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APPLICATION OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC FOR AUTHORITY TO CHANGE RATES	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

DIRECT TESTIMONY

OF

ANN E. BULKLEY

ON BEHALF OF

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC

MARCH 2024

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LIST OF EXHIBITS

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym	Definition
ALJ	Administrative Law Judge
Ameren	Ameren Corporation
AEE	Ameren Corporation
Ameren IL	Ameren Illinois Co.
BYRP	Bond Yield Risk Premium
CAPM	Capital Asset Pricing Model
CenterPoint Houston	CenterPoint Energy Houston Electric, LLC
ComEd	Commonwealth Edison Co.
Court	U.S. Supreme Court
Commission	Public Utility Commission of Texas
Company	CenterPoint Energy Houston Electric, LLC
CNP	CenterPoint Energy, Inc.
CPI	Consumer Price Index
DCF	Discounted Cash Flow
DCRF	Distribution Cost Recovery Factor
ECAPM	Empirical Capital Asset Pricing Model
EPS	Earnings Per Share
ERCOT	Electric Reliability Council of Texas
Exelon	Exelon Corporation
EXC	Exelon Corporation
FOMC	Federal Open Market Committee
Fitch	Fitch Ratings
ICC	Illinois Commerce Commission

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Moody's	Moody's Investors Service
Oncor	Oncor Electric Delivery Company
P/E	Price to Earnings
PNW	Pinnacle West Capital Corporation
PUCT	Public Utility Commission of Texas
PURA	Public Utility Regulatory Act
REP	Retail Electric Provider
Risk Premium	Bond Yield Risk Premium
ROE	Rate of Return on Equity
RRA	Regulatory Research Associates
S&P	Standard & Poor's
TCOS	Interim Transmission Cost of Service Adjustment
TEEEF	Temporary Emergency Electric Energy Facilities Rider
Test Year	12 Months Ending December 21, 2023
Value Line	Value Line Investment Survey
WACC	Weighted Average Cost of Capital
YOY	Year Over Year

EXECUTIVE SUMMARY OF ANN E. BULKLEY

My testimony presents evidence and provides a recommendation regarding CenterPoint Energy Houston Electric, LLC's ("CenterPoint Houston" or the "Company") rate of return on equity ("ROE") and also provides an assessment of the capital structure and cost of debt to be used for ratemaking purposes.

The estimation of the Company's ROE relies on several analytical approaches, which include the Constant Growth Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), Empirical Capital Asset Pricing Model ("ECAPM"), and a Bond Yield Risk Premium ("BYRP" or "Risk Premium") analysis, in reference to a proxy group of publicly traded companies. My analysis of the reasonableness of the capital structure is based on a comparison of the Company's proposed capital structure as compared with the capital structures of the operating utilities of the proxy group companies. Finally, in order to evaluate the cost of debt, I compared the cost of debt at the time of issuance with the yields on the Moody's Investors Service ("Moody's") utility bond indexes as of the date of the debt issuance.

In addition, I also considered the effect of recent capital market conditions on the cost of equity as compared to when the Company filed its last rate proceeding and as compared to the conditions at the time of the more recent Oncor Electric Delivery Company ("Oncor") rate proceeding. The results of that analysis demonstrate that interest rates have increased approximately 294 basis points higher than at the time of the Company's last rate case, when the authorized ROE was at 9.40 percent, and 300 basis points higher than at the time of the Oncor case, where the Commission authorized an ROE

of 9.70 percent. This data suggests that the cost of equity has increased since each of these rate determinations.

I also consider more broadly the expectation for interest rates, which have increased significantly over the past several years. The Federal Reserve has committed to the use of monetary policy, and in particular, higher interest rates, to reduce inflation to a target level of 2.00 percent. While inflation has receded from peak levels, recent macroeconomic reports demonstrate that the economy is stronger than anticipated, supporting the expectation that interest rates will remain relatively high.

The following summarizes my conclusions regarding the cost of capital for CenterPoint Houston:

- The model results support a range of returns from 10.00 percent to 11.00 percent and within that range, I recommend an ROE of 10.60 percent. However, as discussed in the Direct Testimony of Company witness Jason M. Ryan, taking into consideration the affordability for customers of the overall revenue requirement, the Company is requesting an ROE of 10.40 percent.
- CenterPoint Houston faces relatively greater financial risk relative to the proxy group due to the Company's proposed highly leveraged capital structure and capital investment plan.
- The Company's cost of debt is within the range established by market conditions at the time the debt was issued, and therefore is reasonable and should be authorized.

DIRECT TESTIMONY OF ANN E. BULKLEY

I. INTRODUCTION

Q: PLEASE STATE YOUR NAME AND AFFILIATION.

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

Q: PLEASE DESCRIBE YOUR BACKGROUND AND PROFESSIONAL EXPERIENCE IN THE ENERGY AND UTILITY INDUSTRIES.

A. I hold a Bachelor's degree in Economics and Finance from Simmons College and a Master's degree in Economics from Boston University, and 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 testimony that I have filed in other proceedings are included as Exhibit AEB-1 to this testimony.

Q: ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of CenterPoint Houston.

Q: PLEASE DESCRIBE THE PURPOSE OF YOUR DIRECT TESTIMONY.

A. The purpose of my Direct Testimony is to present evidence and provide a recommendation regarding the appropriate ROE and overall rate of return to be used for CenterPoint Houston's electric utility operations. I also provide an assessment of the reasonableness of the proposed capital structure and cost of debt to be used for ratemaking purposes that is discussed in the Direct Testimony of Company witness Jacqueline M. Richert.

Q: ARE YOU SPONSORING ANY EXHIBITS IN SUPPORT OF YOUR DIRECT TESTIMONY?

A. Yes. My analyses and recommendations are supported by the data presented in Exhibit AEB-2 through Exhibit AEB-15.

Q: WAS YOUR TESTIMONY, INCLUDING ASSOCIATED SCHEDULES, WORKPAPERS, AND EXHIBITS, PREPARED BY YOU OR UNDER YOUR DIRECT SUPERVISION AND CONTROL?

A. Yes.

Q: IS YOUR TESTIMONY RELATED TO THE TESTIMONY OF OTHER WITNESSES IN THIS PROCEEDING?

A. Yes. My testimony regarding CenterPoint Houston's cost of capital is related to Ms. Richert's Direct Testimony, who supports CenterPoint Houston's capital structure and cost of long-term debt.

Q: PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT LEAD TO YOUR ROE RECOMMENDATION.

A. In developing my recommendation regarding the Company's proposed ROE in this proceeding, I have estimated the Company's cost of equity by applying several traditional estimation methodologies to a proxy group of utilities generally comparable to the Company in terms of risk and business operations. These estimation methodologies are the DCF model, the CAPM, the ECAPM, and a Risk Premium analysis. My recommendation also takes into consideration the Company's relative business and regulatory risk as compared with the proxy group; and the Company's proposed capital structure as compared with the capital structures of the operating utilities of the proxy

group companies. While I do not make specific adjustments to my ROE recommendation for these factors, I do consider these factors in the aggregate in determining where my recommended ROE falls within the range of the analytical results.

Q: HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY ORGANIZED?

A. The remainder of my Direct 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 prospective capital market conditions and the effect of those conditions on the Company's cost of equity.
- Section V explains my selection of a proxy group of electric utilities.
- Section VI describes my analyses and the analytical basis for my recommended ROE in this proceeding.
- Section VII provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized in this proceeding.
- Section VIII assesses the proposed capital structure.
- Section IX assesses the proposed cost of long-term debt.
- Section X presents my overall cost of equity model results and conclusions and recommendations.

II. SUMMARY OF ANALYSES 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 consider in my cost of equity analyses and recommended ROE for the Company in this proceeding are:

- The U.S. Supreme Court's ("Court") *Hope* and *Bluefield* decisions,[1] which 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 current 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 the Company's cost of equity. Because the Company'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, forecasted risk-free rate and market risk premium in the CAPM analysis).
- Although the companies in my proxy group are generally comparable to CenterPoint Houston, each company is unique, and no two companies have the exact same business and financial risk profiles. Accordingly, I consider the Company's regulatory, business, and financial risks relative to the proxy group of comparable companies in

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

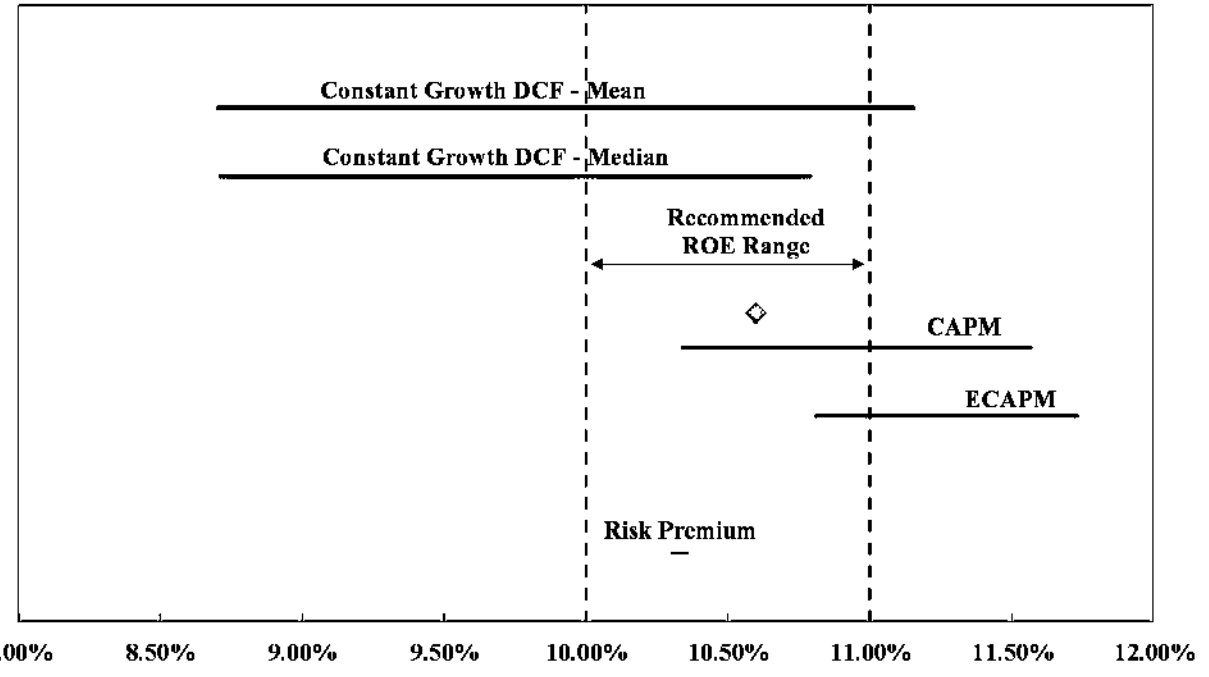
determining where the Company's ROE should fall within the reasonable range of analytical results to appropriately account for any residual differences in risk.

- Finally, I consider that the Company has significantly greater leverage (*i.e.*, debt) relative to the proxy group companies, which increases the Company's overall risk profile as compared with the proxy group.

Q: WHAT ARE THE RESULTS OF THE MODELS THAT YOU HAVE USED TO ESTIMATE THE COST OF EQUITY FOR CENTERPOINT HOUSTON?

A. Figure AEB-1 summarizes the range of results produced by the constant growth DCF, CAPM, ECAPM, and Risk Premium analyses based on data through January 2024.

Figure AEB-1: Summary of Analytical Results



As shown, the range of results across all methodologies is wide. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results varies considerably across methodologies.

Q: ARE PROSPECTIVE CAPITAL MARKET CONDITIONS EXPECTED TO AFFECT THE RESULTS OF THE COST OF EQUITY ANALYSES FOR THE COMPANY 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 over the past two years and are expected to remain relatively high at least over the next year in response to inflation.
- Since (1) utility dividend yields are less attractive than the risk-free rates of government bonds; (2) interest rates are expected to remain near current levels over the next year, and (3) 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 elevated 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 rely on current utility share prices, would understate the cost of equity during the period that the Company'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 the Company.

Q: WHAT IS YOUR RECOMMENDED ROE FOR CENTERPOINT HOUSTON IN THIS PROCEEDING?

A. Considering the analytical results of the cost of equity models, current and prospective capital market conditions, and the Company's regulatory, business, and financial risk relative to the proxy group, I recommend that an ROE in the range 10.00 to 11.00 percent is reasonable, and within that range, an ROE of 10.60 percent. As discussed in the Direct Testimony of Company witness Jason M. Ryan, taking into consideration the affordability for customers of the overall revenue requirement, the Company is requesting an ROE of 10.40 percent.

Q: WITH RESPECT TO THE CAPITAL STRUCTURE, WHAT OPTIONS ARE MOST OFTEN CONSIDERED BY UTILITY REGULATORY COMMISSIONS WHEN SETTING A REGULATED UTILITY'S CAPITAL STRUCTURE FOR RATEMAKING PURPOSES?

A. Commissions most often rely on the operating company's actual or projected capital structure per the financial books and records of the company when this capital structure is reflective of the way the company is operated and it is generally consistent with industry norms.

Q: HOW DOES THE COMPANY'S CAPITAL STRUCTURE AFFECT ITS OVERALL RISK PROFILE?

A. The Company's proposed capital structure is composed of 55.10 percent debt and 44.90 percent equity, which is much more highly leveraged than the average of the utility operating subsidiaries of the proxy group companies. As shown in Exhibit AEB-14, the mean and median equity ratios of the proxy group companies are 52.4 percent and 52.8

percent, respectively, and the high end of the range is 61.2 percent. As leverage increases, a company has less financial flexibility due to the need to service the fixed payments associated with its debt. This reduced financial flexibility results in greater financial risk for the company due to its lower overall coverage ratios. Further, higher leverage increases the risk to equity holders, which are the last claimants on company assets.

Q: IS THE COMPANY'S REQUESTED CAPITAL STRUCTURE REASONABLE?

A. The Company's proposed capital structure is within the range of the actual capital structures of the operating utilities of the proxy group companies. However, the Company's proposed capital structure is significantly more highly leveraged than the average of the operating utilities of the proxy group. As a result, the relatively greater leverage in the Company's capital structure results in the Company having greater overall financial risk than the proxy group companies, which is a consideration in terms of my recommended ROE for the Company in this proceeding.

Q: IS THE COMPANY'S PROPOSED COST OF LONG-TERM DEBT REASONABLE?

A. Yes. The Company's cost of debt for each issuance is consistent with the market cost of debt at the time of issuance and is thus reasonable.

III. REGULATORY GUIDELINES

Q: PLEASE DESCRIBE THE PRINCIPLES THAT GUIDE THE ESTABLISHMENT OF THE COST OF EQUITY FOR A REGULATED UTILITY.

A. The 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) that the end result, as opposed to the methodology employed, is the controlling factor in arriving at 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 and acknowledges that utility investors are entitled to a reasonable opportunity to earn a reasonable return. The Commission's obligations for establishing a reasonable return are described in the Public Utility Regulatory Act ("PURA"):[3]

> In establishing an electric utility's rates, the regulatory authority shall establish the utility's overall revenues at an amount that will permit the utility a reasonable opportunity to earn a reasonable return on the utility's invested capital used and useful in providing service to the public in excess of the utility's reasonable and necessary operating expenses.[4]

Q: IS DETERMINING A FAIR RATE OF RETURN SOLELY TO PROTECT THE UTILITY'S INTERESTS?

A. No. As the Court noted in *Bluefield*, a proper rate of return not only assures "confidence in the financial soundness of the utility [but also] should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties."[5] As the Court went on to explain

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

[3] PURA, Tex. Util. Code §§ 11.001–66.016.

[4] PURA § 36.051.

[5] *Bluefield*, 262 U.S. at 693.

in *Hope*, the rate-making process "involves a balancing of the investor and the consumer interests."[6]

Q: WHY IS IT IMPORTANT FOR A UTILITY TO BE ALLOWED THE OPPORTUNITY TO EARN A RETURN THAT IS ADEQUATE TO ATTRACT CAPITAL AT REASONABLE TERMS?

A. An authorized ROE that is adequate to attract capital at reasonable terms enables the utility to continue to provide safe, reliable utility service while maintaining its financial integrity. That return should be commensurate with returns required by investors elsewhere in the market for investments of comparable risk. It is important to recognize that equity investors have a choice of where to invest capital. If the utility's return is not adequate, debt and equity investors will seek alternative investment opportunities for which the expected return reflects the perceived risks, thereby inhibiting the Company's ability to attract capital at reasonable cost. This is of particular concern for the Company at this time given that: (1) its capital expenditure plan is significantly higher than its historical level of capital expenditures; (2) its capital expenditure plan is significantly higher than those of the proxy group companies as measured on the percentage of capital expenditures to net plant; and (3) the industry overall has significant needs for investment in capital, meaning there is competition for capital in the market.

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

[6] *Hope*, 320 U.S. at 603.

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 that is not commensurate with 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.

Q: DOES THE FACT THAT THE COMPANY IS OWNED BY CENTERPOINT ENERGY, INC. ("CNP"), 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 the Company, not its publicly-traded parent, CNP. More importantly, however, it is appropriate to establish a cost of equity and capital structure that provide the Company the ability to attract capital on reasonable terms, both on a stand-alone basis and within CNP. While the Company is committed to investing the

required capital to provide safe and reliable service, because it is a subsidiary of CNP, the Company competes with the other CNP subsidiaries for discretionary investment capital. In determining how to allocate its finite discretionary capital resources, it would be reasonable for CNP to consider the overall equity return (*i.e.*, the combination of its authorized ROE and the equity ratio) of each of its subsidiaries.

Q: HAS THE COMMISSION CONSIDERED THE CAPITAL MARKET TRENDS AND THE IMPACT ON UTILITY RETURNS?

A. Yes. For example, in its 2023 order regarding Oncor, the Commission stated:

> After consideration of the record evidence, the Commission determines that a return on equity of 9.70% is appropriate for Oncor. Electric utilities face increasing inflation and less favorable short- and long-term interest rates than in recent years, which saw steady decreases in utility returns on equity.[7]

Therefore, the Commission has considered the macroeconomic trends and their impact on utility ROEs. This should also be an important consideration for the Commission in the current case, particularly since, as discussed in the next section, long-term interest rates have increased substantially since the data available when the Commission made its determination in the Oncor proceeding,[8] thereby increasing the cost of equity for utilities.

Q: IS THE REGULATORY FRAMEWORK, INCLUDING THE AUTHORIZED ROE AND EQUITY RATIO, IMPORTANT TO THE FINANCIAL COMMUNITY?

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

[7] *Application of Oncor Electric Delivery Company LLC for Authority to Change Rates*, Docket No. 53601, Order on Rehearing at 11 (Jun. 30, 2023).

[8] Docket No. 53601, Rebuttal Testimony of Dylan W. D'Ascendis at 5, 7 (Sept. 16, 2022) (updating Oncor's ROE analyses as of August 12, 2022).

downgrades and material stock price declines. For example, the Company,[9] as well as ALLETE, Inc.[10] and Pinnacle West Capital Corporation ("PNW")[11] each received credit rating downgrades following rate case decisions in the past few years for reasons that included below average authorized ROEs. The most recent example is 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.[12] Specifically, the ICC authorized an ROE for Ameren IL of 8.72 percent[13] and 8.905 percent for ComEd,[14] which was a significant reduction from the Administrative Law Judge's recommendations of 9.24 percent and 9.28 percent, respectively.[15]

Q: HOW DID THE MARKET RESPOND TO THE ICC'S DECISIONS FOR THESE UTILITIES?

A. While the S&P 500 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

[9] FitchRatings, *Fitch Downgrades CenterPoint Energy Houston Electric to BBB+; Affirms CNP; Outlooks Negative* (Feb. 19, 2020), https://www.fitchratings.com/research/corporate-finance/fitch-downgrades-centerpoint-energy-houston-electric-to-bbb-affirms-cnp-outlooks-negative-19-02-2020.

[10] Moody's Invs. Serv., *Credit Opinion: ALLETE, Inc.: Update following downgrade* at 3

[11] S&P Capital IQ Pro; FitchRatings, *Fitch Downgrades Pinnacle West Capital & Arizona Public Service to 'BBB-'; Outlooks Remain Negative* (Oct. 12, 2021), https://www.fitchratings.com/research/corporate-finance/fitch-downgrades-pinnacle-west-capital-arizona-public-service-to-bbb-outlooks-remain-negative-12-10-2021; Moody's Invs. Serv., *Rating Actions: Moody's downgrades Pinnacle West to Baa1 and Arizona Public Service to A3; outlook negative* (Nov. 17, 2021).

[12] *Ameren Illinois Company d/b/a Ameren Illinois Petition for Approval of a Multi-Year Rate Plan pursuant to 220 ILCS 5/16-108.18*, Ill. Com. Comm'n Docket No. 23-0082, Order (Dec. 14, 2023); *Commonwealth Edison Company Verified Petition for Approval of a Multi-Year Rate Plan under Section 16-108.18 of the Public Utilities Act*, Ill. Com. Comm'n Docket No. 23-0055, Order (Dec. 14, 2023).

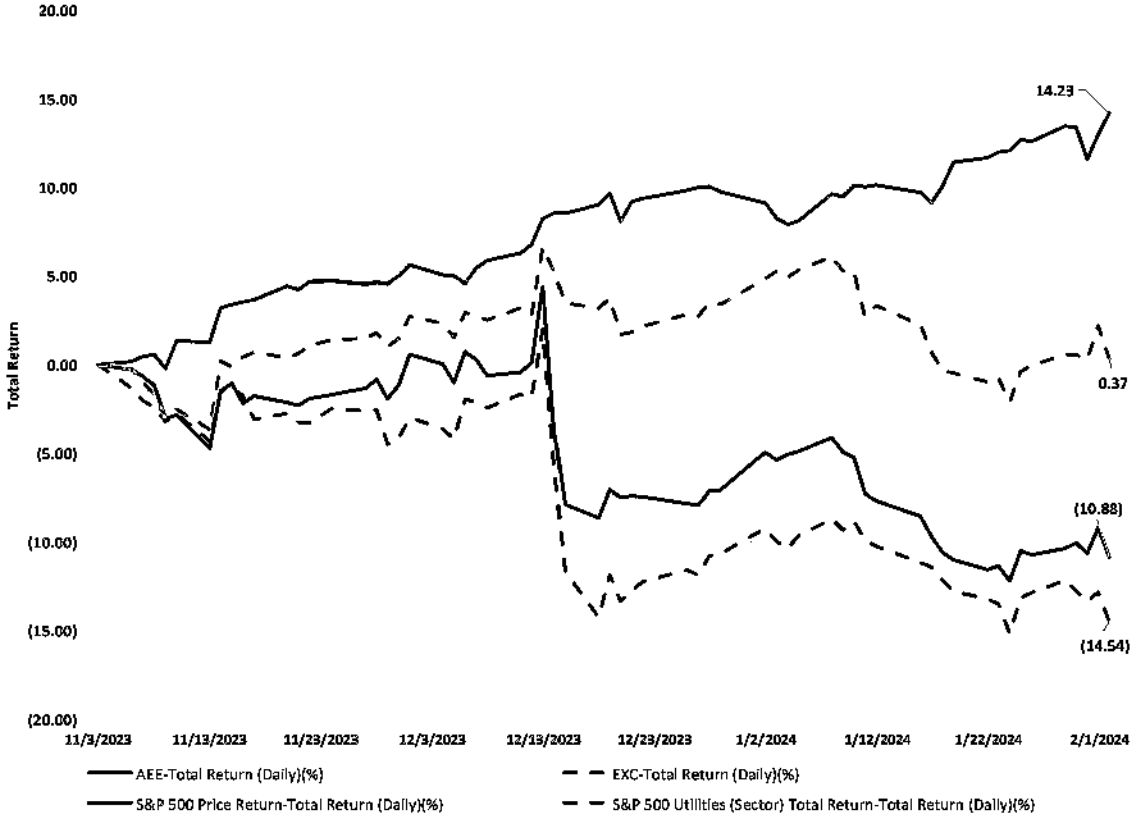
[13] Ill. Com. Comm'n Docket No. 23-0082, Order at 372, Findings and Ordering Paragraphs No. 6.

[14] Ill. Com. Comm'n Docket No. 23-0055, Order at 320, 470, Findings and Ordering Paragraphs No. 6.

[15] Allison Good, *Ameren, Exelon shares fall after Illinois regulators reject grid plans*, Platts (Dec. 15, 2023).

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.[16] Further, as shown in Figure AEB-2**Error! Reference source not found.**, their stock prices have continued to underperform the S&P 500 Utilities index since that time.

Figure AEB-3: AEE and EXC Stock Price Performance following IL Rate Decisions



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:

[16] Yahoo! Finance: Ameren Corporation (AEE) (Dec. 14, 2023); Yahoo! Finance: Exelon Corporation (EXC) (Dec. 14, 2023).

- 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."[17] 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."[18]
- 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 EXC operates."[19]
- Wells Fargo stated that it was not mincing words, the ICC's orders were "onerous," and:

> 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.[20]

- 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.[21] While BofA

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[17] Barclays, *AEE/EXC: Coal Stocking-Stuffer in Illinois* (Dec. 14, 2023).

[18] *Id.*

[19] UBS, *First Read Exelon Corp., Negative Rate Case Outcome – Rating and PT Under Review* (Dec. 14, 2023).

[20] Wells Fargo, *The ICC Delivers a Lump of Coal for AEE & EXC* (Dec. 14, 2023).

[21] BofA Securities, *Ameren Corporation: Illinois delivers downside surprise* (Dec. 15, 2023).

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.[22]

- After the decisions, Guggenheim questioned, "Is Illinois Becoming the Next Connecticut?"[23] 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."[24]
- 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.[25]

Q: WHAT ARE YOUR CONCLUSIONS REGARDING REGULATORY GUIDELINES?

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 the Company with a reasonable opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure its

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[22] *Id.*

[23] Guggenheim, *IL: Is Illinois Becoming the Next Connecticut? To Be Determined, but Taking a Neutral Stance on the State* (Dec. 15, 2023).

[24] *Id.*

[25] RRA Regul. Focus, *Concerning pattern of restrictive Ill. Rate actions prompts rankings revision* (Dec. 18, 2023).

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 the Company, which is in the best 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. While the ROE established in a rate proceeding is intended to be forward-looking, the analyst 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 the market conditions on these models when determining an appropriate range for the ROE, and the ROE to be used for ratemaking purposes for a future period. If investors do not expect current market conditions to be sustained in the future, it is possible that the cost of equity estimation models will not provide an accurate estimate

of investors' required return during that rate period. Therefore, it is very important to consider projected market data to estimate the return for that forward-looking period.

Q: WHAT FACTORS 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 affected by several factors in the current and prospective capital markets, including: (1) changes in monetary policy; (2) relatively high inflation; and (3) increased 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. Inflationary Expectations in Current and Projected Capital Market Conditions

Q: WHAT HAS THE LEVEL OF INFLATION BEEN OVER THE PAST FEW YEARS?

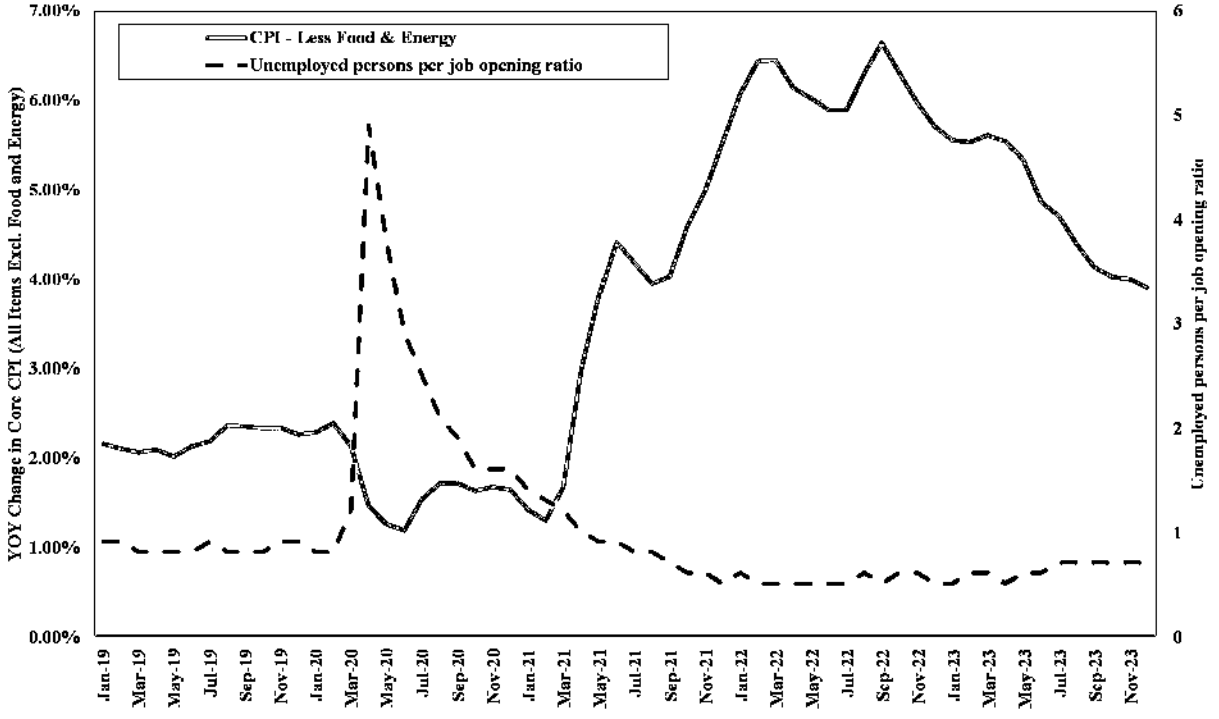
A. As shown in Figure AEB-4, core inflation increased steadily beginning in early 2021, rising from 1.41 percent in January 2021 to a high of 6.64 percent in September 2022. This was the largest 12-month increase since 1982.[26] While core inflation has declined in response to the Federal Reserve's monetary policy since September 2022, it continues to remain above the Federal Reserve's target level of 2.0 percent.

In addition, as shown in Figure AEB-4, I have also considered the ratio of unemployed persons per job opening, which is currently 0.7 and has been consistently

[26] Figure AEB-4 presents 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. I considered core inflation 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 and unpredictable.

below 1.0 since 2021, despite the Federal Reserve's accelerated policy normalization. This metric indicates sustained strength in the labor market. Further, the January 2024 jobs report showed that the U.S economy added 353,000 jobs in that month, which was significantly higher than the expectation, demonstrating the strength of the economy.[27] Given the Federal Reserve's dual mandate of maximum employment and price stability, the continued increased levels of core inflation coupled with the strength in the labor market has resulted in the Federal Reserve's sustained focus on the priority of reducing inflation.

Figure AEB-4: Core Inflation and Unemployed Persons-to-Job Openings, January 2019 to January 2024[28]



[27] CNN Business, *Another shockingly good jobs report shows America's economy is booming* (Feb. 2, 2024), https://www.cnn.com/business/live-news/jobs-report-january-02-02-24/index.html.

[28] Bureau of Labor Statistics.

Q: WHAT ARE THE EXPECTATIONS FOR INFLATION OVER THE NEAR-TERM?

A. The Federal Reserve has indicated that it expects inflation will remain elevated above its target level until 2026 and that the extent to which it maintains the restrictive monetary policy will depend on market indicators going forward. For example, Federal Reserve Chair Powell at the Federal Open Market Committee ("FOMC") meeting on December 13, 2023 observed that while inflation is off of its recent highs, it remains too high and noted that further policy firming is possible based on the data:

> Today, we decided to leave our policy interest rate unchanged and to continue to reduce our securities holdings. Given how far we have come, along with the uncertainties and risks that we face, the Committee is proceeding carefully. We will make decisions about the extent of any additional policy firming and how long policy will remain restrictive based on the totality of the incoming data, the evolving outlook, and the balance of risks.[29]

Chair Powell reiterated that the FOMC was committed to bringing inflation down to the 2 percent target level, and that while the easing of inflation has been good news, it is currently projected to take until 2026 to reach the Federal Reserve's target of 2.0 percent:

> Inflation has eased over the past year but remains above our longer-run goal of 2 percent. Based on the Consumer Price Index and other data, we estimate that total PCE [*Personal Consumption Expenditures*] prices rose 2.6 percent over the 12 months ending in November; and that, excluding the volatile food and energy categories, core PCE prices rose 3.1 percent. The lower inflation readings over the past several months are welcome, but we will need to see further evidence to build confidence that inflation is moving down sustainably toward our goal. Longer-term inflation expectations appear to remain well anchored, as reflected in a broad range of surveys of households, businesses, and forecasters, as well as measures from financial markets. As is evident from the SEP [*Summary of Economic Projections*], we anticipate that the process of getting inflation all the way to 2 percent will take some time. The median

[29] Bd. of Governors of the Fed. Rsrv. Sys., *Transcript of Chair Powell's Press Conference* at 1 (Dec. 13, 2023).

> projection in the SEP is 2.8 percent this year, falls to 2.4 percent next year, and reaches 2 percent in 2026.[30]

Chair Powell noted that the FOMC members project a gradual decline in the federal funds rates over time, although they remain cautious and leave open the possibility of further monetary policy tightening as required:

> While we believe that our policy rate is likely at or near its peak for this tightening cycle, the economy has surprised forecasters in many ways since the pandemic, and ongoing progress toward our 2 percent inflation objective is not assured. We are prepared to tighten policy further if appropriate. We are committed to achieving a stance of monetary policy that is sufficiently restrictive to bring inflation sustainably down to 2 percent over time, and to keeping policy restrictive until we are confident that inflation is on a path to that objective.
>
> In our SEP, FOMC participants wrote down their individual assessments of an appropriate path for the federal funds rate based on what each participant judges to be the most likely scenario going forward. While participants do not view it as likely to be appropriate to raise interest rates further, neither do they want to take the possibility off the table. If the economy evolves as projected, the median participant projects that the appropriate level of the federal funds rate will be 4.6 percent at the end of 2024, 3.6 percent at the end of 2025, and 2.9 percent at the end of 2026, still above the median longer-term rate. These projections are not a Committee decision or plan; if the economy does not evolve as projected, the path for policy will adjust as appropriate to foster our maximum employment and price stability goals.[31]

On January 31, 2024, the FOMC concluded their meeting with a unanimous decision to leave the federal funds rate unchanged. In his speech following that meeting, Chair Powell indicated that inflation was still too high and added that a March cut is "not the most likely" or "base case" scenario.[32] Since that time, the following data has been released demonstrating the unexpected strength in the U.S. economy:

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[30] *Id.* at 2-3.

[31] *Id.* at 3-4.

[32] Bd. of Governors of the Fed. Rsrv. Sys., *Transcript of Chair Powell's Press Conference* at 16 (Jan. 31, 2024).

- Gross Domestic Product increased in the fourth quarter of 2023 by 3.3 percent, which exceeded the expectation of 2.0 percent. This followed an increase of 4.9 percent in the third quarter of the year.[33]
- U.S. employers added 353,000 jobs in January, far exceeding forecasts. Further, revised 2023 data indicated that 2023 was stronger than previously reported.[34]
- The unemployment rate remained at 3.7 percent, and has been below 4.0 percent for 24 months.[35]
- Average hourly earnings increased 0.6 percent in January 2024, up 4.5 percent year-over-year.[36]

Therefore, it is clear that the timing and nature of any cuts are speculative at this time.

B. The Use of Monetary Policy to Address Inflation

Q: WHAT POLICY ACTIONS HAS THE FEDERAL RESERVE ENACTED TO RESPOND TO INCREASED INFLATION?

A. The dramatic increase in inflation 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. Beginning in March 2022 and through May 3, 2023, 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 5.00 percent to 5.25 percent.[37] 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

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[33] *See, e.g.*, Jeff Cox, *The U.S. economy grew at a blistering 3.3% pace in Q4 while inflation pulled back*, CNBC (Jan. 25, 2024).

[34] *See, e.g.*, Lydia DePillis, *Job Market Starts 2024 With a Bang*, N.Y. Times (Feb. 2, 2024), https://www.nytimes.com/2024/02/02/business/economy/jobs-report-january-2024.html.

[35] *Id.*

[36] *Id.*

[37] Bd. of Governors of the Fed. Rsrv. Sys., *Policy Tools: Open Market Operations*, https://www.federalreserve.gov/monetarypolicy/openmarket.htm (last visited Feb. 11, 2024).

federal funds rate at a restrictive level in order to achieve its goal of 2 percent inflation over the long-run.

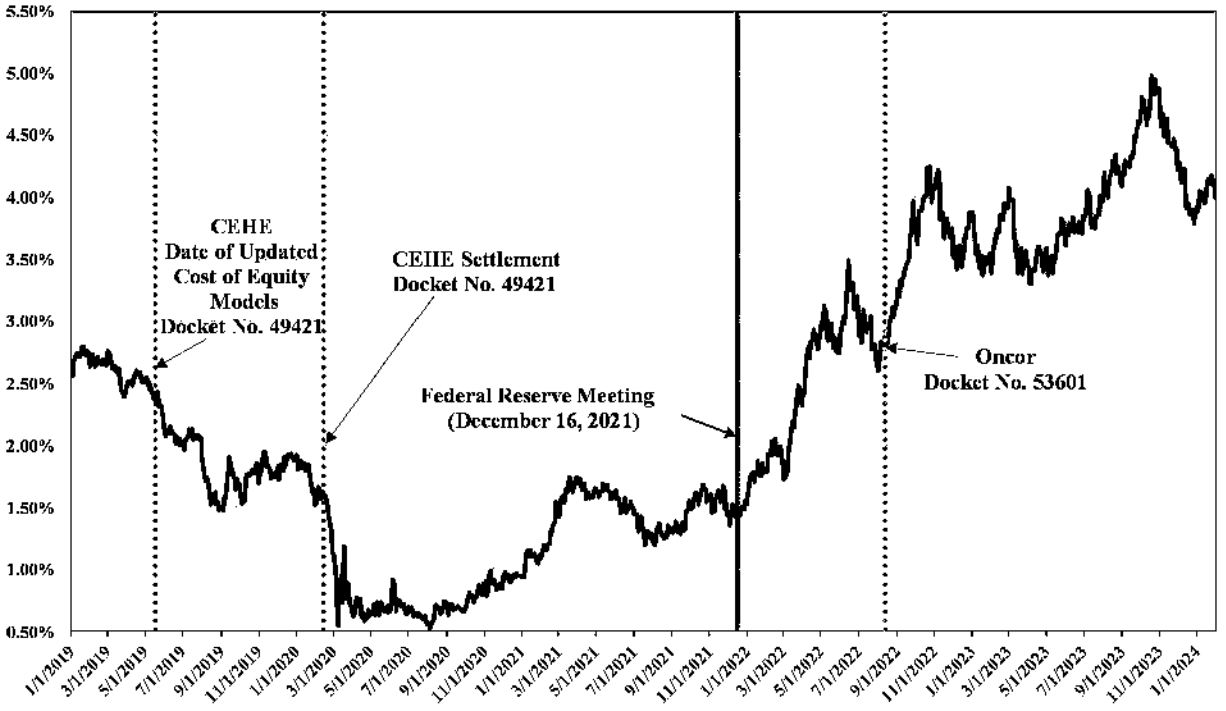
C. The Effect of Inflation and Monetary Policy on Interest Rates and the Investor-Required Return

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, longer-term interest rates have also increased. As shown in Figure AEB-5, since the Federal Reserve's December 2021 meeting, the yield on 10-year Treasury bonds has nearly tripled, increasing from 1.47 percent on December 15, 2021 to 3.99 percent at the end of January 2024. Similarly, the yield on the 10-year Treasury bond has also increased substantially since (1) the Company's updated cost of equity analyses were conducted in its last rate proceeding; (2) the Commission approved the settlement in that case; and (3) Oncor's rebuttal testimony in Docket No. 53601.[38] Inflation and the Federal Reserve's normalization of monetary policy are expected to result in long-term interest rates remaining relatively high over at least the next year.

[38] Docket No. 53601, Rebuttal Testimony of Dylan W. D'Ascendis at 5, 7 (Sept. 16, 2022) (updating Oncor's ROE analyses as of August 12, 2022).

Figure AEB-5: 10-Year Treasury Bond Yield, January 2019 – January 2024[39]



Specifically, as shown in Figure AEB-6, the 30-year Treasury bond yield averaged approximately 3.0 percent at the time the Company filed its updated cost of equity analyses in its 2019 rate proceeding, as well as when Oncor updated its cost of equity analyses in its 2022 rate proceeding. However, since both of those proceedings, long-term interest rates have increased substantially to 4.19 percent, or an increase of approximately 120 basis points. 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 Commission's decision on the settlements in the last rate proceeding, although inflation remains above the Federal Reserve's long-term target value of 2.0 percent.

[39] S&P Capital IQ Pro.

Figure AEB-6: Change in Market Conditions Since the Company's Last Rate Case

Docket	Date	Federal Funds Rate	30-Day Avg of 30-Year Treasury Bond Yield	Core Inflation Rate	Auth'd ROE
Docket No. 49421	5/17/2019	2.39%	2.92%	2.01%	9.40%
Docket No. 53601	8/12/2022	2.33%	3.08%	6.30%	9.70%
Current	1/31/2024	5.33%	4.19%	3.90%	

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, in the most recent Big Money poll released by *Barron's* in October 2023, which surveys money managers regarding the outlook for the next twelve months, two-thirds of the money managers surveyed expect the yield on the 10-year Treasury bond to be at least 4.50 percent in October 2024.[40] Similarly, 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 3.80 percent and 4.00 percent, respectively, through the second quarter of 2025.[41] Therefore, investors expect interest rates to remain elevated for at least the next 15 months. As a result, it is reasonable to expect that if government bond yields remain elevated, the cost of equity will remain materially higher than at the time of the Company's last rate proceeding.

[40] Nicholas Jasinski, *Big Money Pros Are Split on the Outlook for Stocks. But They Are Fans of Bonds*, Barron's (Oct. 27, 2023), https://www.barrons.com/articles/big-money-poll-stock-market-bonds-economy-outlook-375aebae.

[41] 43(2) Blue Chip Fin. Forecasts at 2 (Feb. 1, 2024).

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

Q: ARE UTILITY SHARE PRICES CORRELATED TO CHANGES IN THE YIELDS ON LONG-TERM GOVERNMENT BONDS?

A. Yes. Interest rates and utility share prices are inversely correlated which means, for example, that an increase in interest rates will result in a decline in the share prices of utilities. For example, Goldman Sachs and Deutsche Bank examined the sensitivity of share prices of different industries to changes in interest rates over the past five years. Both Goldman Sachs and Deutsche Bank found that utilities had one of the strongest negative relationships with bond yields (*i.e.*, increases in bond yields resulted in the decline of utility share prices).[42]

Q: HOW DID THE UTILITY SECTOR PERFORM IN 2023?

A. As interest rates increased substantially in 2023, the valuations of utilities declined substantially. From January 1, 2023 through January, 2024, the S&P 500 Index increased approximately 25.9 percent, while the S&P 500 Utilities Index decreased by approximately 13.8 percent.[43]

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. For example, Fidelity Investments classifies the utility sector as underweight,[44] and

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

[43] S&P Capital IQ Pro.

[44] Fid. Invs., *Fourth Quarter 2023: Investment Research Update* (Oct. 19, 2023).

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.[45] Moreover, the 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.[46]

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 lower than the yields on long-term government bonds. To illustrate this point, I 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 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.

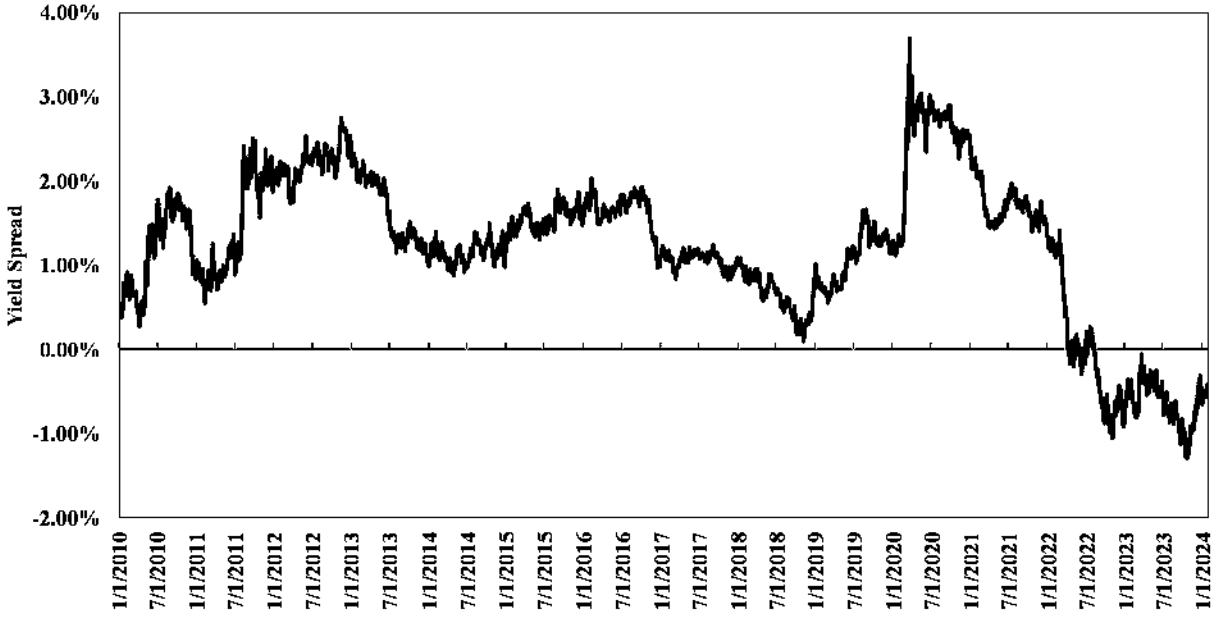
As shown in Figure AEB-7, the recent significant increase in long-term government bonds yields has resulted in the yield on long-term government bonds exceeding the dividend yields of utilities. Specifically, the yield spread as of January 31, 2024 was negative 0.42 percent, meaning that the yield on the 10-year Treasury bond exceeds the dividend yield for the S&P Utilities Index. However, the long-term average yield spread

[45] Julien Dumoulin-Smith *et al., US Electric Utilities & IPPs: As the leaves fall, preparing for Autumn utility outlook. Macro still has potholes, BofA Securities* (Sept. 6, 2023).

[46] Nicholas Jasinski, *Big Money Pros Are Split on the Outlook for Stocks. But They Are Fans of Bonds,* Barron's (Oct. 27, 2023). https://www.barrons.com/articles/big-money-poll-stock-market-bonds-economy-outlook-375acbac.

from 2010 to January 2024 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 may continue to underperform in 2024. 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 into government bonds given the yields on long-term government bonds remain elevated and higher than utility dividend yields, thus resulting in a decrease in the share prices of utilities.

Figure AEB-7: Spread between the S&P Utilities Index Dividend Yield and the 10-year Treasury Bond Yield, January 2010 – January 2024[47]



[47] S&P Capital IQ Pro; Bloomberg Professional.

E. Conclusion of Capital Market Conditions

Q: WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECT OF CURRENT MARKET CONDITIONS ON THE COST OF EQUITY FOR THE COMPANY?

A. Due to their impact on the 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 persistently high inflation and the Federal Reserve's changes in monetary policy that have increased interest rates indicate that the cost of equity has increased since the Company's last rate proceeding given that (1) 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 (2) 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. Because the cost of equity has increased since the Company's last rate proceeding, 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 the Company's rates will be in effect. Therefore, these current and expected market conditions support the Commission's consideration of the higher end of the range of cost of equity results produced by the DCF models, and warrant consideration of forward-looking cost of equity estimation models such as the CAPM and ECAPM that better reflect expected market conditions.

V. PROXY GROUP SELECTION

Q: PLEASE PROVIDE A BRIEF PROFILE OF CENTERPOINT HOUSTON.

A. CenterPoint Houston is an electric transmission and distribution company that is an indirect wholly owned subsidiary of CNP. CenterPoint Houston transmits and distributes electricity on behalf of 65 retail electric providers ("REP") to approximately 2.76 million metered customers in the Houston/Galveston metropolitan area near the Texas gulf coast.[48] CenterPoint Houston currently is rated BBB+ (outlook: Stable) by S&P,[49] Baa1 (outlook: Stable) by Moody's,[50] and BBB+ (outlook: Stable) by FitchRatings.[51]

Q: PLEASE DESCRIBE CNP.

A. CNP is a public utility holding company with indirect, wholly owned subsidiaries that own and operate electric generation, transmission, and distribution facilities, as well as natural gas distribution facilities, in various states across the U.S. CNP currently has an investment grade long-term rating of BBB+ (Outlook: Stable) from S&P, Baa2 (Outlook: Stable) from Moody's,[52] and BBB by FitchRatings.[53]

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[48] CenterPoint Energy, Inc., Annual Report (Form 10-K) (Feb. 20, 2024).

[49] S&P Rating as of April 26, 2023.

[50] Moody's long-term issuer rating as of January 11, 2024.

[51] FitchRatings as of August 15, 2023.

[52] S&P Capital IQ Pro, rating as of February 1, 2019; Moody's Investors Service, long-term issuer rating as of December 3, 2020, last update to credit analysis October 12, 2023.

[53] FitchRatings, *Fitch Affirms CenterPoint Energy, CEHE and CERC; Outlook Stable* (Aug. 15, 2023), https://www.fitchratings.com/research/corporate-finance/fitch-affirms-centerpoint-energy-cehe-cerc-outlook-stable-15-08-2023.

Q: WHY HAVE YOU USED A GROUP OF PROXY COMPANIES TO ESTIMATE THE COST OF EQUITY FOR THE COMPANY?

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

Even if CenterPoint Houston were a publicly-traded entity, it is possible that transitory events could bias its market value over a given period. A significant benefit of using a proxy group is that it 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 CenterPoint Houston, and, therefore, provide a reasonable basis to estimate the appropriate cost of equity for the Company.

Q: HOW DO YOU SELECT THE COMPANIES IN YOUR PROXY GROUP?

A. I have developed a set of screening criteria to select a proxy group of companies that align with the financial and operational characteristics of CenterPoint Houston and that investors would view as comparable to the Company. I began with the group of 36 companies that *Value Line Investment Survey* ("*Value Line*") classifies as Electric Utilities and applied the following screening criteria to select companies that:

- pay consistent quarterly cash dividends because such companies can be analyzed using the constant growth DCF model;

- have investment grade long-term issuer ratings from S&P and/or Moody's;
- are covered by at least two utility industry analysts;
- have positive long-term earnings growth forecasts from at least two utility industry equity analysts;
- derive more than 60.00 percent of their total operating income from regulated operations;
- derive more than 80.00 percent of their total regulated operating income from regulated electric operations; and
- were not parties to a merger or transformative transaction during the analytical periods relied on or did not have a material event that would have affected the market data for the company.

Q: HOW DID YOU DETERMINE THAT THESE ARE THE APPROPRIATE SCREENING CRITERIA TO APPLY TO YOUR INITIAL LIST OF VALUE LINE ELECTRIC UTILITIES?

A. The screening criteria and thresholds for each screen are widely-used in the regulated utility industry. They are designed to ensure that the proxy group is of sufficient size to generate a reasonable cost of equity measurement and to ensure that the individual proxy group companies are comparable in business and financial risk to the utility whose rates are at issue.

Q: WHAT IS THE COMPOSITION OF YOUR PROXY GROUP?

A. The screening criteria just discussed results in a proxy group consisting of the companies shown in Figure AEB-8 (and also in Exhibit AEB-3).

Figure AEB-8: Proxy Group

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Duke Energy Corporation	DUK
Edison International	EIX
Entergy Corporation	ETR
Eversource Energy	ES
Evergy, Inc.	EVRG
IDACORP, Inc.	IDA
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE
Pinnacle West Capital Corporation	PNW
Portland General Electric Company	POR
Xcel Energy Inc.	XEL

VI. COST OF EQUITY ESTIMATION

Q: PLEASE BRIEFLY DISCUSS THE ROE IN THE CONTEXT OF A REGULATED RATE OF RETURN.

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

Q: HOW IS THE REQUIRED COST OF EQUITY DETERMINED?

A. The required cost of equity is estimated by using analytical techniques that rely on market-based data to quantify investor expectations regarding equity returns, adjusted for

certain incremental costs and risks. Informed judgment is then applied to determine where the Company's cost of equity falls within the range of results produced by multiple analytical techniques. The key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' views of the financial markets in general, as well as the subject company in the context of the proxy group, in particular.

Q: WHAT METHODS DO YOU USE TO ESTABLISH YOUR RECOMMENDED ROE IN THIS PROCEEDING?

A. I consider the results of the constant growth DCF model, the CAPM model, the ECAPM model, and a BYRP approach. Each of these methodologies are explained briefly below and in more detail in Appendix A. 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[54] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[55] recommend the CAPM, DCF, and BYRP approaches.

Q: IS IT IMPORTANT GIVEN CURRENT MARKET CONDITIONS TO USE MORE THAN ONE ANALYTICAL APPROACH?

A. Yes. As discussed previously, interest rates have increased substantially over the past two years and are expected to remain elevated over at least the next year from the lows seen during the COVID-19 pandemic. While the share prices of utilities have declined, the negative yield spread is an indication that utility share prices have not declined sufficiently to account for the recent rise in interest rates. As a result, equity analysts expect the utility sector to continue to underperform over the next year, and thus it is reasonable to conclude that the DCF model is likely understating the forward-looking cost of equity because the model relies on historical share prices to calculate the dividend yield.

These recent changes in market conditions highlight the benefit of using multiple models since each model relies on different assumptions, certain of which better reflect current and projected market conditions at different times. As discussed previously, the CAPM, ECAPM, and BYRP analyses offer some balance through the use of projected market data. 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 when the Company's rates will be in effect.

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[54] Tom Copeland et al., *Valuation: Measuring and Managing the Value of Companies* at 214 (McKinsey & Co., Inc., 3d ed. 2000).

[55] Eugene F. Brigham & Louis C. Gapenski, *Financial Management: Theory and Practice* at 341 (Dryden Press 1994).

Q: HAS THE COMMISSION CONSIDERED THE RESULTS OF MULTIPLE COST OF EQUITY ESTIMATION MODELS IN DETERMINING AN APPROPRIATE ROE?

A. Yes. For example, when determining the cost of equity for Oncor in its most recent rate case, the Commission found that the results of the DCF model, the Risk Premium approach, and the CAPM supported the ROE that was ultimately approved by the Commission.[56]

Q: PLEASE BRIEFLY DESCRIBE THE DCF APPROACH.

A. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In the constant growth DCF, the cost of equity is defined as the sum of the expected dividend yield and the expected long-term growth rate that is assumed in perpetuity. To reduce the long-term growth rate to a single measure, one must assume that the payout ratio remains constant and that earnings per share, dividends per share, and book value per share all grow at the same constant rate. However, over the long run, dividend growth can only be sustained by earnings growth. Therefore, it is important to consider a variety of sources in arriving at a single projected long-term earnings growth rate for the constant growth DCF model.[57]

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 the sum of a risk-free rate of return plus a risk premium to compensate investors for the non-diversifiable or "systematic" risk of that security. Systematic risk is the risk inherent

[56] Docket No. 53601, Order on Rehearing, Finding of Fact No. 186 (Jun. 30, 2023).

[57] As discussed in Appendix 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 ("P/E") ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions are violated, considered judgment and/or specific adjustments should be applied to the results.

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. 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. In the CAPM, non-diversifiable risk is measured by a beta coefficient, which represents the risk of the security relative to the general market. Therefore, the CAPM is defined as the sum of a risk-free rate of return plus the beta coefficient multiplied by the market risk premium, which is further defined as the expected market return less the risk-free rate.

Q: DID YOU CONSIDER ANOTHER FORM OF THE CAPM IN YOUR ANALYSIS?

A. Yes. I have also considered the results of an ECAPM analysis. The ECAPM calculates the product of the 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. In essence, 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.

Q: PLEASE DESCRIBE THE BYRP APPROACH.

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium

over the return they would have earned as bondholders. In other words, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Thus, risk premium approaches estimate the cost of equity as the sum of the yield on a particular class of bonds and the equity risk premium. In my analysis, I use actual authorized returns for electric utilities as the historical measure of the cost of equity to determine the risk premium. When the authorized ROEs for 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.[58]

It is important to recognize both academic literature and market evidence indicating that the equity risk premium 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.

Q: WHAT ARE THE RESULTS OF YOUR COST OF EQUITY ANALYSES?

A. Figure AEB-9 summarizes the results of my cost of equity analyses.

[58] *See, e.g.*, S. Keith Berry, *Interest Rate Risk and Utility Risk Premia during 1982-93*, 19(2) Managerial & Decision Econ. 127 (Mar. 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*, 15 Fin. Mgmt. 58, 66 (1986).

Figure AEB-9: Summary of Analytical Results

	Constant Growth DCF		
	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Mean Results:			
30-Day Average	8.68%	9.92%	11.13%
90-Day Average	8.78%	10.02%	11.23%
180-Day Average	8.65%	9.89%	11.10%
Average	8.70%	9.94%	11.15%
Median Results:			
30-Day Average	8.70%	9.75%	10.84%
90-Day Average	8.80%	9.86%	10.90%
180-Day Average	8.63%	9.69%	10.63%
Average	8.71%	9.77%	10.79%

	CAPM / ECAPM / Bond Yield Risk Premium		
	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
CAPM:			
Value Line Beta	11.57%	11.56%	11.56%
Bloomberg Beta	10.61%	10.59%	10.59%
Long-term Avg. Beta	10.36%	10.34%	10.34%
ECAPM:			
Value Line Beta	11.73%	11.72%	11.72%
Bloomberg Beta	11.01%	11.00%	11.00%
Long-term Avg. Beta	10.83%	10.81%	10.81%
Bond Yield Risk Premium	10.36%	10.31%	10.31%

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 ELEVATED 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 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.[59]
>
> .....
>
> 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 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.[60]

Similarly, the Massachusetts Department of Public Utilities in a recent rate case for NSTAR Electric Company concluded that given the recent increase in interest rates there

[59] *Pennsylvania Public Utility Commission Bureau of Investigation and Enforcement v. Aqua Pennsylvania, Inc.*, Pa. Pub. Util. Comm'n Docket Nos. R-2021-3027385 and R-2021-3027386 (consol.), Opinion and Order at 154-155 (May 12, 2022).

[60] *Id.* at 177–178.

was "greater certainty" that the results of the DCF model were understating the cost of equity for the utility.[61]

Q: ARE THERE OTHER FACTORS THAT SHOULD BE CONSIDERED IN ESTIMATING THE MARKET COST OF EQUITY?

A. Yes. Consistent with what is done in determining the cost of debt, it is reasonable and appropriate to consider flotation costs in determining the cost of equity. Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for preparation, filing, underwriting, and other issuance costs. Flotation costs are part of the invested costs of the utility, which are properly reflected on the balance sheet under "paid in capital." They are not current expenses, and, therefore, are not reflected on the income statement. Rather, like investments in rate base or the issuance costs of long-term debt, flotation costs are incurred over time. As a result, the great majority of a utility's flotation cost is incurred prior to the test year but remains part of the cost structure that exists during the test year and beyond, and as such, should be recognized for ratemaking purposes.

Q: IS THE COMPANY REQUESTING RECOVERY OF FLOTATION COSTS IN THE ROE?

A. No. While the recovery of these costs is consistent with financial theory and provides the Company an opportunity to earn its authorized ROE, the Company recognizes that the Commission has not authorized the recovery of these costs in prior cases and is therefore not requesting recovery of flotation costs in this proceeding.

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[61] *Petition of NSTAR Electric Company, doing business as Eversource Energy, pursuant to G.L. c. 164, § 94 and 220 CMR 5.00, for Approval of a General Increase in Base Distribution Rates for Electric Service and a Performance-Based Ratemaking Plan*, Mass. Dep't of Pub. Utils. Docket No. D.P.U. 22-22, Order at 385–386 (Nov. 30, 2022).

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 THE COMPANY?

A. No. The model results provide only a range of the appropriate estimate of CenterPoint Houston's cost of equity. 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, discussed below, should be considered with respect to their overall effect on the Company's risk profile relative to the proxy group.

A. Capital Expenditures

Q: PLEASE SUMMARIZE THE COMPANY'S CAPITAL EXPENDITURE REQUIREMENTS.

A. The Company's current projection of capital expenditures for 2024 through 2028 totals approximately $12.8 billion,[62] which represents approximately 114 percent of the Company's approximate $11.2 billion in net utility plant as of December 31, 2022.[63]

Q: HOW DO CENTERPOINT HOUSTON'S CAPITAL EXPENDITURE REQUIREMENTS COMPARE TO THOSE OF THE PROXY GROUP COMPANIES?

A. As shown in Exhibit AEB-10, I have calculated the ratio of expected capital expenditures to net utility plant for CenterPoint Houston and each of the companies in the proxy group by dividing each company's projected capital expenditures for the period 2024-2028 by its

[62] CenterPoint Energy, Inc., Annual Report (Form 10-K) at 62 (Feb 20, 2024).

[63] CenterPoint Energy, Inc., Annual Report (Form 10-K) at 109 (Feb 17, 2023).

total net utility plant as of December 31, 2022. As shown, CenterPoint Houston's ratio of capital expenditures as a percentage of net utility plant is significantly higher than all of the proxy group companies.

Q: HOW IS THE COMPANY'S RISK PROFILE AFFECTED BY ITS SUBSTANTIAL CAPITAL EXPENDITURE REQUIREMENTS?

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

Q: DO CREDIT RATING AGENCIES RECOGNIZE THE RISKS ASSOCIATED WITH ELEVATED LEVELS OF CAPITAL EXPENDITURES?

A. Yes. 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.[64]

Recently, S&P evaluated the 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 through 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 management priorities and financial policy decisions, or utilities may be faced with another step down in the median ratings.[65]

CenterPoint Houston has a stable outlook from the credit rating agencies, and Moody's has noted the significant capital investment plans for the Company and the need to issue a

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[64] S&P Glob. Ratings, *Assessing U.S. Investor-Owned Utility Regulatory Environments* at 7 (Aug. 10, 2016)[CONFIDENTIAL].

[65] S&P Glob. Ratings, *Record CapEx Fuels Growth Along With Credit Risk For North American Investor-Owned Utilities* at 5, 7–8 (Sept. 12, 2023)[CONFIDENTIAL].

significant amount of debt relative to the Company's size. In addition, Moody's recognizes the use of distribution and transmission cost recovery mechanisms as important to increase revenue and cash flow. Finally, Moody's noted that the outcome of the current rate proceeding could have an effect on the Company's credit metrics. [66]

Q: WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECT OF THE COMPANY'S CAPITAL SPENDING REQUIREMENTS ON ITS RISK PROFILE AND COST OF CAPITAL?

A. The Company's capital expenditure requirements are significantly higher than its historical requirements and well above those of the proxy companies on a percentage of utility, and are expected to continue over the next few years. Accordingly, all else equal, the Company's substantial capital expenditure requirements indicate a higher risk relative to the proxy group.

B. Regulatory Risks

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.

[66] Moody's Invs. Serv., *Credit Opinion, CenterPoint Energy Houston Electric, LLC* at 4 (Jan. 11, 2024)[CONFIDENTIAL].

Utilities must finance their operations and thus require the opportunity to earn a reasonable return on their invested capital to maintain their financial profiles. The Company 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 on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

Equity investors require that the authorized return be adequate to provide a risk-comparable return on the equity portion of the utility's capital investments. Because equity investors are the residual claimants on the utility's cash flows (*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.[67] 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."[68] 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.[69]

Q: HOW DOES THE REGULATORY ENVIRONMENT IN WHICH A UTILITY OPERATES AFFECT ITS ACCESS TO AND COST OF CAPITAL?

A. The regulatory environment can significantly affect both the access to, and cost of, capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations."[70] Moody's has further highlighted the relevance of a

[67] Moody's Invs. Serv., *Rating Methodology: Regulated Electric and Gas Utilities* at 4 (Jun. 23, 2017).

[68] S&P Glob. Ratings, *Ratings Direct. U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others* at 2 (Jun. 25, 2018).

[69] *Id.* at 1.

[70] Moody's Invs. Serv., *Rating Methodology: Regulated Electric and Gas Utilities* at 6 (Jun. 23, 2017).

stable and predictable regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation."[71]

1. Recovery Mechanisms

Q: HAVE YOU CONDUCTED ANY ANALYSIS OF THE REGULATORY FRAMEWORK IN TEXAS RELATIVE TO THE JURISDICTIONS IN WHICH THE COMPANIES IN YOUR PROXY GROUP OPERATE?

A. Yes. I have evaluated the regulatory framework in Texas considering three factors that are important to provide a regulated utility an opportunity to earn its authorized ROE: (1) test year convention (*i.e.*, forecast vs. historical); (2) the use of rate design or other mechanisms that mitigate volumetric risk and stabilize revenue; and (3) the ability to recover capital costs between rate cases. The results of this regulatory risk assessment are shown in Exhibit AEB-11 and are summarized below.

Test Year Convention: CenterPoint Houston is proposing a historical test year, which means that its rates will be established based on historical costs. As shown in Exhibit AEB-11, approximately 41 percent of the utility operating subsidiaries of the companies in the proxy group have partially or fully forecasted test years. Forecasted test years result in more prompt recovery of incurred costs and thus mitigate the regulatory lag associated with historical test years. As Lowry, Hovde, Getachew, and Makos (2010) explain:

[71] *Id.*

> This report provides an in depth discussion of the test year issue. It includes the results of empirical research which explores why the unit costs of electric IOUs are rising and shows that utilities operating under forward test years realize higher returns on capital and have credit ratings that are materially better than those of utilities operating under historical test years. The research suggests that shifting to a future test year is a prime strategy for rebuilding utility credit ratings as insurance against an uncertain future.[72]

Non-Volumetric Rate Design/Revenue Stabilization: While CenterPoint Houston does recover a portion of its costs through a fixed customer charge, which is similar to many utility operating companies, and the Distribution Cost Recovery Factor ("DCRF") Rider, it does not have the same level of protection against volumetric risk as exists through straight fixed variable rate design, a revenue decoupling mechanism, or a formula rate plan.[73] As shown in Exhibit AEB-11, approximately 60 percent of the utility operating subsidiaries of the proxy group companies have implemented at least one of these more comprehensive mechanisms to provide protection against volumetric risk and provide revenue stabilization. Therefore, the Company has relatively greater risk that it may not be able to recover its fixed costs if customer usage is below the level projected in the rate proceeding, thereby increasing the risk that the Company would not be able to earn its authorized ROE.

Capital Cost Recovery: CenterPoint Houston does have capital tracking mechanisms to recover capital investment costs between rate cases. Specifically, the Company is able to recover qualifying capital costs through the following capital tracking mechanisms:

[72] Mark Newton Lowry et al., *Forward Test Years for US Electric Utilities* at 1 (Aug. 2010).

[73] The DCRF accounts for changes in customer growth but does not address all volumetric variability.

- DCRF Rider: provides for the ability to adjust rates up to twice per year to recover incremental changes in certain distribution capital costs, such as distribution plant; however these capital costs are subject to review for prudency and reasonableness in the next rate case. Further, this rider is only available for use if the Company is not earning its authorized ROE using weather-normalized data.
- Interim Transmission Cost of Service adjustment ("TCOS"): provides the Company the ability to adjust wholesale transmission rates to recover changes in invested capital, depreciation, and associated taxes that were not included in the Company's last rate proceeding.
- Temporary Emergency Electric Energy Facilities Rider ("TEEEF"): provides for the ability to recover the reasonable and necessary costs of leasing or procuring, owning, and operating TEEEF facilities; starting in 2021, the Company has leased approximately 500 MW of TEEEF, and the lease payments have been treated as capital leases.
- Resiliency Plan: provides the opportunity for the Company to propose a forward-looking capital plan specifically focused on resiliency investment outside of a rate case; however, the Company does not have an approved Resiliency Plan at this time.

Likewise, approximately 73 percent of the utility operating subsidiaries of the proxy group companies also have some form of capital cost recovery mechanism in place. The ability to begin to earn a return on and of capital between rate proceedings provides the Company, as well as the vast majority of the proxy group companies, the ability to service the debt

and provide a return on equity on investments made between cases and provides a reasonable opportunity to earn its authorized ROE.

Q: HAVE YOU CONDUCTED ANY ADDITIONAL ANALYSES TO EVALUATE THE REGULATORY ENVIRONMENT IN TEXAS AS COMPARED TO THE JURISDICTIONS IN WHICH THE COMPANIES IN THE PROXY GROUP OPERATE?

A. Yes, I have conducted an additional analysis to compare the regulatory framework of Texas to the jurisdictions in which the companies in the proxy group operate by evaluating the jurisdictional regulatory rankings published by RRA. RRA evaluates the regulatory environment from an investor perspective, considering the relative regulatory risk associated with ownership of securities issued by the companies that are regulated in each jurisdiction. RRA considers several factors that affect the regulatory process including gubernatorial, legislative and court activity, rate case decisions and other regulatory decisions, and information obtained through contact with commissioners, staff, company, and government outreach.

Q: PLEASE EXPLAIN HOW YOU USED THE RRA RANKINGS TO COMPARE THE REGULATORY JURISDICTIONS OF THE PROXY GROUP COMPANIES TO THE COMPANY.

A. RRA assigns a ranking for each regulatory jurisdiction as "Above Average", "Average" or "Below Average", and then within each of those categories, a numeric ranking from 1 to 3. Thus, there are a total of nine RRA rankings, with the rankings for each jurisdiction ranging from "Above Average/1", which is considered the most supportive, to "Below Average/3," which is the least supportive. I have applied a numeric ranking system to the

RRA rankings with "Above Average/1" assigned the highest ranking (*i.e.*, a "1") and "Below Average/3" assigned the lowest ranking (*i.e.*, a "9").

As shown on Schedule AEB-12, RRA's jurisdictional ranking for Texas is "Average / 3," which is the sixth of the nine tiers (*i.e.*, a "6"), meaning that RRA views Texas as slightly below the average in terms of regulatory supportiveness across the United States. In comparison, the proxy group average RRA ranking is between "Average/1" and "Average/2" (*i.e.*, a "4.90"), which means that the Company is viewed by RRA as having greater regulatory risk relative to the proxy group. RRA notes the use of historical test periods, recovery mechanisms that rely on historical test years, and after-the-fact prudence reviews that leave open the possibility of disallowances, and the length of rate proceedings as exacerbating regulatory lag.[74]

Q: HOW DID YOU CONDUCT YOUR ANALYSIS OF THE S&P CREDIT SUPPORTIVENESS?

A. For credit supportiveness, S&P classifies each regulatory jurisdiction into five categories that range from "Credit Supportive" to "Most Credit Supportive." My analysis of the credit supportiveness of the regulatory jurisdictions in which the proxy companies operate relative to the Company's regulatory jurisdiction is similar to the analysis of the RRA overall regulatory ranking just discussed. Specifically, I assign a numerical ranking to each of S&P's categories, from Most Credit Supportive ("1") to Credit Supportive ("5"). As shown in Schedule AEB-13, the proxy group average ranking is 2.52, which would be classified between "Very Credit Supportive" and "Highly Credit Supportive," while the

[74] RRA Commission overview, accessed as of November 15, 2023.

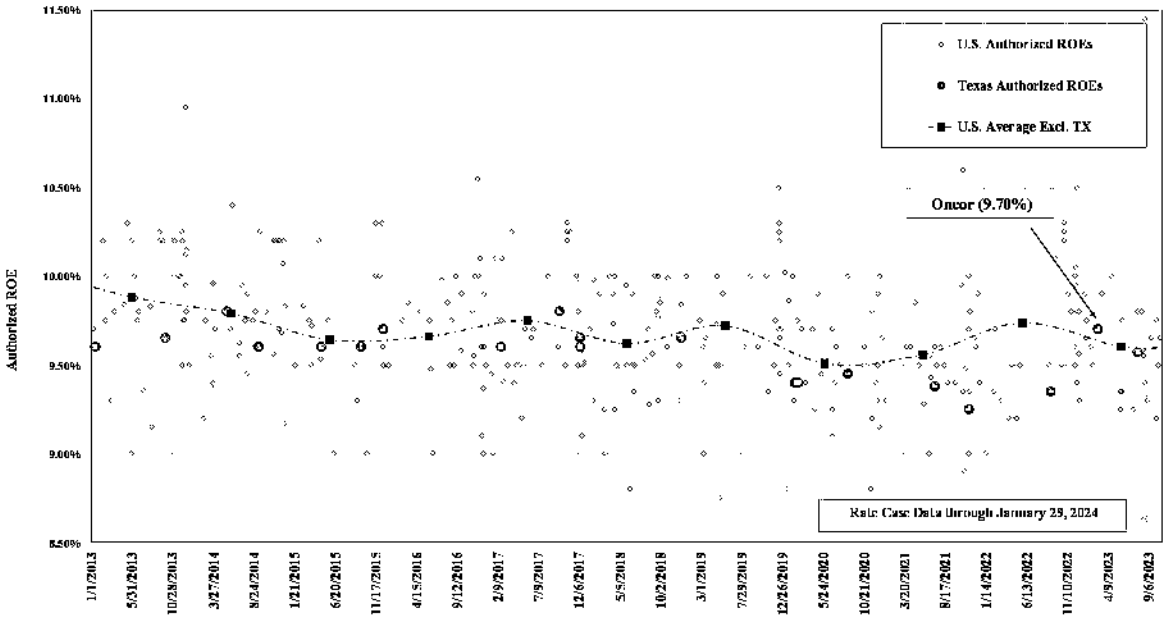
Company's rank is lower at "Very Credit Supportive" ("3"), which suggests that investors perceive regulation for the Company as below average relative to the proxy group.

2. Authorized ROEs

Q: HOW DO THE RETURNS THAT HAVE BEEN AUTHORIZED IN TEXAS COMPARE TO THE AUTHORIZED RETURNS IN OTHER JURISDICTIONS?

A. Figure AEB-10 shows the authorized returns for electric utilities in Texas and other jurisdictions throughout the United States over the past decade. As shown, but for the 9.70 percent authorized ROE for Oncor in its fully litigated rate proceeding in Docket No. 53601, the authorized returns for electric utilities in Texas have consistently been below the national average since 2018.

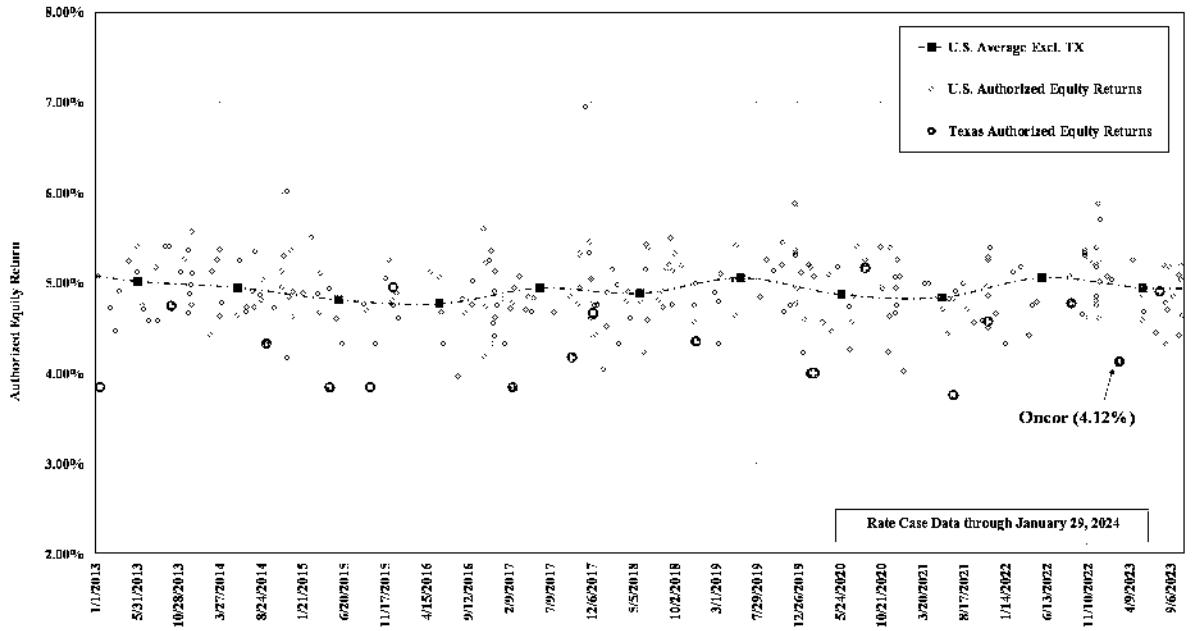
Figure AEB-10: Comparison of Texas and U.S. Authorized Electric Utility Returns[75]



As shown in Figure AEB-11, not only have electric utilities in Texas generally been authorized ROEs below the national average, but their weighted average authorized equity returns (*i.e.*, the authorized ROE multiplied by the authorized equity ratio) have also been well below the average across the country, indicating that the authorized capital structures in Texas are more highly leveraged than in other jurisdictions. Further, while the recently authorized ROE for Oncor was slightly above the national average, as shown in Figure AEB-11, taking into consideration the authorized equity ratio of 42.50 percent, which is significantly below the industry average authorized equity ratio, the authorized equity rate (authorized ROE multiplied by the authorized equity ratio), is one of the lowest authorized equity rate in 2023.

[75] S&P Capital IQ Pro. Electric rate case decisions from January 1, 2013, through October 31, 2023; includes electric distribution, electric transmission, and vertically integrated electric utility proceedings.

Figure AEB-11: Comparison of Texas and U.S. Authorized Equity Rate



Q: SHOULD THE COMMISSION BE CONCERNED ABOUT AUTHORIZING EQUITY RETURNS THAT ARE AT THE LOW END OF THE RANGE ESTABLISHED BY OTHER STATE REGULATORY JURISDICTIONS?

A. Yes. As noted previously, the Company must compete for capital within its own corporate structure. In the process of allocating its finite discretionary capital resources, it would be reasonable for CNP to consider the overall equity return of each of its subsidiaries. Additionally, CNP must in turn compete for capital with other utilities and businesses. As a result, placing CenterPoint Houston at the low end of authorized ROEs compared to utilities in other jurisdictions can negatively affect the Company's access to capital, which has even greater significance currently due to the Company's existing and projected need for substantial capital to fund its capital expenditure requirements.

Q: HOW ARE CREDIT RATING AGENCIES CURRENTLY VIEWING THE UTILITY SECTOR?

A. Credit rating agencies have indicated that the industry overall has increased risk. The agencies are also responding with close scrutiny of the financial coverage ratios of the sector. Therefore, it is critically important to consider these factors and to recognize that the investor-required cost of equity would be higher today than at the time of Commission decisions in the recent past.

Q: WAS THERE A NEGATIVE CREDIT RATING AGENCY REACTION TO THE COMPANY'S 2019 RATE DETERMINATION?

A. Yes. In 2020, Fitch Ratings downgraded the Company's Long-Term Issuer Default rating from A- to BBB+ and revised the rating outlook from Stable to Negative following an unfavorable outcome in the Company's 2019 rate case.[76]

Q: WAS THERE ALSO A NEGATIVE CREDIT RATING AGENCY RESPONSE TO THE ADMINISTRATIVE LAW JUDGE'S ("ALJ") PROPOSED DECISION IN THE MOST RECENT ONCOR PROCEEDING?

A. Yes. In late December 2022, an ALJ issued a proposed decision in Oncor's most recent rate proceeding in Docket No. 53601 that recommended a $61 million rate reduction when Oncor had proposed a $251 million rate increase. Moody's noted that the ALJ's proposed decision would be credit negative if adopted, and raised questions about the supportiveness of the regulatory environment in Texas.[77] After the proposed decision was issued,

[76] FitchRatings, *Fitch Downgrades CenterPoint Energy Houston Electric to BBB ; Affirms CNP; Outlooks Negative* (Feb. 19, 2020), https://www.fitchratings.com/research/corporate-finance/fitch-downgrades-centerpoint-energy-houston-electric-to-bbb-affirms-cnp-outlooks-negative-19-02-2020.

[77] Moody's Invs. Serv., *Oncor Electric Delivery Company LLC Administrative Law Judge's proposed decision on a pending rate case would be credit negative if implemented* (Jan. 6, 2023).

Moody's estimated that approximately 53 percent of the gap between Oncor's rate request and that of the proposed decision was due to a lower return on invested capital, which included a lower return on equity. Specifically, Moody's stated:

> The utility had requested an increase in its authorized return on equity (RoE) to 10.3% from 9.8% while the ALJs would reduce it to 9.3%, at the level previously recommended by the PUCT Staff. Such a reduction would be credit negative, particularly considering the recent rapid rise in interest rates, which could continue. The ALJs also recommended maintaining Oncor's current equity layer of 42.5% compared to the utility's request to increase the ratio to 45%. Moody's notes that the authorized equity layers of Texas transmission and distribution utilities, including Oncor, are relatively thin compared to other jurisdictions. All else equal, higher equity layers typically allow utilities to produce stronger financial metrics and enhance their financial flexibility, particularly if they are pursuing elevated capital expenditure programs.[78]

After the Commission issued its final decision in Oncor's rate case, Moody's found that while the utility continues to benefit from a credit supportive relationship with the Commission as evidenced by the "mostly credit supportive" outcome of the rate proceeding, this was offset by Oncor's weak authorized ROE and equity ratio that will contribute to deteriorating credit metrics when the utility is facing elevated investments:

> The PUCT reduced Oncor's authorized return to equity (RoE) to 9.7% from 9.8% after the utility requested 10.3%, a particular credit negative development in the wake of rising interest rates. In addition, Oncor's allowed 42.5% equity layer compares to the 45% level requested by the company and, while comparable to other ERCOT T&D peers, is among the lowest in the industry. The thicker debt ratio of 57.5% increases the utility's reliance on debt, putting it at a distinct disadvantage from a credit standpoint compared to non-ERCOT peers particularly considering the utility's material capital expenditures. The higher reliance on debt to fund its material investment program will contribute to a gradual deterioration in the utility's financial ratios below the 2020-2022 average levels.[79]

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[78] *Id.* at 1.

[79] Moody's Invs. Serv., *Oncor Electric Delivery Company LLC Update to credit analysis* at 5 (May 2, 2023).

Q: WHAT ARE YOUR CONCLUSIONS REGARDING THE PERCEIVED RISKS RELATED TO THE TEXAS REGULATORY ENVIRONMENT?

A. The regulatory framework in which a regulated utility provides service is one of the most important considerations for debt and equity investors. While there is constructive regulation in Texas, the authorized equity ratios are lower than the average for the utility operating companies of the proxy group, which results in greater financial risk for Texas regulated utilities. Further, authorized ROEs in Texas have been below the national average (excluding the recent Oncor decision). The more highly leveraged authorized capital structures increase risk for investment in equity in utility operating companies in Texas that increases the investor-required return. Based on my analysis, I conclude that the Texas regulatory framework has somewhat greater risk than the jurisdictions in which the utility operating subsidiaries of the proxy group companies provide service.

C. Customer Concentration

Q: HAVE YOU CONSIDERED ANY OTHER BUSINESS RISKS FACED BY CENTERPOINT HOUSTON?

A. Yes. I have also considered the risks related to CenterPoint Houston's overall customer concentration in terms of the market structure of the Electric Reliability Council of Texas ("ERCOT").

Q: HOW DOES THE MARKET STRUCTURE OF ERCOT IMPACT THE BUSINESS RISK OF THE COMPANY?

A. Unlike many other electric utilities in the proxy group, CenterPoint Houston's revenues from the distribution of electricity are collected from REPs. As of December 31, 2023, the

Company provided delivery service through 65 REPs.[80] A significant portion of CenterPoint Houston's revenues from REPs are from affiliates of NRG Energy Inc. and Vistra Energy Corp, which account for 39 percent and 20 percent of total REP revenues, respectively. While many electric utilities in the proxy group face default risk, the nature of this risk being spread out over thousands, if not millions, of customers mitigates this risk. However, CenterPoint Houston has a high degree of customer concentration, having only 65 REPs, and consequently, a relatively higher risk of suffering adverse financial effects following an event of delay or default of payment by one or more of these REPs.

Q: HAVE ANY REPS DEFAULTED IN THE PAST?

A. Yes, REP default over the past decade is not uncommon. In 2018, Breeze Energy entered financial default,[81] and in 2021, the Commission revoked the rights of four REPs after delay or default of payments following the February 2021 winter storm event.[82] In fact, in both 2021 and 2022, CenterPoint Houston recorded bad debt expenses resulting from the default of REPs on their obligation to pay delivery charges to the Company.[83]

Q: HAVE RECENT MARKET CONDITIONS INCREASED THE DEFAULT RISK FOR REPS?

A. Yes. The default risk for REPs has increased as a result of recent market conditions that have caused REPs to experience financial distress (*e.g.*, the February 2021 winter storm event; the impact of the COVID-19 pandemic; increased inflation; increased interest rates),

[80] CenterPoint Energy, Inc., Annual Report (Form 10-K) at 20 (Feb. 20, 2024).

[81] S&P Glob. Mkt. Intel., *Texas electricity retailer defaults, prompting switch of 9,800 customers* (Jun. 1, 2018).

[82] S&P Glob. Mkt. Intel., *With Texas electricity retailers 'dropping like flies,' an upstart expands* (Mar. 25, 2021).

[83] CenterPoint Energy, Inc., Annual Report (Form 10-K) at 19, 127 (Feb. 17, 2023).

which in turn has increased the risk that the Company will experience delay or default in REP payments. As just noted, the Commission recently revoked the rights of four REPs.

Q: HOW DOES CENTERPOINT HOUSTON'S CONCENTRATION RISK AFFECT ITS BUSINESS RISK?

A. Due to the Company's high concentration of customers among a small group of REPs, if just one of CenterPoint Houston's larger REPs were to delay or default its payment obligations, this could significantly impact the Company's financial condition. Furthermore, if a REP were to declare bankruptcy, there is no guarantee that the Company would be able to recover its obligations from the REP amongst the various other potential creditors that may be seeking to recover payments from that REP. This could lead to adverse impacts to CenterPoint Houston's cash flows, which could potentially be a significant risk to the Company's equity investors.

Q: ARE THERE MITIGATING FACTORS TO REDUCE THE IMPACT OF POTENTIAL REP PAYMENT DELAYS OR DEFAULTS?

A. Yes. In the event of a default, the Company's tariff provides a number of remedies, including that CenterPoint Houston may request that the Commission suspend or revoke the certification of that REP, which would then require those customers to be shifted to another REP or provider of last resort. However, the Company remains at risk for payments related to services provided to that REP prior to the Commission replacing the REP and, as outlined above, there is no guarantee that CenterPoint Houston will be able to recover those obligations.

Further, as discussed in the Direct Testimony of Company witness Kristie L. Colvin, while there is an opportunity to create a regulatory asset to recover bad debt in the

event of default of a REP, the regulatory asset provides only for future recovery of the debt, which still leaves the Company at risk for costs associated with carrying this regulatory asset until the next rate case and could create cash flow issues for the Company.

VIII. CAPITAL STRUCTURE

Q: IS THE CAPITAL STRUCTURE OF THE COMPANY AN IMPORTANT CONSIDERATION IN THE DETERMINATION OF THE APPROPRIATE ROE?

A. Yes. The equity ratio is a 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 the Company is secondary to debt holders. Therefore, the greater the debt service requirement, the less cash flow is available for common equity holders. To the extent the authorized equity ratio is below the Company's actual equity ratio, it is necessary to increase the authorized ROE to compensate investors for the greater financial risk associated with a lower equity ratio.

Q: WHAT IS CENTERPOINT HOUSTON'S PROPOSED CAPITAL STRUCTURE?

A. The Company is proposing a capital structure that is composed of 44.90 percent common equity and 55.10 percent long-term debt which is much more highly leveraged than the average of the utility operating subsidiaries of the proxy group companies.

Q: DID YOU CONDUCT ANY ANALYSIS TO DETERMINE IF THIS REQUESTED EQUITY RATIO WAS REASONABLE?

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

Q: PLEASE DISCUSS YOUR ANALYSIS OF THE CAPITAL STRUCTURES OF THE PROXY GROUP COMPANIES.

A. Specifically, I calculated the mean proportions of common equity, long-term debt and preferred stock over the past eight quarters for each of the companies in the proxy group at the operating subsidiary level. As shown in Schedule AEB-14, the equity ratios for the utility operating subsidiaries of the proxy group range from 41.04 percent to 61.15 percent, with an average of 52.42 percent. Based on the results of this analysis, the Company's proposed equity ratio of 44.90%, is just above the lowest equity ratio in the range and is approximately 740 basis points below the average equity ratio of the operating utilities of the proxy group companies. The higher leverage of the Company's proposed capital structure demonstrates significantly greater financial risk than the proxy group, on average.

As discussed previously, the increased leverage results in greater risk to equity investors, which are the last claimants in the event of a dissolution of a company. Accordingly, all else equal, this increased financial risk supports an ROE at the higher end of the range of cost of equity results.

Q: ARE THERE OTHER FACTORS TO BE CONSIDERED IN SETTING THE COMPANY'S CAPITAL STRUCTURE?

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

For example, while Moody's recently revised its 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, noting that constructive regulatory outcomes that promote timely cost recovery are a key factor in supporting utility credit quality.[84]

Likewise, while S&P also recently revised its outlook for the industry from negative to stable,[85] S&P continues to see significant risks in 2024 for the industry as a result of, among other things, inflation and increased levels of capital spending, and full electrification.[86] S&P has also concluded:

> The confluence of higher operating costs due to rising inflation, higher interest rates, storm restoration costs, increasing capital spending, and the recovery of previously deferred higher commodity costs, has resulted in growing rate case filings and increased rate rider recovery requests from state regulators. We expect to closely monitor the industry's ability to not just recover these rising costs but to do so in such a manner that minimizes the regulatory lag. However, given the impact of these higher costs to the customer bill, the industry's ability to effectively manage regulatory risk

[84] Moody's Invs. Serv., *Outlook: Outlook turns stable on low natural gas prices and credit-supportive regulation* (Sept. 7, 2023).

[85] S&P Glob. Ratings, *The Outlook for North American Regulated Utilities Turns Stable* at 8 (May 18, 2023).

[86] S&P Glob. Ratings, *Industry Credit Outlook 2024 - North American Regulated Utilities* (Jan. 9, 2024).

could become increasingly challenging, possibly pressuring its credit quality.[87]

FitchRatings has stated that it is maintaining 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. Fitch noted that bill affordability will remain a major issue for the industry that could affect future regulatory outcomes, and that while it expects authorized ROEs to start trending up with the increase in interest rates, albeit with a lag, given the uncertain macroeconomic environment and bill pressure on customers, the lag could be longer than in previous cycles.[88]

The credit ratings agencies' continued concerns over the negative effects of inflation, higher interest rates, and increased capital expenditures underscore the importance of maintaining adequate cash flow metrics for the Company in the context of this proceeding.

IX. COST OF LONG-TERM DEBT

Q: WHAT COST OF LONG-TERM DEBT HAS THE COMPANY REQUESTED IN THIS PROCEEDING?

A. As discussed in the Direct Testimony of Company witness Ms. Richert, the Company proposes a cost of long-term debt of 4.29 percent for ratemaking purposes.[89]

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[87] S&P Glob. Ratings, *Regulatory Friction Is Constraining Cost Recovery For North American Investor-Owned Utilities* at 8 (Nov. 6, 2023).

[88] FitchRatings, *North American Utilities, Power & Gas Outlook 2024* (Dec. 6, 2023), https://www.fitchratings.com/research/corporate-finance/north-american-utilities-power-gas-outlook-2024-06-12-2023.

[89] The cost of debt was evaluated against the Moody's utility benchmark indices. Because issuance costs are not included in the indices, the cost of debt considered was excluding the amortization of the issuance costs.

Q: HAVE YOU EVALUATED THE REASONABLENESS OF THE COMPANY'S PROPOSED COST OF LONG-TERM DEBT?

A. Yes, I have evaluated the embedded cost of the Company's long-term debt at the time of each issuance as compared to the cost of long-term debt in the market at that time as reflected by the yield on the Moody's A-rated and Baa- utility bond indices. As shown in Exhibit AEB-15, when comparing the utility bond yields to the Company's actual coupon rates at the time of issuance, this analysis demonstrates that the yields on the Company's long-term debt issuances have been generally within the range established by the yields on the Moody's A-rated and Baa-rated utility bond indices at the time of issuance. Thus, the Company's embedded cost of long-term debt is reasonable.[90]

X. CONCLUSIONS AND RECOMMENDATIONS

Q: WHAT IS YOUR CONCLUSION REGARDING A FAIR ROE FOR CENTERPOINT HOUSTON?

A. Based on the quantitative and qualitative analyses presented in my Direct Testimony and previously summarized in Figure AEB-9, and the business and financial risks of the Company as compared to the proxy group, an ROE of 10.60 percent is reasonable. As discussed in the Direct Testimony of Jason M. Ryan, taking into consideration the affordability for customers of the overall revenue requirement, the Company is requesting an ROE of 10.40 percent.

[90] The Moody's utility bond yields are calculated using a 30-day average as of the issued date of the debt instrument.

Q: WHAT ARE YOUR CONCLUSIONS REGARDING THE COMPANY'S REQUESTED CAPITAL STRUCTURE AND COST OF DEBT?

A. The Company's proposed capital structure is significantly higher leveraged than the average of the operating companies of the proxy group and therefore reflects greater overall financial risk than the proxy group companies. The Company's cost of debt for each issuance has generally been within the range established by the yield on the Moody's A and Moody's Baa rated utility bond indexes at the time of issuance and is therefore reasonable.

Q: WHAT IS YOUR CONCLUSION WITH RESPECT TO CENTERPOINT HOUSTON'S OVERALL RATE OF RETURN?

A. The Company's overall rate of return is summarized in Figure AEB-12. Given the reasonableness of the Company's requested cost of equity and cost of debt, and the highly leveraged capital structure, I conclude that the Company's proposed overall rate of return is conservative.

Figure AEB-12: Weighted Average Cost of Capital[91]

	Capital Structure	Cost	Weighted Average
Common Equity	44.90%	10.40%	4.67%
Long-Term Debt	55.10%	4.29%	2.36%
	100.00%		7.03%

Q: DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

[91] The cost of debt reflected in Figure AEB-11 includes interest and amortization costs.

APPENDIX A

A. Constant Growth DCF Model

Q: PLEASE DESCRIBE THE DCF APPROACH.

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

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

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:

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

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

Q: WHAT ASSUMPTIONS ARE REQUIRED FOR THE CONSTANT GROWTH DCF MODEL?

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

Q: WHAT MARKET DATA DO YOU USE TO CALCULATE THE DIVIDEND YIELD IN YOUR CONSTANT GROWTH DCF MODEL?

A. The dividend yield in my constant growth DCF model is based on the proxy group companies' current annual dividend and average closing stock prices over the 30-, 90-, and 180-trading days ended January 31, 2024.

Q: WHY DO YOU USE 30-, 90-, AND 180-DAY AVERAGING PERIODS?

A. I use an average of recent trading days to calculate the term P_0 in the DCF model to reflect current market data while also ensuring that the result of the model is not skewed by anomalous events that may affect stock prices on any given trading day.

Q: DO YOU MAKE ANY ADJUSTMENTS 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 long-term growth rate in perpetuity. In order to reduce the long-term growth rate to a single measure, one must assume that the dividend 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: WHAT SOURCES OF LONG-TERM GROWTH RATES DID YOU RELY ON IN YOUR CONSTANT GROWTH DCF MODEL?

A. My constant growth DCF model incorporates three sources of long-term earnings per share EPS growth rates: (1) *Zacks*; (2) Yahoo! Finance; and (3) *Value Line*.

Q: HOW DO YOU CALCULATE THE 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 proxy group companies. I use a similar approach to calculate a high-end result, using the maximum growth rate of the three sources for each proxy group company. 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 DCF ANALYSES?

A. Figure AEB-13 (and Exhibit AEB-4) summarizes the results of my DCF analyses. While I also summarize the DCF results using the minimum growth rates, given the expected continued underperformance of utility stocks which could cause the DCF model to understate the cost of equity, which, as noted, has been recognized by other regulatory commissions, it is appropriate to give these DCF results any material weight at this time.

Figure AEB-13: Discounted Cash Flow Results

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Mean Results:			
30-Day Average	8.68%	9.92%	11.13%
90-Day Average	8.78%	10.02%	11.23%
180-Day Average	8.65%	9.89%	11.10%
Average	8.70%	9.94%	11.15%
Median Results:			
30-Day Average	8.70%	9.75%	10.84%
90-Day Average	8.80%	9.86%	10.90%
180-Day Average	8.63%	9.69%	10.63%
Average	8.71%	9.77%	10.79%

B. CAPM and ECAPM Analysis

Q: PLEASE BRIEFLY DESCRIBE THE CAPM.

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

The CAPM is defined by four components:

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

Where:

K_e = the required market ROE;

β = the beta coefficient of an individual security;

r_f = the risk-free rate of return; and

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

In 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. Non-diversifiable risk is measured by beta, which 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 DO YOU USE IN YOUR CAPM ANALYSIS?

A. As shown on Exhibit AEB-5, I rely on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year Treasury bonds;[92] (2) the average projected 30-year Treasury yield for the second quarter of 2024 through the second quarter of 2025;[93]

[92] Bloomberg Professional as of January 31, 2024.

[93] 43(2) Blue Chip Fin. Forecasts at 2 (Feb. 1, 2024).

and (3) the average projected 30-year Treasury bond yield for the period 2025 through 2029.[94]

Q: WHAT BETA COEFFICIENTS DO YOU USE IN YOUR CAPM ANALYSIS?

A. As shown on Exhibit AEB-5, I use the beta coefficients for the proxy group companies as reported by *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 *Value Line* beta coefficients are calculated based on five years of weekly returns relative to the New York Stock Exchange Composite Index. Additionally, as shown in Exhibit AEB-5 and Exhibit AEB-6, I also consider an additional CAPM analysis that relies on the long-term average utility beta coefficient for the companies in my proxy group, which is calculated as an average of the *Value Line* beta coefficients for the companies in my proxy group from 2013 through 2023.

Q: HOW DO YOU ESTIMATE THE MARKET RISK PREMIUM IN THE CAPM?

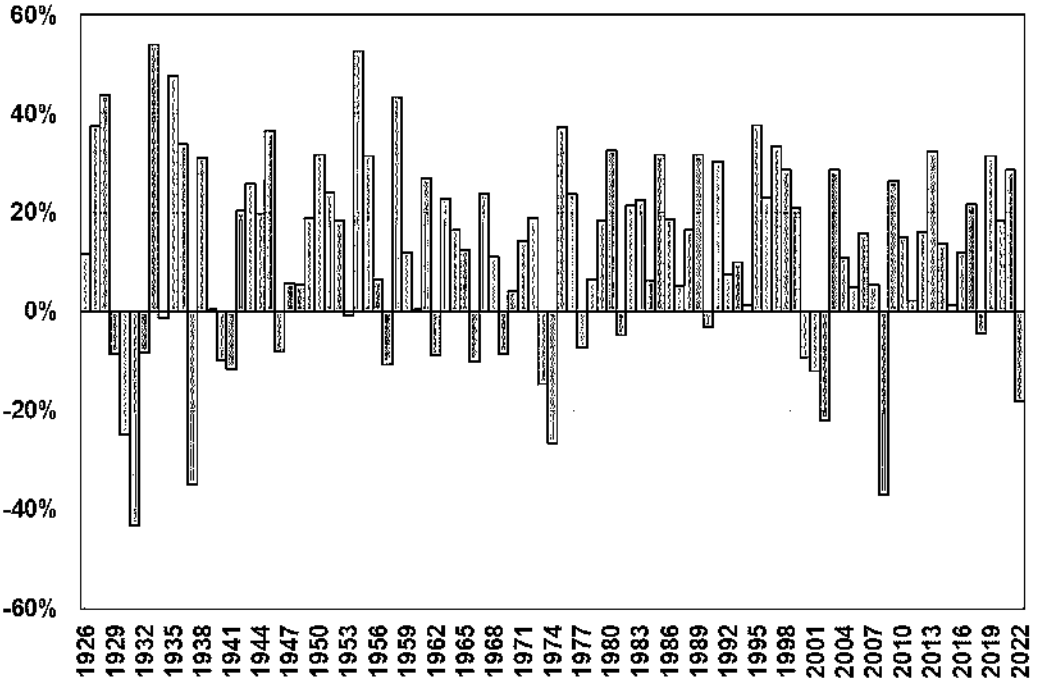
A. I estimate the market risk premium as the difference between the implied expected equity market return and the risk-free rate. As shown in Exhibit AEB-7, the expected return on the S&P 500 Index is calculated using the constant growth DCF model discussed previously as applied to the companies in the 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.

[94] 42(12) Blue Chip Fin. Forecasts at 14 (Dec. 1, 2023).

Q: HOW DOES THE EXPECTED MARKET RETURN YOU HAVE CALCULATED COMPARE TO OBSERVED HISTORICAL MARKET RETURNS?

A. As shown in Figure AEB-14, given the range of annual equity returns that have been observed over the past century, a current expected market return of 12.22 percent is reasonable. 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 AEB-14: Realized U.S. equity market returns (1926–2022)[95]



Q: DO YOU ALSO CONSIDER ANOTHER FORM OF THE CAPM IN YOUR ANALYSIS?

A. Yes. I have also considered the results of an ECAPM in estimating the cost of equity for the Company.[96] The ECAPM calculates the product of the adjusted beta coefficient and

[95] Depicts total annual returns on large company stocks, as reported in the 2023 *Kroll* SBBI Yearbook.

[96] *See, e.g.*, Roger A. Morin, *New Regulatory Finance* at 189, Pub. Util. Reps., Inc. (2006).

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 = the adjusted beta coefficient of an individual security;
rf = 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, but 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.[97]

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 estimates, 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 AEB-15, as well as presented in Exhibit AEB-5).

[97] *Id.* at 191.

Figure AEB-15: CAPM and ECAPM Results

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
CAPM:			
Value Line Beta	11.57%	11.56%	11.56%
Bloomberg Beta	10.61%	10.59%	10.59%
Long-term Avg. Beta	10.36%	10.34%	10.34%
ECAPM:			
Value Line Beta	11.73%	11.72%	11.72%
Bloomberg Beta	11.01%	11.00%	11.00%
Long-term Avg. Beta	10.83%	10.81%	10.81%

C. Bond Yield Risk Premium

Q: PLEASE DESCRIBE THE BOND YIELD PLUS RISK PREMIUM APPROACH.

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as bondholders. In other words, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Thus, risk premium approaches 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 use actual authorized returns for 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 Treasury bond yields. When the authorized ROEs for electric utilities serve as the measure of required equity returns and the yield on the long-term Treasury bond is defined as the relevant measure of interest rates, the risk premium is the difference between those two points.[98]

Q: IS THE BYRP ANALYSIS RELEVANT TO INVESTORS?

A. Yes. Investors are aware of authorized ROEs in other jurisdictions and they consider those awards as a benchmark for a reasonable level of equity returns for utilities of comparable risk operating in other jurisdictions. 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 DID YOUR BOND YIELD PLUS RISK PREMIUM ANALYSIS REVEAL?

A. As shown in Figure AEB-16, from 1980 through January 2024, there was a strong negative relationship between risk premia and interest rates. To estimate that relationship, I have conducted a regression analysis using the following equation:

[98] *See, e.g.*, S. Keith Berry, *Interest Rate Risk and Utility Risk Premia during 1982-93*, 19(2) Managerial & Decision Econ. 127 (Mar. 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*, 15 Fin. Mgmt. 58, 66 (1986).

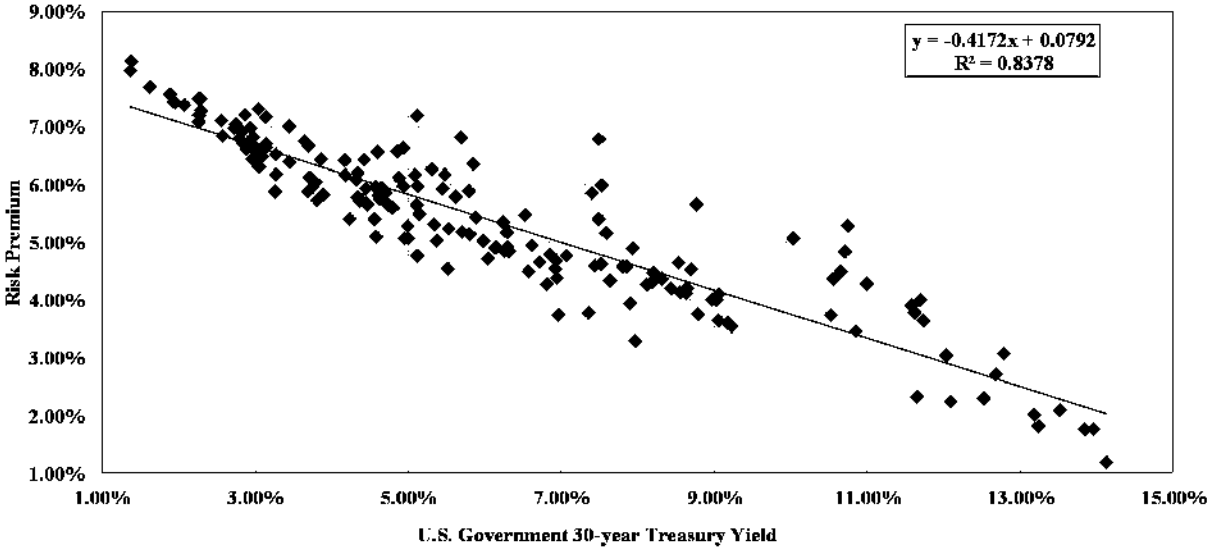
$$RP = a + b(T) \qquad [6]$$

Where:

RP = Risk Premium (difference between authorized ROEs and the yield on 30-year Treasury bonds)
a = intercept term
b = slope term
T = 30-year Treasury bond yield

Data regarding allowed ROEs were derived from all electric utility rate cases from 1980 through January 2024 as reported by S&P Capital IQ Pro. This equation's coefficients were statistically significant at the 99.00 percent level.

Figure AEB-16: Risk Premium Regression Analysis



Q: WHAT ARE THE RESULTS OF YOUR BYRP ANALYSIS?

A. Figure AEB-17 presents the results of my BYRP analysis, which are also presented in more detail in Exhibit AEB-8.

Figure AEB-17: Summary of BYRP Results

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
Bond Yield Risk Premium	10.36%	10.31%	10.31%

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Ann E. Bulkley

PRINCIPAL

Boston 508.981.0866 Ann.Bulkley@brattle.com

With more than 25 years of experience in the energy industry, Ms. Bulkley specializes in regulatory economics for the electric and natural gas and water utility sectors, including valuation of regulated and unregulated utility assets, cost of capital, and capital structure issues.

Ms. Bulkley has extensive state and federal regulatory experience, and she has provided expert testimony on the cost of capital in nearly 100 regulatory proceedings before 32 state regulatory commissions and the Federal Energy Regulatory Commission (FERC).

In addition to her regulatory experience, Ms. Bulkley has provided valuation and appraisal services for a variety of purposes, including the sale or acquisition of utility assets, regulated ratemaking, ad valorem tax disputes, and other litigation purposes. In addition, she has experience in the areas of contract and business unit valuation, strategic alliances, market restructuring, and regulatory and litigation support.

Ms. Bulkley is a Certified General Appraiser licensed in the Commonwealth of Massachusetts and the State of New Hampshire.

Prior to joining Brattle, Ms. Bulkley was a Senior Vice President at an economic consultancy and held senior positions at several other consulting firms.

AREAS OF EXPERTISE

- Regulatory Economics, Finance & Rates
- Regulatory Investigations & Enforcement
- Tax Controversy & Transfer Pricing
- Electricity Litigation & Regulatory Disputes
- M&A Litigation

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EDUCATION

- **Boston University**
  MA in Economics
- **Simmons College**
  BA in Economics and Finance

PROFESSIONAL EXPERIENCE

- **The Brattle Group (2022–Present)**
  Principal
- **Concentric Energy Advisors, Inc. (2002–2021)**
  Senior Vice President
  Vice President
  Assistant Vice President
  Project Manager
- **Navigant Consulting, Inc. (1997–2002)**
  Project Manager
- **Reed Consulting Group (1995-1997)**
  Consultant- Project Manager
- **Cahners Publishing Company (1995)**
  Economist

SELECTED CONSULTING EXPERIENCE & EXPERT TESTIMONY

REGULATORY ANALYSIS AND RATEMAKING

Have provided a range of advisory services relating to regulatory policy analysis and many aspects of utility ratemaking, with specific services including:

- Cost of capital and return on equity testimony, cost of service and rate design analysis and testimony, development of ratemaking strategies
- Development of merchant function exit strategies

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- Analysis and program development to address residual energy supply and/or provider of last resort obligations
- Stranded costs assessment and recovery
  Performance-based ratemaking analysis and design
- Many aspects of traditional utility ratemaking (e.g., rate design, rate base valuation)

COST OF CAPITAL

Have provided expert testimony on the cost of capital and capital structure in nearly 100 regulatory proceedings before state and federal regulatory commissions in the United States.

RATEMAKING

Have assisted several clients with analysis to support investor-owned and municipal utility clients in the preparation of rate cases. Sample engagements include:

- Assisted several investor-owned and municipal clients on cost allocation and rate design issues including the development of expert testimony supporting recommended rate alternatives.
- Worked with Canadian regulatory staff to establish filing requirements for a rate review of a newly regulated electric utility. Along with analyzing and evaluating rate application, attended hearings and conducted investigation of rate application for regulatory staff and prepared, supported, and defended recommendations for revenue requirements and rates for the company. Additionally, developed rates for gas utility for transportation program and ancillary services.

VALUATION

Have provided valuation services to utility clients, unregulated generators, and private equity clients for a variety of purposes, including ratemaking, fair value, ad valorem tax, litigation and damages, and acquisition. Appraisal practices are consistent with the national standards established by the Uniform Standards of Professional Appraisal Practice.

Representative projects/clients have included:

- Prepared appraisals of electric utility transmission and distribution assets for ad valorem tax purposes.
- Prepared appraisals of hydroelectric generating facilities for ad valorem tax purposes.
- Conducted appraisals of fossil fuel generating facilities for ad valorem tax purposes.
- Conducted appraisals of generating assets for the purposes of unwinding sale-leaseback agreements.
- For a confidential utility client, prepared valuation of fossil and nuclear generation assets for financing purposes for regulated utility client.

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- Conducted a strategic review of the acquisition of nuclear generation assets. Review included the evaluation of the operating costs of the facilities and the long-term liabilities associated with the assets including the decommissioning of the assets.
- Prepared a valuation of a portfolio of generation assets for a large energy utility to be used for strategic planning purposes. Valuation approach included an income approach, a real options analysis, and a risk analysis.
- Assisted clients in the restructuring of NUG contracts through the valuation of the underlying assets. Performed analysis to determine the option value of a plant in a competitively priced electricity market following the settlement of the NUG contract.
- Prepared market valuations of several purchase power contracts for large electric utilities in the sale of purchase power contracts. Assignment included an assessment of the regional power market, analysis of the underlying purchase power contracts, and a traditional discounted cash flow valuation approach, as well as a risk analysis. Analyzed bids from potential acquirers using income and risk analysis approached. Prepared an assessment of the credit issues and value at risk for the selling utility.
- Prepared appraisal of a portfolio of generating facilities for a large electric utility to be used for financing purposes.
- Conducted a valuation of regulated utility assets for the fair value rate base estimate used in electric rate proceedings in Indiana.
- Prepared an appraisal of a fleet of fossil generating assets for a large electric utility to establish the value of assets transferred from utility property.
- Conducted due diligence on an electric transmission and distribution system as part of a buy-side due diligence team.
- Provided analytical support and prepared testimony regarding the valuation of electric distribution system assets in five communities in a condemnation proceeding.
- Prepared feasibility reports analyzing the expected net benefits resulting from municipal ownership of investor-owned utility operations.
- Prepared independent analyses of proposal for the proposed government condemnation of the investor-owned utilities in Maine and the formation of a public power district.
- Valued purchase power agreements in the transfer of assets to a deregulated electric market.

STRATEGIC AND FINANCIAL ADVISORY SERVICES

Have assisted several clients across North America with analytically-based strategic planning, due diligence, and financial advisory services.

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Representative projects include:

- Preparation of feasibility studies for bond issuances for municipal and district steam clients.
- Assisted in the development of a generation strategy for an electric utility. Analyzed various NERC regions to identify potential market entry points. Evaluated potential competitors and alliance partners. Assisted in the development of gas and electric price forecasts. Developed a framework for the implementation of a risk management program.
- Assisted clients in identifying potential joint venture opportunities and alliance partners. Contacted interviewed and evaluated potential alliance candidates based on company-established criteria for several LDCs and marketing companies. Worked with several LDCs and unregulated marketing companies to establish alliances to enter into the retail energy market. Prepared testimony in support of several merger cases and participated in the regulatory process to obtain approval for these mergers.
- Assisted clients in several buy-side due diligence efforts, providing regulatory insight and developing valuation recommendations for acquisitions of both electric and gas properties.

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BULKLEY TESTIMONY LISTING

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arizona Corporation Commission				
UNS Electric	11/22	UNS Electric	Docket No. E-04204A-15-0251	Return on Equity
Tucson Electric Power Company	6/22	Tucson Electric Power Company	Docket No. G-01933A-22-0107	Return on Equity
Southwest Gas Corporation	12/21	Southwest Gas Corporation	Docket No. G-01551A-21-0368	Return on Equity
Arizona Public Service Company	10/19	Arizona Public Service Company	Docket No. E-01345A-19-0236	Return on Equity
Tucson Electric Power Company	04/19	Tucson Electric Power Company	Docket No. E-01933A-19-0028	Return on Equity
Tucson Electric Power Company	11/15	Tucson Electric Power Company	Docket No. E-01933A-15-0322	Return on Equity
UNS Electric	05/15	UNS Electric	Docket No. E-04204A-15-0142	Return on Equity
UNS Electric	12/12	UNS Electric	Docket No. E-04204A-12-0504	Return on Equity
Arkansas Public Service Commission				
Oklahoma Gas and Electric Co	10/21	Oklahoma Gas and Electric Co	Docket No. D-18-046-FR	Return on Equity
Arkansas Oklahoma Gas Corporation	10/13	Arkansas Oklahoma Gas Corporation	Docket No. 13-078-U	Return on Equity
California Public Utilities Commission				
PacifiCorp, d/b/a Pacific Power	5/22	PacifiCorp, d/b/a Pacific Power	Docket No. A-22-05-006	Return on Equity

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SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
San Jose Water Company	05/21	San Jose Water Company	A2105004	Return on Equity
Colorado Public Utilities Commission				
Public Service Company of Colorado	01/24	Public Service Company of Colorado	Docket No. 24AL-___G	Return on Equity
Public Service Company of Colorado	11/22	Public Service Company of Colorado	Docket No. 22AL-0530E	Return on Equity
Public Service Company of Colorado	01/22	Public Service Company of Colorado	Docket No. 22AL-0046G	Return on Equity
Public Service Company of Colorado	07/21	Public Service Company of Colorado	21AL-0317E	Return on Equity
Public Service Company of Colorado	02/20	Public Service Company of Colorado	20AL-0049G	Return on Equity
Public Service Company of Colorado	05/19	Public Service Company of Colorado	19AL-0268E	Return on Equity
Public Service Company of Colorado	01/19	Public Service Company of Colorado	19AL-0063ST	Return on Equity
Atmos Energy Corporation	05/15	Atmos Energy Corporation	Docket No. 15AL-0299G	Return on Equity
Atmos Energy Corporation	04/14	Atmos Energy Corporation	Docket No. 14AL-0300G	Return on Equity
Atmos Energy Corporation	05/13	Atmos Energy Corporation	Docket No. 13AL-0496G	Return on Equity
Connecticut Public Utilities Regulatory Authority				
The Southern Connecticut Gas Company	11/23	The Southern Connecticut Gas Company	Docket No. 23-11-02	Return on Equity
Connecticut Natural Gas Corporation	11/23	Connecticut Natural Gas Corporation	Docket No. 23-11-02	Return on Equity

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SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Connecticut Water Company	10/23	Connecticut Water Company	Docket No. 23-08-32	Return on Equity
United Illuminating	09/22	United Illuminating	Docket No. 22-08-08	Return on Equity
United Illuminating	05/21	United Illuminating	Docket No. 17-12-03RE11	Return on Equity
Connecticut Water Company	01/21	Connecticut Water Company	Docket No. 20-12-30	Return on Equity
Connecticut Natural Gas Corporation	06/18	Connecticut Natural Gas Corporation	Docket No. 18-05-16	Return on Equity
Yankee Gas Services Co. d/b/a Eversource Energy	06/18	Yankee Gas Services Co. d/b/a Eversource Energy	Docket No. 18-05-10	Return on Equity
The Southern Connecticut Gas Company	06/17	The Southern Connecticut Gas Company	Docket No. 17-05-42	Return on Equity
The United Illuminating Company	07/16	The United Illuminating Company	Docket No. 16-06-04	Return on Equity
Federal Energy Regulatory Commission				
Sea Robin Pipeline	12/22	Sea Robin Pipeline	Docket No. RP22-___	Return on Equity
Northern Natural Gas Company	07/22	Northern Natural Gas Company	Docket No. RP22-___	Return on Equity
Transwestern Pipeline Company, LLC	07/22	Transwestern Pipeline Company, LLC	Docket No. RP22-___	Return on Equity
Florida Gas Transmission	02/21	Florida Gas Transmission	Docket No. RP21-441	Return on Equity
TransCanyon	01/21	TransCanyon	Docket No. ER21-1065	Return on Equity
Duke Energy	12/20	Duke Energy	Docket No. EL21-9-000	Return on Equity
Wisconsin Electric Power Company	08/20	Wisconsin Electric Power Company	Docket No. EL20-57-000	Return on Equity

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SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Panhandle Eastern Pipe Line Company, LP	10/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-78-000 RP19-78-001	Return on Equity
Panhandle Eastern Pipe Line Company, LP	08/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-1523	Return on Equity
Sea Robin Pipeline Company LLC	11/18	Sea Robin Pipeline Company LLC	Docket# RP19-352-000	Return on Equity
Tallgrass Interstate Gas Transmission	10/15	Tallgrass Interstate Gas Transmission	RP16-137	Return on Equity
Idaho Public Utilities Commission				
Intermountain Gas Co	12/22	Intermountain Gas Co	C-INT-G-22-07	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	05/21	PacifiCorp d/b/a Rocky Mountain Power	Case No. PAC-E-21-07	Return on Equity
Illinois Commerce Commission				
Peoples Gas Light & Coke Company	01/23	Peoples Gas Light & Coke Company	D-23-0069	Return on Equity
North Shore Gas Company	01/23	North Shore Gas Company	D-23-0068	Return on Equity
Illinois American Water	02/22	Illinois American Water	Docket No. 22-0210	Return on Equity
North Shore Gas Company	02/21	North Shore Gas Company	No. 20-0810	Return on Equity
Indiana Utility Regulatory Commission				
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South	12/23	Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South	IURC Cause No. 45990	Return on Equity

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SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Indiana Michigan Power Co.	08/23	Indiana Michigan Power Co.	IURC Cause No. 45933	Return on Equity
Indiana American Water Company	03/23	Indiana and Michigan American Water Company	IURC Cause No. 45870	Return on Equity
Indiana Michigan Power Co.	07/21	Indiana Michigan Power Co.	IURC Cause No. 45576	Return on Equity
Indiana Gas Company Inc.	12/20	Indiana Gas Company Inc.	IURC Cause No. 45468	Return on Equity
Southern Indiana Gas and Electric Company	10/20	Southern Indiana Gas and Electric Company	IURC Cause No. 45447	Return on Equity
Indiana and Michigan American Water Company	09/18	Indiana and Michigan American Water Company	IURC Cause No. 45142	Return on Equity
Indianapolis Power and Light Company	12/17	Indianapolis Power and Light Company	Cause No. 45029	Fair Value
Northern Indiana Public Service Company	09/17	Northern Indiana Public Service Company	Cause No. 44988	Fair Value
Indianapolis Power and Light Company	12/16	Indianapolis Power and Light Company	Cause No.44893	Fair Value
Northern Indiana Public Service Company	10/15	Northern Indiana Public Service Company	Cause No. 44688	Fair Value
Indianapolis Power and Light Company	09/15	Indianapolis Power and Light Company	Cause No. 44576 Cause No. 44602	Fair Value
Kokomo Gas and Fuel Company	09/10	Kokomo Gas and Fuel Company	Cause No. 43942	Fair Value

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SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Northern Indiana Fuel and Light Company, Inc.	09/10	Northern Indiana Fuel and Light Company, Inc.	Cause No. 43943	Fair Value
Iowa Department of Commerce Utilities Board				
MidAmerican Energy Company	06/23	MidAmerican Energy Company	Docket No. RPU-2023-___	Return on Equity
MidAmerican Energy Company	01/22	MidAmerican Energy Company	Docket No. RPU-2022-0001	Return on Equity
Iowa-American Water Company	08/20	Iowa-American Water Company	Docket No. RPU-2020-0001	Return on Equity
Kansas Corporation Commission				
Evergy Kansas	04/23	Evergy Kansas	**Docket No. 23-_____-_____-RTS**	Return on Equity
Atmos Energy Corporation	08/15	Atmos Energy Corporation	Docket No. 16-ATMG-079-RTS	Return on Equity
Kentucky Public Service Commission				
Kentucky American Water Company	06/23	Kentucky American Water Company	Docket No. 2023-____	Return on Equity
Kentucky American Water Company	11/18	Kentucky American Water Company	Docket No. 2018-00358	Return on Equity
Maine Public Utilities Commission				
Central Maine Power	08/22	Central Maine Power	Docket No. 2022-00152	Return on Equity
Central Maine Power	10/18	Central Maine Power	Docket No. 2018-194	Return on Equity
Maryland Public Service Commission				
Maryland American Water Company	06/18	Maryland American Water Company	Case No. 9487	Return on Equity
Massachusetts Appellate Tax Board				

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SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Hopkinton LNG Corporation	03/20	Hopkinton LNG Corporation	Docket No.	Valuation of LNG Facility
FirstLight Hydro Generating Company	06/17	FirstLight Hydro Generating Company	Docket No. F-325471 Docket No. F-325472 Docket No. F-325473 Docket No. F-325474	Valuation of Electric Generation Assets
Massachusetts Department of Public Utilities				
Massachusetts Electric Company Nantucket Electric Company d/b/a National Grid	11/23	Massachusetts Electric Company Nantucket Electric Company d/b/a National Grid	DPU 23-150	Return on Equity
National Grid USA	11/20	Boston Gas Company	DPU 20-120	Return on Equity
Berkshire Gas Company	05/18	Berkshire Gas Company	DPU 18-40	Return on Equity
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Michigan Public Service Commission				
Indiana Michigan Power Co.	09/23	Indiana Michigan Power Co.	Case No. U-21461	Return on Equity
Michigan Gas Utilities Corporation	03/23	Michigan Gas Utilities Corporation	Case No. U-21366	Return on Equity
Michigan Gas Utilities Corporation	03/21	Michigan Gas Utilities Corporation	Case No. U-20718	Return on Equity
Wisconsin Electric Power Company	12/11	Wisconsin Electric Power Company	Case No. U-16830	Return on Equity
Michigan Tax Tribunal				

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SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
New Covert Generating Co., LLC.	03/18	The Township of New Covert Michigan	MTT Docket No. 000248TT and 16-001888-TT	Valuation of Electric Generation Assets
Covert Township	07/14	New Covert Generating Co., LLC.	Docket No. 399578	Valuation of Electric Generation Assets
Minnesota Public Utilities Commission				
ALLETE, Inc. d/b/a Minnesota Power	11/23	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-23-155	Return on Equity
CenterPoint Energy Resources	11/23	CenterPoint Energy Resources	D-G-008/GR-23-173	Return on Equity
Minnesota Energy Resources Corporation	11/22	Minnesota Energy Resources Corporation	Docket No. G011/GR-22-504	Return on Equity
CenterPoint Energy Resources	11/21	CenterPoint Energy Resources	D-G-008/GR-21-435	Return on Equity
ALLETE, Inc. d/b/a Minnesota Power	11/21	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-21-630	Return on Equity
Otter Tail Power Company	11/20	Otter Tail Power Company	E017/GR-20-719	Return on Equity
ALLETE, Inc. d/b/a Minnesota Power	11/19	Allete, Inc. d/b/a Minnesota Power	E015/GR-19-442	Return on Equity
CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	10/19	CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	G-008/GR-19-524	Return on Equity
Great Plains Natural Gas Co.	09/19	Great Plains Natural Gas Co.	Docket No. G004/GR-19-511	Return on Equity

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SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Minnesota Energy Resources Corporation	10/17	Minnesota Energy Resources Corporation	Docket No. G011/GR-17-563	Return on Equity
Missouri Public Service Commission				
Ameren Missouri	08/22	Ameren Missouri	File No. ER-2022-0337	Return on Equity
Missouri American Water Company	07/22	Missouri American Water Company	Case No. WR-2022-0303 Case No. SR-2022-0304	Return on Equity
Evergy Missouri West	1/22	Evergy Missouri West	File No. ER-2022-0130	Return on Equity
Evergy Missouri Metro	1/22	Evergy Missouri Metro	File No. ER-2022-0129	Return on Equity
Ameren Missouri	03/21	Ameren Missouri	Docket No. ER-2021-0240 Docket No. GR-2021-0241	Return on Equity
Missouri American Water Company	06/20	Missouri American Water Company	Case No. WR-2020-0344 Case No. SR-2020-0345	Return on Equity
Missouri American Water Company	06/17	Missouri American Water Company	Case No. WR-17-0285 Case No. SR-17-0286	Return on Equity
Montana Public Service Commission				
Montana-Dakota Utilities Co.	11/22	Montana-Dakota Utilities Co.	D2022.11.099	Return on Equity
Montana-Dakota Utilities Co.	06/20	Montana-Dakota Utilities Co.	D2020.06.076	Return on Equity