed LUCo's and/or LUF's investment-grade credit rating ('BBB') since the decline in APUC's stock price, this fact alone is not dispositive as to whether LUCo's cost of debt or capital structure have been affected by APUC's financial difficulties.

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Q. Do investors and rating agencies expect that post APUC's divestiture of its non-regulated operations, APUC will have more financial risk (*i.e.* debt) in its capital structure?

A. Yes. APUC has issued a significant amount of holding company debt over the last several years. Fitch Ratings stated the following in a December 1, 2023 ratings report regarding APUC's holding company debt: "APUC's parent debt is also elevated at roughly 40% of total debt and is projected to remain elevated over the forecast period [2025-2026]."[3]

The forecast period includes Fitch's expectation of APUC's divestiture of its renewable business in 2024 and APUC's expected recapitalization of its capital structure with estimated proceeds from the divestiture. Consequently, rating agencies and debt investors are factoring in these expectations into their risk assessments.

S&P Global Ratings – RatingsDirect states the following about its expectations:

> Following APUC's divestiture of its nonutility, we expect business risk will decrease but be offset by weaker financial measures. Currently, our assessment of the company's business risk profile as strong reflects the combination of APUC's utility businesses (about 75% of EBITDA), offset by its weaker nonutility business (about 25% of EBITDA). Following the sale of its renewable business, we expect to revise our business risk profile assessment to excellent. We also expect that APUC's financial measures will weaken partially because we expect the company will use a portion of the asset sale proceeds to repurchase shares. Under our base case, following the divestment, we expect the company's funds from operations (FFO) to debt will be 11%-13% through 2026….[4]
>
> …**APUC's planned divestment is an important assumption for maintaining credit quality.** If the company does not successfully execute on the asset sale of its renewable asset portfolio and financial measures continue to weaken, credit quality would likely be pressured.

I still consider it appropriate to analyze LUCo's adjusted actual capital structures for purposes of determining a reasonable ratemaking capital structure. However, to the extent they are inconsistent with communicated targets before APUC's financial instability, it

[3] Ivana Ergovic and Zhihua Zhang, "Algonquin Power & Utilities Corp.," Fitch Ratings, December 1, 2023, p. 2
[4] Omar El Gamal, CFA, et. al., "Algonquin Power & Utilities Corp.," S&P Global Ratings – RatingsDirect, December 13, 2023, pp. 1-2.

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should be scrutinized. APUC has been much more active in issuing additional holding company financing, such as credit facilities, subordinated debt, and mandatory convertible debt, since past rate cases in which I recommended LUCo's adjusted actual capital structure be used to set the ROR for APUC's Missouri utilities. Additionally, APUC's exposure to variable rate debt throughout the consolidated company has contributed to its financial underperformance. Although LUCo does not guarantee APUC's holding company debt, this debt causes APUC's management to be conflicted in taking full advantage of LUCo's debt capacity.

Q. Can you explain APUC's and LUCo's debt and treasury functions in more detail?

A. Yes. Liberty Utilities Services Corp. manages Liberty Water's treasury needs along with those of APUC's other regulated utility companies, predominately at the LUCo level. LUCo has a $1 billion credit facility, which in part supports LUCo's $500 million commercial paper program. LUCo also executed a $1.11 billion delayed draw credit facility in December 2021, from which it drew $610.386 million on January 3, 2022, to partially fund its acquisition of New York American Water Company.

Historically, LUCo relied on LUF for its long-term debt financing needs. LUF issued debt directly to third parties to raise capital for indirect investment in LUCo through affiliate loan agreements and equity infusions from Liberty Utilities (America) HoldCo Inc. LUCo guarantees all LUF debt, including debt issued solely to purchase equity in LUCo.[5] However, beginning in January 2024, LUCo began issuing bonds directly to third-party debt investors.

On a stand-alone basis (*i.e.* not consolidated) APUC had the following debt and hybrid securities outstanding as of March 31, 2024:

(1) $1 billion credit facility of which it has drawn $641.841 million;
(2) $1.4 billion of 60-year subordinated debt outstanding that matures in 2079 and 2082;

[5] Liberty Midstates response to Staff DR No. 117.3 in Case No. GR-2018-0013.

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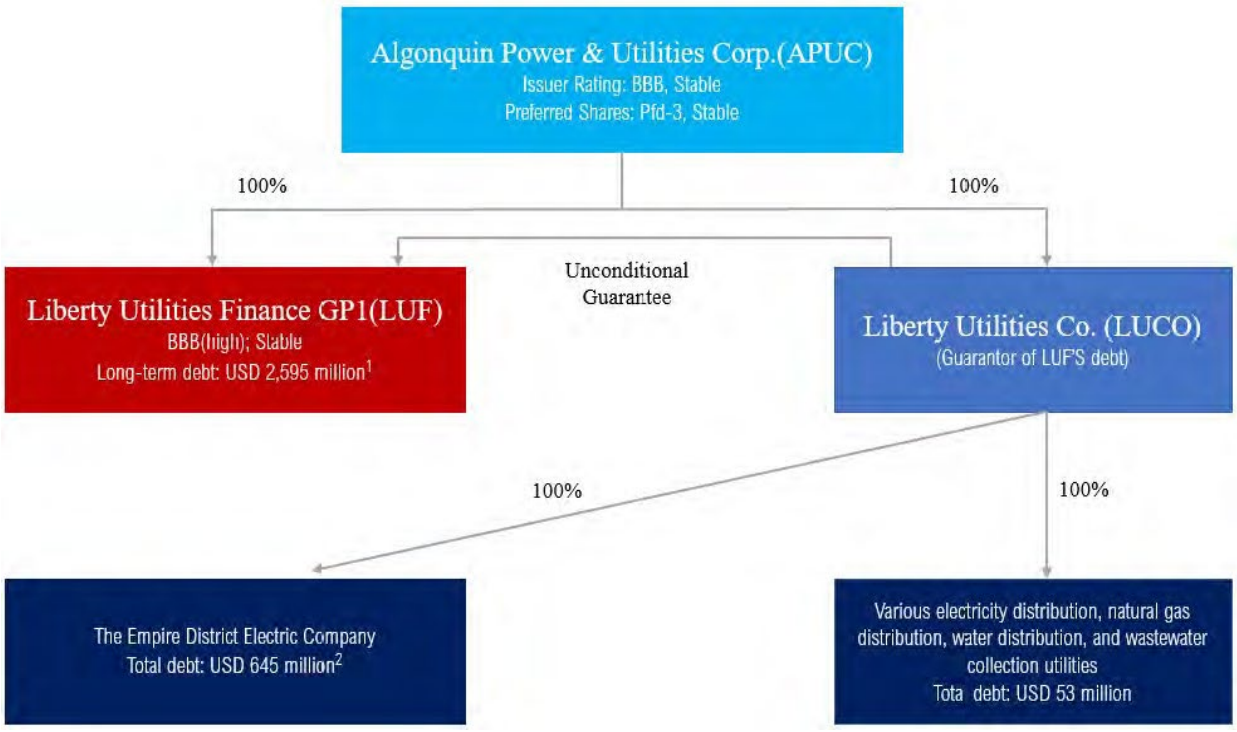
(3) $1.15 billion in mandatorily convertible equity units that mature on June 15, 2026; and

(4) $184.299 million of preferred stock.

In essence, APUC has debt supporting its utility investments at three different levels- APUC, LUCo (both direct-issued debt and debt issued through its financing affiliate, LUF) and legacy debt held at its operating utilities. APUC's increased use of holding company debt and hybrid financing activity makes it difficult to assess APUC's capitalization strategies for its various investments. Consequently, any deviation from past targeted capital structures requires careful scrutiny.

Q. Can you provide an illustration of LUCo's relationship with LUF, its past long-term debt financing vehicle?

A. Yes. In its February 24, 2024, LUF ratings report, DBRS provided the following chart illustrating LUF's relationship within APUC's corporate structure:



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Q. What was the Commission's past basis for authorized ratemaking capital structures for APUC's Missouri utilities?

A. The Commission set Liberty Water, Liberty Midstates, and Empire's authorized ROR based on LUCo's adjusted capital structure. The Commission's decisions were consistent with recommendations made by Staff and/or OPC in those cases, which was to rely on LUCo's adjusted capital structure because it was the only capital structure in which third-party debt investors could directly invest to gain direct exposure to LUCo's regulated utility subsidiaries.

Q. Is LUCo's capital structure consistent with its past capital structures in which it had targeted a 45% to 50% common equity ratio?

A. No. As shown in Schedule DM-D-3, LUCo's capital structure has recently consisted of as much as 60% common equity during 2022 and 2023. Despite having this high of a common equity ratio, LUCo is still rated 'BBB'.

Q. Has APUC recognized that its Regulated Utility Services Group has higher debt capacity than its Renewable Energy Group?

A. Yes. In presentations to fixed-income investors, APUC indicated that it targeted a long-term debt to total capital ratio in the range of ** _____ ** for its Regulated Utility Services Group and a long-term debt ratio of ** _____ _____ ** for its Renewable Energy Group. After consolidating the two segments of the company, APUC indicated it targeted a long-term debt ratio in the range of ** _____ ** These targeted capital structures are consistent with the fundamental principles of the interaction of business and financial risk.

The Regulated Services Group has the lowest business risk of all three entities—LUCo, APUC, and Algonquin Power Company—because it only owns price-regulated monopoly utilities, which includes the utilities it owns in the United States. Therefore, these assets typically supported more leverage than the rest of APUC's assets and still carried a stable

[6] Liberty Utilities Fixed Income Presentation, September 2017, p. 12 and Liberty Power Co. Fixed Income Update Presentation, September 2017, p. 12

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investment-grade credit rating. The Renewable Energy Group owns independent power projects, which are not protected by price-regulation. Therefore, the Renewable Energy Group's riskier assets (*i.e.* business risk) should be offset by less leverage (*i.e.* financial risk).

Q. Has APUC made any statements, internally or externally, about how it manages its regulated operating utility company (*e.g.* Liberty Water) capital structures?

A. ** _____
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_____ **

Q. Based on your analysis and consideration of all of the factors you discussed regarding APUC's, LUCo's and Liberty Water's capital structures, what capital structure do you recommend be used to set Liberty Water's ROR?

A. I recommend the Commission use a common equity ratio of 47.5% and a long-term debt ratio of 52.5%. My recommended common equity ratio is the mid-point of the common equity ratio that APUC had typically communicated to investors it targets for its Regulated Services Group. This common equity ratio captures the amount of debt capacity APUC recognized its regulated utility operations normally can support and still maintain a BBB credit rating.

COST OF DEBT

Q. What embedded cost of debt should be applied to your recommended capital structure?

A. I recommend an embedded cost of debt of 4.29% be applied to my recommended 52.5% debt ratio. LUCo's embedded cost of long-term debt is based on all third-party debt issued directly by LUCo, indirectly by LUF and legacy operating subsidiary debt. However, I adjusted the coupons on LUCo's January 12, 2024 debt issuances because based on the attached pricing information provided to APUC from its investment bankers (Schedule DM-D-4), ** _____ **

LUCo's 5.58%, 5-year senior unsecured notes were issued at a spread of 174 basis points over the 5-year UST yield of 3.84% on January 12, 2024. ** _____ **

LUCo's 5.87%, 10-year senior unsecured notes were issued at a spread of 191 basis points over the 10-year UST yield of 3.96% on January 12, 2024. ** _____ **

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Q. Why did you adjust LUCo's embedded cost of debt in this case, but not the Liberty Midstates' rate case?

A. Because the updated test year in the Liberty Midstates rate case is December 31, 2023. At December 31, 2023, LUCo had not issued any new long-term debt since 2020, which was before APUC's and LUCo's risk profile deteriorated at the end of 2022.

FAIR RETURN ON COMMON EQUITY

Q. How did you decide what approach to take for estimating a fair and reasonable allowed ROE for purposes of setting Liberty Water's rates in this case?

A. I reconciled the principles established in *Hope* and *Bluefield*[7] with modern financial models used to estimate the COE. While setting the allowed ROE based on the COE is at least theoretically sufficient to allow a company to attract capital in efficient markets, because average allowed ROEs have been set higher than the COE, this fact must be considered when determining a fair and reasonable allowed ROE. In fact, this Commission has set a "zone of reasonableness standard"[8] for purposes of setting an allowed ROE with the starting point for this zone of reasonableness being a recent industry average allowed ROE. Considering these principles, I first estimated Liberty Water's current COE based on my analysis of proxy companies, then I compared this estimated COE to the utility COE environment since late 2014 to early 2015 to determine if recent changes in utility capital markets imply a fundamental change in the cost of capital. My analysis also includes consideration of other recently authorized ROEs.

Q. What is your estimate of Liberty Water's current COE?

A. Based on my analysis, it is in the range of 7.5% to 8.5%.

[7] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 64 S.Ct. 281, 88 L.Ed. 333 (1943); *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679, *43 S.Ct. 675, 67 L.Ed. 1176* (1923).
[8] *State ex rel. Missouri Gas Energy v. Public Service Commission,* 186 S.W.3d 376, 383 (Mo App. W.D. 2005)

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Q. Based on your analysis, your awareness of capital market conditions, investor expectations and recent average allowed ROEs for water utility companies, what do you consider to be a fair and reasonable allowed ROE for Liberty Water's water and sewer operations in Missouri?

A. I consider 9.0% to 9.5% to be a reasonable range. My recommended allowed ROE is within the range of the Commission's typically defined ZOR range of 100 basis points above and below recent average authorized ROEs of approximately 9.65% for the water utility industry for the 2023 calendar year, and the first quarter of 2024 (*i.e.* 8.65% to 10.65%).[9] The average authorized ROE for water utilities is fairly similar to the average authorized ROEs for the electric and natural gas distribution industries. After considering my COE estimates, the Commission's authorized ROE of approximately 9.5% for Missouri's major electric utilities for rate cases decided in 2015, the Commission's 9.75% authorized ROE for Liberty Water in its 2018 rate case (WR-2018-0170), and the Commission's 9.37% authorized ROE for Spire Missouri in Case No. GR-2021-0108, I consider a 9.25% ROE to be fair and reasonable.

Q. How did you inform yourself for purposes of determining the best methods and approaches to use to estimate Liberty Water's COE?

A. I attempted to review APUC's and Liberty Water's board of directors' ("BOD") materials and minutes since January 1, 2021. However, at the time I prepared my testimony, Liberty Water had only provided OPC with limited access to APUC's BOD materials for this entire period. The OPC will continue to pursue broader access to APUC's BOD materials and its committees' (especially its Strategic Committee) materials as this case progresses. Liberty Water did provide access to LUCo's central division's quarterly directors/managers meeting materials.

I also reviewed investment-industry research covering APUC, APCo, and LUCo since the end of 2022. I mainly relied on reports Liberty Midstates provided in response to Staff Data Request No. 73 in Case No. GR-2024-0106. Although Liberty Midstates provided

[9] Heike Doerr, "Q1 water utility national equity returns remain steady with 2023," Regulatory Research Associates-Regulatory Focus, May 10, 2024.

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many reports published on APUC since the end of 2022, I discovered that several reports published after APUC's third quarter 2022 earnings conference were not included. I find this troubling considering the 30% decline of APUC's stock price within two days of the 2022 third quarter earnings conference call. Because APUC's business and financial risks may cause an increase to its subsidiaries' cost of capital, it is important to perform due diligence into investors' views/concerns about APUC's financial underperformance.

After performing my research on the information that was made available to me, I decided the best approach for estimating Liberty Water's COE is to perform a COE analysis on a proxy group of publicly-traded utility companies whose operations are comparable to Liberty Water's water and sewer utility operations.

Q. How did you determine a fair and reasonable allowed ROE to recommend for Liberty Water?

A. I compared the trends in various valuation ratios to proxy groups for the electric utility industry, the local natural gas distribution utility industry ("LDC") and the water utility industry. This information is helpful for purposes of comparing and contrasting the characteristics of water utility industry stocks to those of the electric and LDC industries. My analysis shows that water utility industry stocks in general have been valued much higher than the electric and LDC industries.

Q. What models did you use to estimate Liberty Water's COE?

A. I used a multi-stage discounted cash flow ("DCF") method, with a specific emphasis on consensus analysts' estimated dividends and the modeled growth of dividends. A DCF method that focuses on dividends as the proxy for cash flow is more precisely defined as the dividend discount model ("DDM"). I also applied the Capital Asset Pricing Model ("CAPM") to the proxy group. Finally, I performed simple and logical reasonableness checks of my COE estimates. These reasonableness checks recognize the basic characteristics of utility stocks, mainly that the investment community perceives them as yield/income investments. One such reasonableness check is a straightforward bond-yield-

plus-risk-premium method, a method that is included in the Chartered Financial Analyst ("CFA") Program curriculum.

Q. Did you perform a company-specific analysis of APUC's COE?

A. No.

Q. Why not?

A. APUC is currently a diversified, Canada-based company with domestic and international regulated and non-regulated utility investments. APUC's exposure to non-regulated generation operations through its APCo subsidiary always caused it to have a higher cost of capital than its regulated utility segment *(i.e.* business risk). Additionally, APUC's complex capital structure, which includes significant holding company debt, project debt, tax equity and significant variable interest rate debt (*i.e.* financial risk), caused additional uncertainty as to the potential impact of a decline in revenues on APUC's stock price. These risks materialized when APUC surprised investors with unexpected financial underperformance at the end of 2022. These events also caused APUC to lower its forward earnings guidance and hint that APUC may lower its dividend, which it did by 40% in 2023 (from $0.1808/quarter to $0.1085/quarter). As I testified earlier, on August 9, APUC announced it would lower its dividend by another 40% going forward (from $0.1085/quarter to $0.065/quarter). Combining the two dividend cuts, APUC has reduced its dividend by 64% since the first quarter of 2023. It is wholly inappropriate to directly or indirectly charge utility ratepayers any increased costs caused by APUC's financial weakness.

Q. Is APUC irrelevant to ensuring Liberty Water's authorized ROR is reasonable?

A. No. APUC's business and financing strategies impact Liberty Water's cost of capital. Liberty Water does not perform its own independent financing functions and does not directly access the capital markets. Therefore, for purposes of evaluating the proportion of debt Liberty Water's assets support, it is important to evaluate APUC's financing activities. Also, because APUC has more business risk than Liberty Water, analyzing and understanding APUC's capitalization and cost of capital tests the credibility of whether

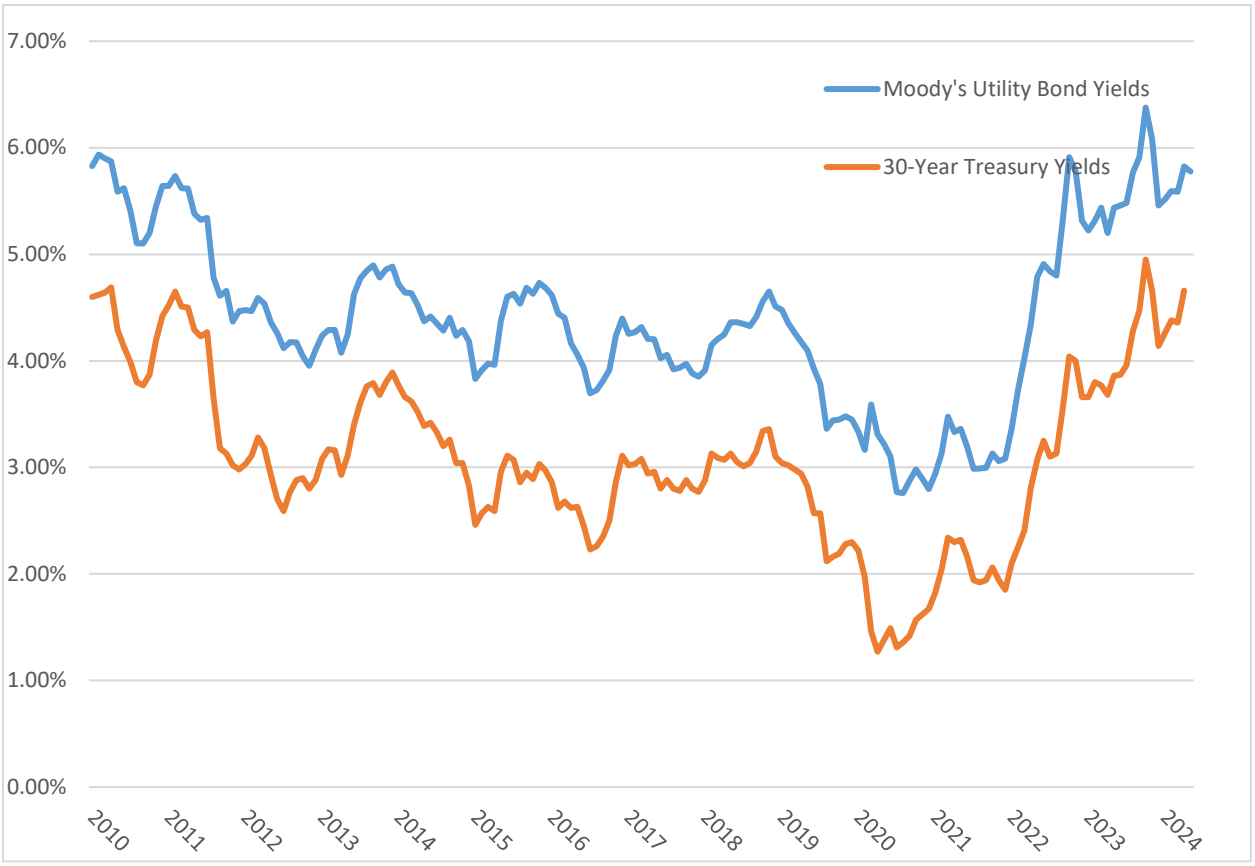
Liberty Water's requested ratemaking capital structure is consistent with APUC's current capital structure strategies or its anticipated capital structure after sale of its non-regulated generation operations.

Q. Can you describe and illustrate recent and long-term changes in long-term bond yields?

A. Yes, long-term bond yields have increased dramatically over the last couple of years after declining to historically low levels during the Covid-19 pandemic (2020 – 2021). In fact, during the Fall of 2023, investment grade utility bond yields and long-term United States Treasury ("UST") bond yields increased to their highest levels since 2010.

The below graph shows long-term bond yields since January 1, 2010. Some considered the early stages of lower long-term interest rates in the first half of this decade to be anomalous because of the Federal Reserve Bank's ("Fed") quantitative easing ("QE") programs[10] through October 2014. However, for the last half of the past decade, long-term interest rates continued an overall declining trend, until they reached all-time lows in 2020 and 2021. However, as I previously described, long-term rates have since increased dramatically, peaking in October 2023.

[10] QE involved three rounds of the Fed's direct intervention in bond markets beyond just lowering the Fed Funds rate. The Fed's QE programs had the express intent of reducing long-term interest rates.



Average utility long-term bond yields had declined to modern all-time lows in the latter half of 2020, to levels not experienced since the late 1940s and early 1950s. But, in less than three years, utility long-term bond yields have more than doubled.

Although more simplistic COE methods may imply that the COE for utilities whipsawed along with bond yields, utility valuation levels over this period do not support this notion. As I will explain in more detail later in my testimony, the post Covid-19 economic and capital market conditions have been atypical. This is likely a consequence of both the Fed's and U.S. Congress's massive interventions through monetary and fiscal policies during the Covid-19 pandemic.

Q. Why is it typically important to evaluate trends in long-term interest rates when evaluating the utility industry's COE?

A. The investment community typically regards utility stocks as bond proxies/pseudo bonds, meaning that if long-term bond yields decline, that decline typically causes regulated utility

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stock prices to increase. Although investors' total returns in utility stock investments do include some capital gains, because of the slow, steady growth in earnings, utility companies have typically distributed approximately 2/3 of their earnings as dividends to shareholders, causing utility stocks to be characterized as yield investments. Therefore, changes in utility stock valuation levels have historically had a strong inverse correlation to changes in bond yields, *i.e.* as bond yields decline, utility stock prices increase.

Q. From April 2020 through August 2022, did utility stock valuations and bond yields provide traditional and consistent signals about utilities' cost of capital?

A. No. Following drastic and significant intervention by the Fed in monetary policy and the UST in fiscal policy, in reaction to Covid-19 and its associated mitigation measures, the yield-to-maturity ("YTM") on utility and corporate bonds traded at 70-to-80 year lows. However, at the same time, broader utility stocks (mainly local natural gas distribution companies ("LDC") and electric utility stocks) underperformed the S&P 500. The same atypical trading pattern occurred as long-term bond yields began a dramatic increase in 2022. Utility stocks significantly outperformed the S&P 500 on a relative basis, despite long-term yields increasing through much of 2022. The increase in yields caused the S&P 500 to contract significantly, while causing only a slight decline in utility stock prices, allowing them to maintain similar P/E ratios as before the rapid increase in long-term interest rates.

Consequently, while the utility industry's debt costs fluctuated along with the macro changes in interest rates, the same was not true for the utility industry's cost of equity. For example, as I will discuss later in my testimony, use of the CAPM with standard assumptions, implied that the utility industry's COE fluctuated along with long-term bond yields since 2020, but such indications were not corroborated by utility equity market valuations. However, recent contractions in utility P/E ratios indicate investors may now be expecting long-term bond yields to remain higher for longer.

Q. What about since August 2022?

A. Starting around mid-September 2022, water utility P/E ratios resumed their more typical inverse correlation with long-term yields, as illustrated in the following chart:

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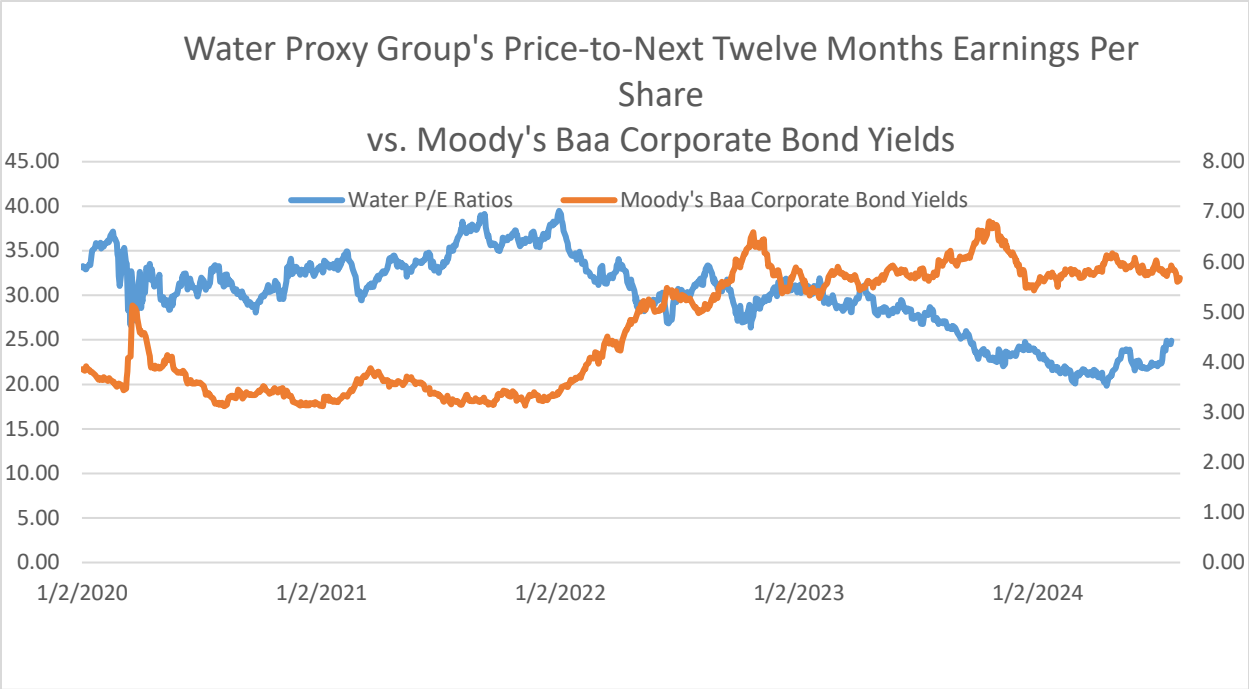

During the all-time low bond yield environment, the utility industry was able to take advantage of these extremely low debt capital costs. For example, on September 23, 2020, LUCo, through its financing entity LUF, issued 10-year, $600 million bonds at an annual coupon rate of only 2.05%. However, during this period, utility equity valuation levels did not increase in response to the decline in bond yields, which implied investors did not expect extremely low interest rates to be sustained. Similarly, as bond yields increased significantly in 2022, utility equity valuation levels did not contract as typically expected – perhaps because investors understood that the extremely low cost of debt during 2020 to 2021 was not sustainable.

To illustrate the significant increase in utility bond yields, on January 12, 2024, LUCo issued 10-year, $350 million bonds at an annual coupon rate of 5.87%, which is higher than the coupons on other 10-year bonds issued in 2024 by Missouri's major utilities.

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Q. Considering the Commission has rate cases pending before it involving all three subsectors (electric, natural gas and water) of the utility industry, would it be helpful to compare and contrast the valuation differences among all three subsectors?

A. Yes. Investors in the utility industry typically compare and contrast the valuation differences between the three subsectors of the utility industry. In fact, Starboard Value LP, the activist investor influencing APUC's strategic decisions, recommended APUC separate its water utility assets because of their premium valuation relative to the electric and gas subsectors.[11] There are many reasons for such valuation differences, with the most relevant for setting a fair and reasonable ROR being the perceived lower business risk associated with water utility operations. Because I am recommending the same capital structure for Liberty Water as for Liberty Midstates, I am recommending Liberty Water be authorized a lower ROE. As I testified in the Liberty Midstates rate case, because the COE for the electric and natural gas subsectors are at parity, I recommended a 9.5% ROE for Liberty Midstates and EMW (Case No. ER-2024-0189).

Q. Can you provide a graphic illustration showing water utility, electric utility and LDC industries' price-to-next-twelve-months-earnings (P/E) ratios since January 1, 2012?

A. Yes. First, I should note that P/E ratios are often used to evaluate the relative cost to the investor to buy a share of earnings and the potential growth of those earnings. Also, for context regarding the favorableness of utility P/E ratios over the past several years, utility P/E ratios averaged 14.4x since 1995.[12] A graph of the P/E ratios for the water utility, LDC and electric utility industries follows:

[11] Ben Pham, et. al., "Activist Starboard Encourages AQN to Sell Renewables and Water Utilities," BMO Capital Markets, July 10, 2023.
[12] Durgesh Chopra, et. al., "Utes Close To Fair Value In Our Bond Model," Evercore ISI, April 18, 2021, p. 8.

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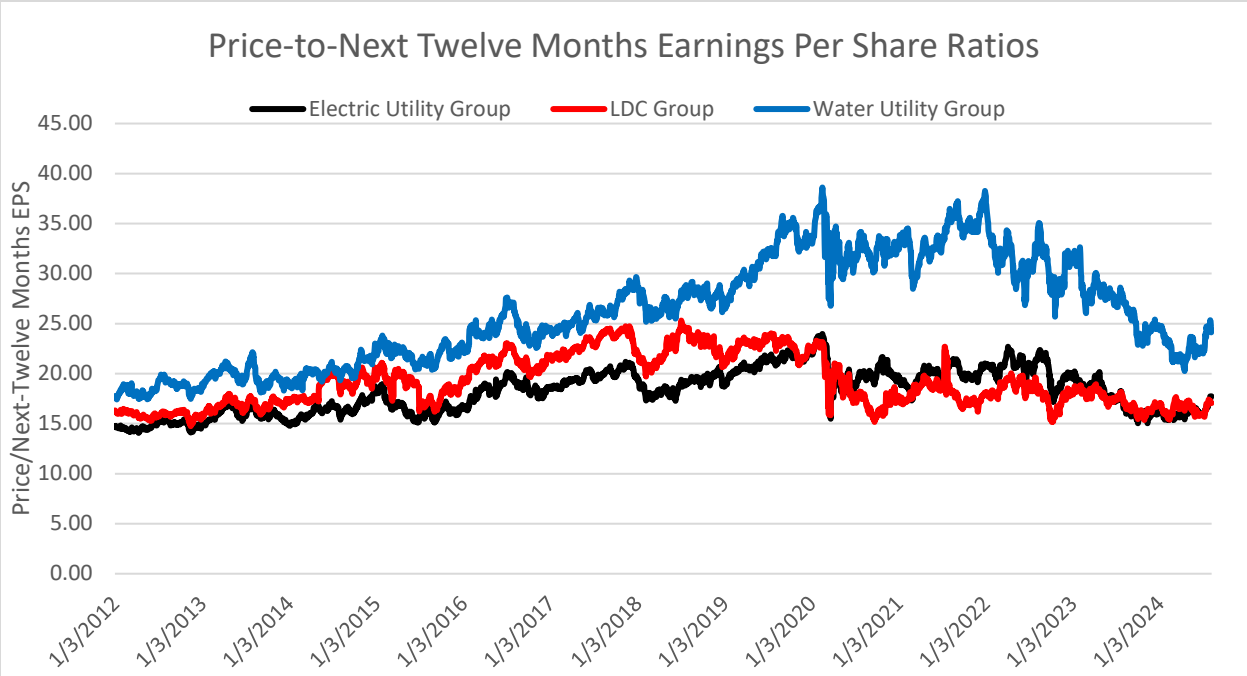

As can be seen in the above graph, between 2012 to mid-2017, the water utility group's P/E ratio traded at a premium to the electrics utility group[13] (generally in the 20% to 40% range) and at a premium to LDC group[14] (generally in the 10% to 25% range) for the same period (there are some anomalies in the LDC P/E ratios from mid-2014 to mid-2015). In late 2018/early 2019 water utility P/E ratios expanded rapidly through the start of the pandemic, with electric utility P/E ratios increasing at a more modest pace and LDC's P/E ratios remaining fairly flat. This resulted in water utilities P/E ratios increasing to around a 60% premium to electric utilities and LDC's. Post the onset of the pandemic, in the fall of 2021, water utility stocks peaked at an 85% to 90% premium to electric utilities and a 110% to 115% premium to LDCs. In 2023, average water utility P/E premiums have moderated to around 55% to 60% as compared to electric utility and LDC companies, respectively. In 2024, water utility premiums compressed to 38% to 47% as compared to electric and LDC companies, respectively.

[13] Includes the following companies: Alliant Energy, Ameren Corp, American Electric Power, CMS Energy, DTE Energy, Idacorp, OGE Energy, Pinnacle West Capital Corporation, Portland General Electric, Southern Company, WEC Energy and Excel Energy.

[14] LDC group consists of the following companies: Atmos Energy Corporation, NiSource Inc., New Jersey Resources, Northwest Natural Gas, Southwest Gas Holdings and Spire Inc. (excluded One Gas because no P/E data available before 2015).

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Q. Why is it important to be aware of the historical context of the utility industry's P/E ratios?

A. The Commission deemed an approximate 9.5% authorized ROE as fair and reasonable for Missouri's large electric utilities around 2015. Considering that both the electric and gas distribution utility industries are trading in line with the electric utility valuation levels around 2015, this supports the reasonableness of a 9.5% authorized ROE for electric and gas distribution companies in the current capital market environment.

Q. What was Liberty Water's last authorized ROE?

A. 9.75% in Case No. WR-2018-0170 applied to a 42.83% common equity ratio.

Q. Considering the Commission authorized Liberty Water a 9.75% ROE in its 2018 rate case, why should the Commission give more weight to the 9.5% ROEs it awarded electric utilities in 2015 in determining a fair and reasonable ROE in this case?

A. The Commission's authorized ROEs of approximately 9.5% were awarded to Ameren Missouri and Evergy Metro in 2015. The cost of capital was higher in 2015 as compared to 2018, when the Commission awarded Liberty Water a 9.75% ROE in the 2018 rate case. Considering that Ameren Missouri and Evergy Metro continued to access third-party debt markets at reasonable prices after being awarded 9.5% ROEs, this demonstrates their reasonableness.

Q. Did you sponsor ROR testimony in Liberty Water's 2018 rate case?

A. Yes. I sponsored ROR testimony on behalf of Staff in the 2018 rate case.

Q. What was your recommended ROE?

A. 10%.

Q. How did you determine your recommended ROE in that case?

A I added 20 basis points to the Commission's 9.8% awarded ROE for Spire Missouri in Case No. GR-2017-0215. I made a 20-basis point adjustment due to the fact that my recommended ratemaking capital structure for Liberty Water was based on LUCo's more

leveraged capital structure, which was consistent with a 'BBB+' credit rating. Spire Missouri's capital structure was consistent with an 'A' rating. At the time, spreads between BBB and A-rated bonds were around 30 basis points. Because LUCo and Spire Missouri had a two-notch differential in their credit ratings (if LUCo had a 'BBB' rating rather than a 'BBB+', then I would have applied the full 30-basis point difference at the time), I added 2/3 of this spread to account for their credit rating difference.

Q. Why are you now recommending a lower ROE in light of the above?

A. Because my comparative cost of capital analysis in this case establishes that the water utility industry has a lower relative cost of capital than the electric and LDC industries.

Q. What reasons do Wall Street analysts often ascribe for water utility stocks trading at significant premiums to electric and gas utility companies?

A. Similar to other Wall Street analysts, Guggenheim offers the following explanation for the higher premiums it assigns to the water utility industry in general as compared to the electric and gas utility industries:

> Water utilities continue to be ascribed higher multiples versus electric/gas utility counterparts given higher growth prospects and less risk around CapEx, which haven't slowed and are not expected to anytime soon, and lower perceived risk vs. electric/gas peers.[15]

Q. Are you aware of other investment analysts that ascribe lower costs of equity to the water utility industry as compared to the electric utility industry?

A. Yes. Evercore ISI indicated the following when it initiated coverage of the water utility industry:

> Unlike electrics and more similar to local distribution gas utilities water utility capex projects are numerous and much smaller so the project risk faced by electrics isn't there especially compared to large generation and transmission projects. Services provided by water utility are ingested and still on relative basis water bills represents a much smaller portion of average household's utility bills. Furthermore the infrastructure is in worse condition than electric and gas (Water is rated D while electric and gas is

[15] Shahriar Pourreza, et. al., "AWK: Straightforward Roll-Forward Comes with More Equity," Guggenheim Securities LLC, November 1, 2022.

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> rated D+ by ASCE so capital expenditure budgets get less scrutiny from regulators). The lower perceived risk also corresponds, however, to lower allowed ROEs, in Exhibit 5 [in the original document] below we show a comparison of water vs electric ROEs for states which have highest percentage of investor owned water systems. On average authorized water ROEs tend to be 40 bps [basis points] lower vs electric.[16]

Evercore ISI went on to further state the following about expected allowed ROEs for the water utility industry:

> In valuing water utilities we assume the authorized ROEs falling to 8.75% from 9.25% which is 50 bps lower than their electric peers but we use the same ultimate 2.25% spread between ROE and cost of equity to account for the water industry's lower risk profile as we articulated above.[17]

Q. Has the cost of capital increased since the above-cited reports were published?

A. Yes.

Q. Despite the absolute increase in the utility industry's cost of capital, do equity analysts still ascribe a relatively lower cost of equity to water utility stocks as compared to the electric and LDC industries?

A. Yes. Wells Fargo used a COE of 7.5% to estimate a fair price to pay for American Water Works Company, Inc.'s ("American Water") stock.[18] Wells Fargo's COE for American Water is 25 to 50 basis points lower than the COE it used for purposes of valuing Evergy's stock[19] and 75 basis points lower than the COE it used to estimate the value of Spire Inc.'s ("Spire") stock. [20]

Q. What are utility equity investors' reactions to the current interest rate environment?

A. Based solely on interpreting/evaluating utility stock price changes, as compared to that of the broader market, stronger economic conditions and optimism about potential

[16] Durgesh Chopra, et. al, "Initiating Coverage On Water Utilities: Top pick AWK (OP); AWR (UP); WTR/CWT/SJW/CTWS (IL)," Evercore ISI, September 17, 2018, p. 10.
[17] *Id.,* p. 13.
[18] Jonathan Reeder, et. al., "American Water Works Company, Inc. (AWK): No Change to Our 26-28 EPS Following Q2 Update – Reiterate UW as Waters Aren't Cheap," Wells Fargo, August 1, 2024, p. 5.
[19] Sarah Akers, et. al., "Evergy Inc.: Q2 Update Keeps 2024 on Track with CapEx Refresh on Deck – Reiterate Overweight," Wells Fargo, August 9, 2024, p. 4.
[20] Sarah Akers, et. al., "Spire (SR): Guidance Reduction Undermined Re-Rating Story – Reiterate Equal Weight," Wells Fargo, July 31, 2024, p. 5.

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productivity benefits from artificial intelligence have been causing the S&P 500, especially the constituents in the information technology sector, to significantly outperform the utilities sector. Until 2022, most utility equity analysts had projected that low interest rates justified a continued reduction of authorized ROEs. However, given the fact that long-term bond yields have remained higher since late 2022, now investors expect regulators to at least hold the line on awarded ROEs.

Q. Why would investors expect utility commissions to hold the line on authorized ROEs if the cost of capital has increased?

A. Due to the fact that utility commissions did not reduce authorized ROEs much when the cost of capital was declining. Barclays recently indicated the following about authorized returns while the cost of capital was declining from 2010 to the early 2020s:

> **High Returns Unlikely as ROEs Sticky While Rates Were at Decade Lows**
>
> Simplistically, from 2010 to early 2020s long term risk free yields have only declined, while utility ROEs remained steady at an average 9.8% authorized rate on the electric side. Utilities were arguably over-earning during this timeframe in our view. We believe over a long term (10yr+) time horizon there should be a case for higher ROEs if risk free yields remain elevated or move higher, but we see it unlikely that regulated ROEs return to 12%+ levels anytime soon. This likely leads to an extended CoC [cost of capital] crunch for the utility industry, which will pressure management teams' abilities to raise capex budgets materially in the five-year window. Please see our additional work below highlighting the CoC crunch.[21]

Q. Can utilities still create value for their shareholders at a narrower spread between the COE and allowed ROEs?

A. Yes. Even at a narrower spread, as long as a company has the opportunity to earn more than its cost of capital, it will create value above the initial book value investment (*i.e.* investment in rate base for utility companies). The ratemaking principle of setting an authorized ROE at or near parity with the COE is that utility companies will only invest in projects that are expected to be economically efficient based on the merits of the projects rather than simply being authorized a return higher than the cost of capital (or a jurisdiction

[21] Nicholas Campanella, et. al., "U.S. Power & Utilities: Initiating Coverage: Down but Not Out," Barclays, August 22, 2023, p. 23.

that authorizes a higher return than another jurisdiction). Morningstar's discounted cash flow analysis recognizes this principle should at least hold over the long-term. Specifically, as it relates to estimating growth in cash flows in the perpetuity stage, Morningstar states the following:

> Once a company's marginal ROIC [Return on Invested Capital] hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline in revenue is an NPV [Net Present Value] = 0 proposition. Stated differently, in the perpetuity period, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with estimated WACC.[22]

Q. Can you provide information on how the water utility industry's shareholder returns have compared to the S&P 500, a broad utility index, the LDC industry, and the electric utility industry over the last ten years?

A. See the below chart for a graphic illustration of water utility industry's total return as compared to the S&P 500 (SPX), a broad utility index (XLU), a representative LDC utility group, and a representative electric utility group.

[22] "Morningstar Equity Research Methodology," Morningstar Equity Research, September 2022, p. 4.

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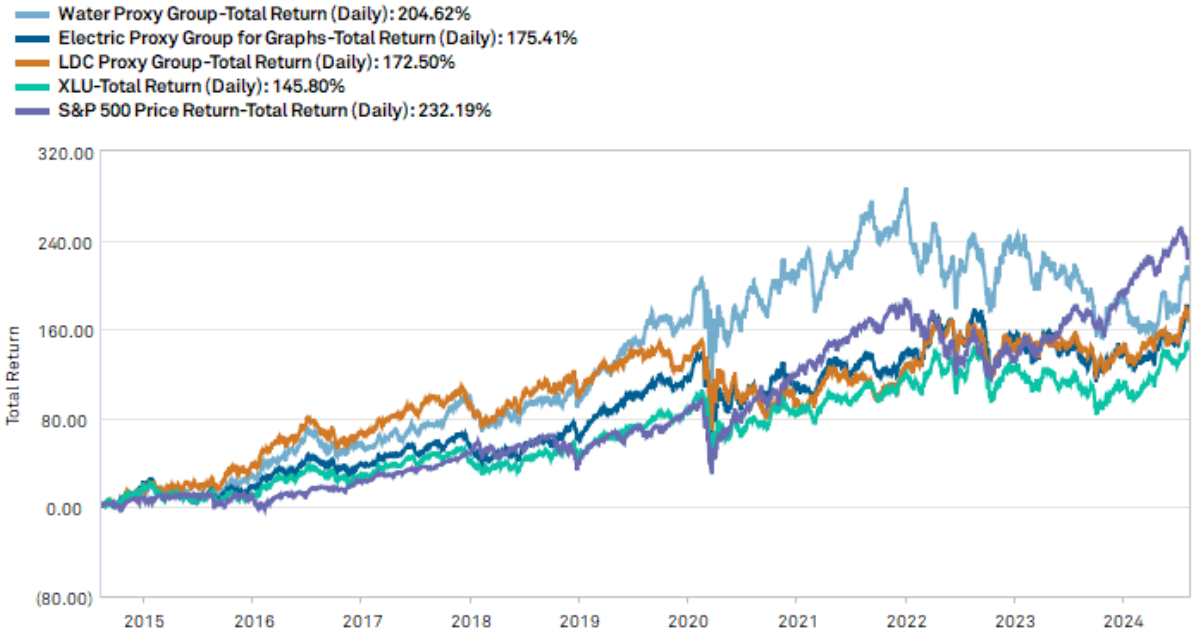

The key takeaways from the above chart is the fact that total shareholder returns for low-risk water utilities had been higher than the S&P 500 until the fall of 2023. Although total returns on the S&P 500 surpassed water utilities in the fall of 2023, the difference in total returns narrowed by early August 2024. Perhaps more useful for purposes of comparing the reasonableness of authorized returns between the electric, LDC and water utility industries is the fact that water utility total stock returns have consistently exceeded that of the LDC and electric utility industries. This fact supports awarding water utilities a lower authorized ROE as compared to LDC and electric utility companies.

COST OF EQUITY METHODS

Q. Now that you have provided some context on changes in the utility capital markets, would you explain how you decided to approach estimating Liberty Water's COE?

A. Yes. I performed a multi-stage DCF analysis and a CAPM analysis on a proxy group of water utility companies. Then, I tested the reasonableness of my estimates by using simple reasonableness checks, such as the straightforward bond-yield-plus-risk-premium ("BYPRP") method discussed in the CFA Program curriculum.

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Q. What have you done to make informed decisions as to rational and reasonable inputs for your COE analyses?

A. The objective of a ROR witness is to emulate investors' approaches to analyzing and making investment recommendations as it relates to investing in utility stocks. Therefore, I have made it a priority to review, analyze, and understand how equity research analysts estimate fair prices for utility stocks. My analysis has allowed me to test the theory of cost of capital estimation in utility ROR testimony, as it compares to practice. I have discovered investment analysts use multi-stage DCF approaches to estimate fundamental values of utility stocks, and/or they use relative valuation techniques that compare a company's P/E ratios to averages for the industry and/or potentially a more tailored subset of peer companies.

In my experience, professional equity ("Wall Street") analysts project long-term compound annual growth rate ("CAGR") in earnings per share ("EPS") to determine whether a company's P/E ratio deserves a premium or a discount to its peers. Wall Street analysts do not use these estimated long-term CAGRs in EPS for purposes of projecting a perpetual dividend growth rate, as some ROR witnesses suggest. When performing an absolute valuation analysis, such as a DCF/DDM, Wall Street analysts assume rational perpetual growth rates in the 3.5% to 4.0% range for water utility companies. [23]

Q. What equity research firms cover Liberty Water's ultimate parent company, APUC?

A. According to APUC's website, the following firms cover its stock: BMO Capital Markets, CIBC, Desjardins Securities, J.P. Morgan, Morgan Stanley, National Bank, Peters & Co. Limited, Raymond James, RBC Capital Markets, Scotia Capital, TD, and Wells Fargo.[24]

Q. Is it important to analyze the information these equity research firms rely on to determine a fair and reasonable ROE for Liberty Water?

A. Yes.

[23] Neil Kalton, Sarah Akers, and Jonathan Reeder, "DDM Analysis Supports Sector Valuation & Quality/Growth Trade," Wells Fargo, August 19, 2019, p. 2; and Durgesh Chopra, et. al, "Initiating Coverage On Water Utilities: Top pick AWK (OP); AWR (UP); WTR/CWT/SJW/CTWS (IL)," Evercore ISI, September 17, 2018, p. 13.
[24] https://investors.algonquinpower.com/news-market-information/analyst-coverage/default.aspx

Q. Why?

A. Analyzing this information is important because these Wall Street analysts are the very individuals that underlie various consensus estimates widely considered by investors. ROR witnesses recognize the influence Wall Street analysts have on utility stock prices by the very fact that they use consensus EPS forecasts for purposes of estimating the COE.

Q. Did you review research by any of these firms for purposes of performing your cost of equity analysis?

A. Yes. I mainly relied on reports Liberty Midstates provided in response to Staff Data Request No. 0073 in Case No. GR-2024-0106. However, over my career I have established relationships with equity investment firms/analysts who have distributed this material to me directly through their email distribution lists. These relationships were borne from my role as a regulator in which many of these analysts seek information related to general and specific Missouri regulatory issues. I have also interacted with these analysts through my participation in organizations, such as the Society of Utility and Regulatory Financial Analysts ("SURFA").

Q. Are the equity research firms that follow APUC the same firms that typically follow publicly traded, United States utility companies?

A. Not entirely. I am familiar with the following firms' coverage of publicly traded, United States utility companies: Morgan Stanley, Wells Fargo, and JP Morgan.

Q. Do firms perform capital market analyses for Canadian utility companies similarly to how they perform them for United States utility companies?

A. Yes. The fundamentals of valuation analyses do not vary by country, even if the strategies of Canada-based utilities may be a bit different from those of their U.S. counterparts. For example, I discovered many of these investment analysts perform DCF analyses to estimate a fundamental value for the companies they cover. They also compare the P/E ratios of their covered companies to their peers in Canada and to their peers in the United States. Of course, to perform a DCF analysis an investor must estimate his/her own COE. Because APUC is riskier than Liberty Water, an investor's COE that is used to discount expected

APUC cash flows should be higher than a COE used to discount Liberty Water's cash flows.

PROXY GROUP COST OF EQUITY

Q. How did you select the proxy group that you used for purposes of estimating Liberty Water's COE?

A. Due to the small number of publicly traded water utility companies in the United States, I chose to include most of the companies generally classified as water utility companies by Value Line. My proxy group consisted of the following six companies: American States Water Company, American Water Works Company, California Water Service Group, Essential Utilities,[25] Middlesex Water Company, and SJW Group. Although all of these companies have business risk profiles consistent with water and sewer utility operations, investment analysts do not provide financial metric estimates for Middlesex Water Company. Therefore, because I rely on investment analysts' projections for my multi-stage DDM analysis, I excluded Middlesex Water Company from this analysis. However, I included it in my Capital Asset Pricing Model ("CAPM") analysis.

Q. How does your proxy group's credit ratings compare to the credit rating assigned to the third-party debt provided to Liberty Water through affiliate loans?

A. The average S&P issuer credit rating for the water utility proxy group is in the range of 'A-' to 'A'.

Q. What is the average common equity ratio of your proxy group?

A. The simple average common equity ratio as a percentage of total capital is 46.93%. The simple average common equity ratio as a percentage of long-term capital is 48.62%.

[25] Although I chose not to exclude Essential Utilities from my proxy group, during my analysis I gave consideration to the fact that it is now a combination water and natural gas distribution utility. Before March 2020, Essential Utilities (f/k/a Aqua America) was primarily a regulated water utility company, but it acquired a sizeable amount of gas distribution assets when it bought Peoples Gas Company in March 2020.

Q. What methods/models did you use to estimate the proxy group's COE?

A. I used the DCF method and the CAPM.

MULTI-STAGE DCF/DDM

Q. What version of the DCF did you use for your DCF analysis?

A. For my DCF analysis, I used the multi-stage version because it allows for a modeling of changes in dividend growth due to varying capital expenditure cycles occurring within the water utility industry.

For the first stage (July 31, 2024 through June 30, 2028), I used Wall Street analysts' consensus DPS estimates to the extent they were available. For the second stage (June 30, 2028 through June 30, 2038), I allowed for a gradual decline from Wall Street analysts' projected 5-year CAGR in EPS to a perpetual growth rate in the range of 3.75% to 4.25%, starting on June 30, 2038. In order to estimate investors' anticipated annual DPS over the second stage, I determined consensus analysts' estimated dividend payout ratios as of 2028. I then allowed the dividend payout ratios to gradually converge to a sustainable payout ratio in the range of 59.46% (3.75% perpetual growth at 9.25% terminal ROE) to 54.05% (4.25% perpetual growth at 9.25% terminal ROE) starting in 2038. The terminal payout ratios are consistent with the constant/sustainable-growth DCF theory that requires DPS, EPS and BVPS to grow in perpetuity at the same rate.

My industry COE estimate, based on application of the multi-stage DCF to the proxy group, implies a COE of approximately 7.3% to 7.9% (see Schedules DM-D-5 through DM-D-7).

Q. How did you determine your assumed 3.75% to 4.25% perpetual growth rate for DPS?

A. This growth rate range is generally consistent with the following: (1) potential long-term sustainable growth rate of the U.S. economy,[26] (2) water utility industry fundamentals as it

[26] www.cbo.gov/publication/59711, https://www.philadelphiafed.org/surveys-and-data/real-time-data-research/spf-q1-2024, https://www.philadelphiafed.org/surveys-and-data/real-time-data-research/livingston-2024-06.

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relates to expected ROEs on water utility rate base growth, and (3) commentary/analysis available from the investment community.[27] As it relates to fundamentals, a sustainable growth rate can be determined by multiplying an average long-term industry retention rate by an expected book ROE of approximately 9.25%, which is higher than the terminal ROE used by Wells Fargo and Evercore ISI.[28] Assuming the water utility industry retains sufficient capital to ensure it doesn't have to access external equity markets, then it is reasonable to model an earnings per share ("EPS") retention rate of 43.24%, which applied to a 9.25% ROE, results in a perpetual growth rate of 4%.

Q. What is your basis for an assumed terminal ROE of 9.25%?

A. In recent water utility rate cases, I had assumed a terminal ROE of 9.0%, which was generally consistent with terminal ROE assumptions used by Wells Fargo (9.0%) and Evercore ISI (8.75%). However, due to recent, sustained increases in long-term bond yields, and the fact that average authorized ROEs for water utilities did not decline to 9% when the cost of capital was at all-time lows, I determined a 9.25% terminal ROE is a more reasonable assumption at this time.

CAPM

Q. Are there any other models that investors typically use to estimate the utility industries' COE?

A. Yes. In my experience, many Wall Street analysts use the CAPM to determine a discount rate, *i.e.*, the COE, to apply to expected cash flows to the equity investor. The CAPM shows the specific impact of lower interest rates on the cost of capital. Although CAPM COE estimates can be manipulated by using unreasonable market risk premium estimates, there are a variety of authoritative sources that provide market-risk premium estimates that can form the basis for a consensus view on reasonable risk premium based on current capital-market conditions.

[27] Neil Kalton, Sarah Akers, and Jonathan Reeder, "DDM Analysis Supports Sector Valuation & Quality/Growth Trade," Wells Fargo, August 19, 2019, p. 2; and Durgesh Chopra, et. al, "Initiating Coverage On Water Utilities: Top pick AWK (OP); AWR (UP); WTR/CWT/SJW/CTWS (IL)," Evercore ISI, September 17, 2018, p. 13.
[28] *Id.*

Q. What is the underlying theory that supports the use of the CAPM to estimate the cost of equity for utilities?

A. The CAPM is based on capital market theory in which it is recognized that although the total risk of a company and/or industry consists of market ("systematic") risk and asset/business-specific ("unsystematic") risk, investors are only compensated for systematic risk because holding a diversified portfolio allows the investor to avoid unsystematic risk. Systematic risks are unanticipated events in the economy, such as economic growth, changes in interest rates, demographic changes, etc., that affect almost all assets to some degree. The required risk premium for incurring the market risk as it relates to the investment/portfolio is determined by adjusting the market-risk premium by the beta of the stock or portfolio. The adjusted-risk premium is then added to a risk-free rate to determine the cost of equity. The CAPM is typically expressed in equation form as follows:

$$K_e = Rf + \beta\,(RPm)$$

Where:
K_e = the cost of equity for a security;
Rf = the risk-free rate;
β = beta; and
RP_m = market risk premium.

For purposes of my CAPM analysis, I relied on Kroll's recommended equity risk premium of 5.0% provided as of June 6, 2024[29] and a range of realized historical equity risk premiums of 5.14% (geometric historical mean for 1926 through 2023) to 6.56% (arithmetic historical annual mean for the period 1926 through 2023) derived from data provided by Ibbotson Associates' Stocks, Bonds, Bills and Inflation database.

Although each of these equity risk premium estimates use various methods and risk-free rates to arrive at their final estimates, I do not consider any estimate outside these to be consistent with the investment community's "consensus." I specifically used a market risk premium range of 5% to 6% to estimate the COE for the water utility industry. One of the

[29] https://www.kroll.com/-/media/kroll-images/pdfs/kroll-lowers-its-recommended-us-equity-risk-premium-effective-june-5-2024.pdf

primary drivers causing a higher market-risk premium versus a lower market-risk premium is due to whether this market-risk premium is applied to a normalized risk-free rate or a current risk-free rate (higher market risk premiums applied to lower current low risk-free rates). Long-term-expected nominal market returns for the S&P 500 are as low as 7%.[30] Therefore, market-risk premiums in the 5.0% to 6.0% range may be excessive for purposes of a CAPM analysis.

Q. What does the beta represent in a CAPM analysis?

A. Beta is statistically defined as the covariance of the returns on an asset (in this case an individual stock or group of stocks) with the return on the S&P 500 divided by the variance of the returns on the S&P 500. This statistical measure is intended to provide investors with insight regarding expected volatility of a security (or portfolio of securities) as it relates to market volatility. A beta of less than one implies less expected volatility than the market, with the trade-off of a lower expected return than the market. The reverse is expected for a beta greater than one.

Q. Are stock betas calculated based on historical market prices and relationships?

A. Yes. For example, Value Line's published betas are based on five years of historical weekly returns of a stock or portfolio of stocks as compared to the weekly returns of the market.

Q. Have water utility stock betas exhibited a wide range since the onset of the Covid-19 pandemic?

A. Yes. Prior to the onset of Covid-19, water utility stock betas based on 5-years of historical stock market prices were approximately 0.6. After the market swooned in synchronization at the beginning of the Covid-19 pandemic, water utility betas increased to slightly above 0.8.

[30] First Quarter 2024 Survey of Professional Forecasters, Philadelphia Federal Reserve Board (Feb. 9, 2024), https://www.philadelphiafed.org/surveys-and-data/real-time-data-research/spf-q1-2024 and John Bilton et al., *2024 Long-Term Capital Market Assumptions: Time-tested projections to build stronger portfolios,* J.P.Morgan (October 17, 2023), https://am.jpmorgan.com/us/en/asset-management/adv/insights/portfolio-insights/ltcma/

Q. What was the primary cause of the increase in utility stock betas?

A. The spike in utility stock betas occurred when the market plummeted at the onset of the pandemic, in March 2020. It is quite common for all securities, both higher-risk and lower-risk securities, to move in tandem during significant market corrections. Because betas measure the relative volatility of a company or a portfolio as it relates to the market, if all securities rapidly decline at the same time, this causes all betas to converge toward one.

For example, the semiconductor equipment industry typically has betas that significantly exceeds one. However, when all securities declined at the start of the pandemic, the semiconductor equipment industry's betas decreased towards one. After the stock market data associated with the synchronized decline of equity markets during March and April of 2020 began to drop off of 1-year beta calculations, the semiconductor equipment industry's betas started to increase back to their normal higher levels.

Q. How much have the utility industry's one-year raw betas changed over the last few years due to the market contraction at the onset of the pandemic?

A. Please see the following chart for one-year raw betas since mid-2019 for the water utility industry, the electric utility industry and the LDC industry:

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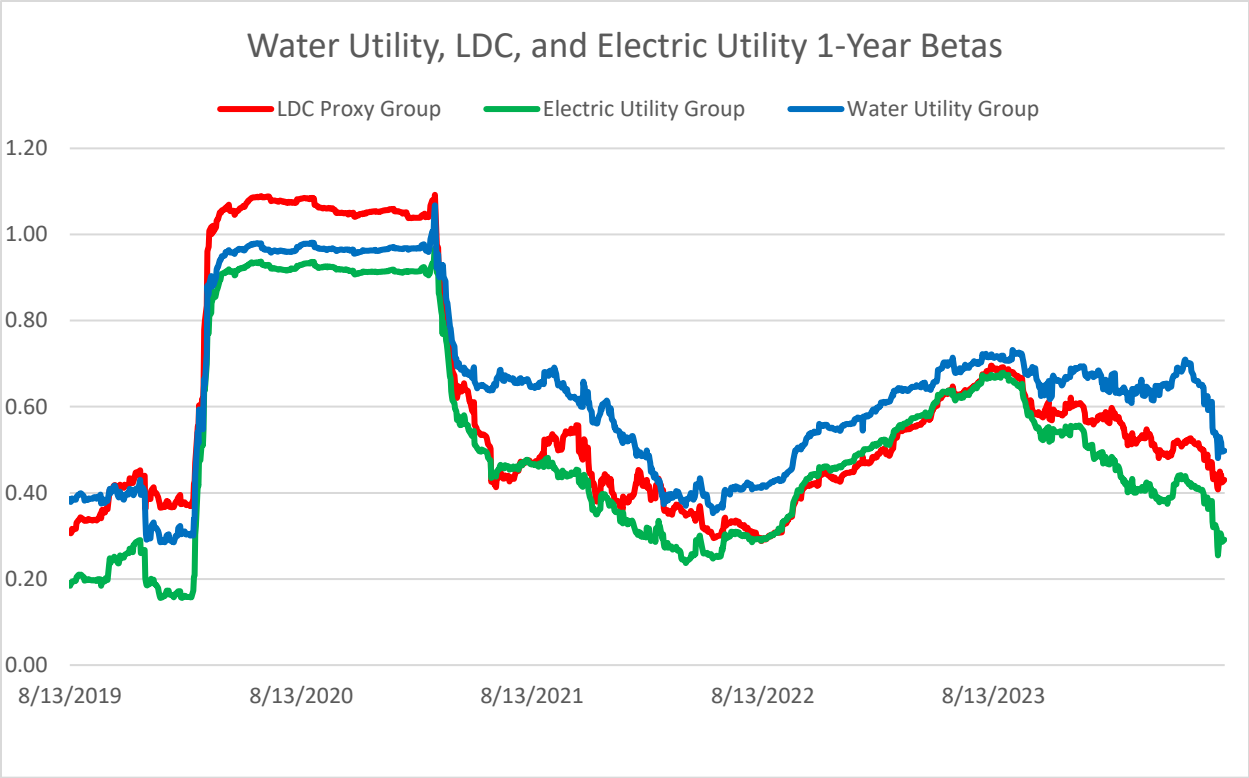

Q. How do you interpret the one-year raw beta data shown in the chart?

A. First, as with analyzing utility P/E ratios earlier in my testimony, I decided to disaggregate all subsectors (water, natural gas, and electric) of the utility industry to not only illustrate the spike in betas during the synchronized market contraction at the onset of Covid-19, but also evaluate any trends between the various subsectors over time. As is evident from the chart, after the market data from the spring of 2020 (onset of Covid-19 and associated severe market contraction) drops off the beta calculations, one-year raw betas for all subsectors exhibit a more normalized variation due to general market variations after the Covid-19 swoon. It is also notable that 1-year raw betas for the water utility industry have been higher than those of the electric and LDC industries. This dynamic implies that the COE is higher for water utility companies rather than lower as implied by my multi-stage DCF results and corroborating discount rates used by equity analysts. However, as demonstrated by American Water Works Company Inc. when its P/E ratios were approximately twice as high as that of the electric and gas utility industries, stock prices of richly valued companies or industries exhibit more volatility than cheaper valued

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companies or industries. Therefore, I assign more weight to my DCF analysis for purposes of estimating a reliable and logical COE estimate.

Q. Did you determine longer-term water utility betas which exclude the abnormal situation which occurred during the broad market decline at the onset of the Covid-19 pandemic?

A. Yes. I determined water utility betas based on data for the last four years, which captures the market dynamics of the period impacted by monetary and fiscal policies in response to Covid-19, but excludes the market swoon in March 2020. The average betas of the water utility proxy group based on the past four years of data is around 0.78. Consistent with the 1-year beta data over the last four years, water utility four-year betas are higher than the electric and gas utility four-year betas I calculated in the pending EMW and Liberty Midstates rate cases.

Q. Based on your CAPM analysis using four-year betas, what is the estimated COE for the water utility proxy group?

A. My CAPM COE analysis indicates that the water utility industry's COE is in the range of 8.4% to 9.3%. (*see* Schedule DM-D-8).

Q. Are there any other reasonableness tests to show your COE estimates are rational and logical?

A. Yes. As I indicated earlier in my testimony, a simple rule of thumb the CFA Program curriculum suggests to estimate the COE is to add 3% to 4% risk premium to a company's bond yield to provide a fairly simple, but objective cost of equity. Being that the investment community views utility stocks as bond surrogates/substitutes, it is logical and reasonable not to add a risk premium any higher than 3% to the bond. Simply adding a 3% risk premium to the annual coupon rate of 5.87% on LUCo's 10-year unsecured bonds issued on January 12, 2024, implies a COE of around 8.87%. However, as I explained earlier in my testimony, LUCo's debt costs are higher than other 'BBB'-rated utilities. Consequently, the 3% risk premium should be added to my adjusted cost of debt of 5.37% for an implied COE of 8.37%.

LUCo's water utility operations account for approximately 24% of LUCo's United States' regulated utility rate base, with the other 76% of rate base consisting of 54% electric utility operations and 22% LDC operations. In order to assess recent debt costs of a pure-play water and sewer utility, I researched American Water Works Company Inc.'s (parent of Missouri American Water Company) recent bond issuances. American Water issued 10-year and 30-year unsecured bonds on February 23, 2024. The coupons on this debt were 5.15% and 5.45%, respectively. Adding a 3% equity risk premium to the mid-point of these coupons (5.3%), implies a COE of around 8.3%. It is also relevant to note that American Water's capital structure has recently consisted of approximately 45% common equity, which has more financial risk than my recommended ratemaking common equity ratio of 47.5% in this case.

Q. Based on your analyses and understanding of the water utility industry's COE, investor expectations on allowed ROEs, average water utility authorized ROEs, and your recommendation in the concurrent Liberty Midstates and EMW's rate cases what would be a fair and reasonable allowed ROE range for Liberty Water in this case?

A. 9.0% to 9.5% would be justified with 9.25% being my point recommendation.

OVERALL RATE OF RETURN

Q. What is your recommended ROR for Liberty Water?

A. My recommended ROR of 6.65% is based on an ROE of 9.25% applied to a 47.5% common equity ratio and cost of debt of 4.29% applied to the remaining 52.5% of the capital structure (see Schedule DM-D-9).

SUMMARY AND CONCLUSIONS

Q. Can you summarize your main conclusions and views as it relates to an allowed ROR for Liberty Water in this case?

A. Yes. The cost of equity for utilities has increased since the end of 2022, but it is still below average authorized ROEs. A fair and reasonable authorized ROE for Liberty Water must

consider the current context of utility stock valuation levels compared to past historical valuation levels.

Starting around 2015, the Commission generally considered a 9.5% ROE to be fair and reasonable for Missouri's electric utilities. At that time, water utilities were valued higher than electric utilities implying at least an ROE of no higher than 9.5% would have been reasonable for a Missouri water utility. The fact that Ameren Missouri and Evergy Metro, two companies which directly access third-party debt markets, were still able to attract reasonably-priced capital after being authorized approximately 9.5% ROEs during the same period, should provide the Commission with assurance that 9.5% is an appropriate benchmark. Additionally, considering that authorized ROEs in Missouri have not declined much since 2015, despite the continued decline in the cost of capital until 2022, this fact does not support increasing authorized ROEs due to the recent increase in the cost of equity. Consequently, I recommend the Commission set Liberty Water's utility rates based on a 9.25% ROE.

The Commission has set APUC's Missouri utilities ratemaking capital structures premised on the proportion of common equity and long-term debt APUC had typically targeted for its regulated utility segment. While APUC's non-regulated operations and associated capital structure issues have caused APUC to become less financially stable, the same is not true for APUC's regulated utility segment. Therefore, although LUCo's actual capital structures have consistently contained around 60% common equity in recent quarters, this capital structure is not rational, considering these regulated utility operations are still considered low-risk. Therefore, the Commission should still authorize a common equity ratio for Liberty Water based on the common equity ratios APUC had considered consistent with the lower business risk of its regulated utility segment.

Q. Does this conclude your testimony?

A. Yes.

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Request of Liberty Utilities (Missouri Water) LLC d/b/a Liberty for Authority to Implement a General Rate Increase for Water and Wastewater Service Provided in its Missouri Service Areas	))))))	Case No. WR-2024-0104

AFFIDAVIT OF DAVID MURRAY

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

David Murray, of lawful age and being first duly sworn, deposes and states:

1. My name is David Murray. I am a Utility Regulatory Manager for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my direct testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

David Murray
Utility Regulatory Manager

Subscribed and sworn to me this 20th day of August 2024.

TIFFANY HILDEBRAND
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI
MY COMMISSION EXPIRES AUGUST 8, 2027
COLE COUNTY
COMMISSION #15637121

Tiffany Hildebrand
Notary Public

My Commission expires August 8, 2027.