STATE OF UTAH

UTAH PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION OF CORIX UTAH CITY HEATING AND COOLING LLC TO ESTABLISH A THERMAL TARIFF WITH RATES AND TERMS OF SERVICE	)))))	Docket No. 26-2666-01

Direct Testimony of

MR. JOSH FIGUEROA

Principal, The Brattle Group

On behalf of Corix Utah City Heating and Cooling LLC

May 1, 2026

Corix Exhibit 5.0

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I. INTRODUCTION

A. WITNESS IDENTIFICATION

Q. Please state your name, occupation, and business address for the record.

A. My name is Josh Figueroa and I am a Principal at The Brattle Group ("Brattle") in its New York City office located at 7 Times Square, Suite 1700, New York, NY 10036.

B. BACKGROUND AND EXPERIENCE

Q. Briefly describe your education and professional qualifications.

A. I have over 13 years of experience working in the regulated utility industry. At Brattle, I specialize in financial and economic topics in the energy sector, including cost of capital and related matters. I have supported clients on cost of capital and business risk matters in Alaska, Arkansas, California, Hawaii, Illinois, Iowa, Michigan, New York, Oregon, Texas, Utah, Virginia, Washington, Wisconsin, Alberta, British Columbia, Manitoba, Quebec, and Barbados as well as before the Federal Energy Regulatory Commission and the Federal Aviation Administration. I have testified on cost of capital matters before the Federal Energy Regulatory Commission, the Oregon Public Utility Commission, the New York Public Service Commission, the British Columbia Utilities Commission, and the Barbados Fair Trading Commission. I also co-lead Brattle's Future of Gas practice, helping clients develop and evaluate strategies, utility programs, and alternative regulatory structures in response to the evolving regulatory and policy landscape for natural gas. I have testified on natural gas related matters before the Illinois Commerce Commission, the Massachusetts Department of Public Utilities, and the British Columbia Utilities Commission.

Prior to joining Brattle, I worked at Con Edison Transmission where I led the acquisition, development, and management of natural gas transmission pipelines and storage assets. I began my career at Con Edison's regulated natural gas utility in New York City in several roles, including in Gas Supply where I managed the utility's capacity and supply portfolio and later, I was a natural gas trader for Con Edison's regulated gas utilities and steam generation plants.

I hold a B.S. in Mechanical Engineering from Columbia University, a B.S. in Neuroscience from Brandeis University, and an M.B.A. from NYU's Stern School of Business. My background, prior testimony, and publications are described in my resume, which is included as Corix Exhibit No. 5.1.

II. PURPOSE OF TESTIMONY AND SUMMARY OF CONCLUSIONS

Q. What is the purpose of your testimony in this proceeding?

A. I have been asked by the Corix Utah City Heating and Cooling LLC ("Company") which operates the Utah City District Energy Utility ("UCDEU") system to estimate the cost of equity and evaluate the cost of debt and capital structure that the Utah Public Service Commission (the "Commission") should allow UCDEU an opportunity to earn on its rate base. Specifically, I perform a cost of equity analysis that provides return on equity ("ROE") estimates derived from market data for two groups of highly regulated proxy utility companies. I also consider the relative business risk of the Company as well as its proposed regulatory capital structure to arrive at my recommendation for the allowed ROE. I also evaluate the reasonableness of UCDEU's embedded cost of debt relative to yields on bonds issued by similarly situated utilities. Lastly, I evaluate the reasonableness of the Company's requested deemed capital structure consisting of 50.0 percent equity and 50.0

percent debt capital based on UCDEU's pro forma financial statements and recently authorized capital structure for utilities.

A. SUMMARY OF CONCLUSIONS

Q. Please summarize your findings and conclusions regarding the reasonableness of UCDEU's proposed ROE, cost of debt, and capital structure.

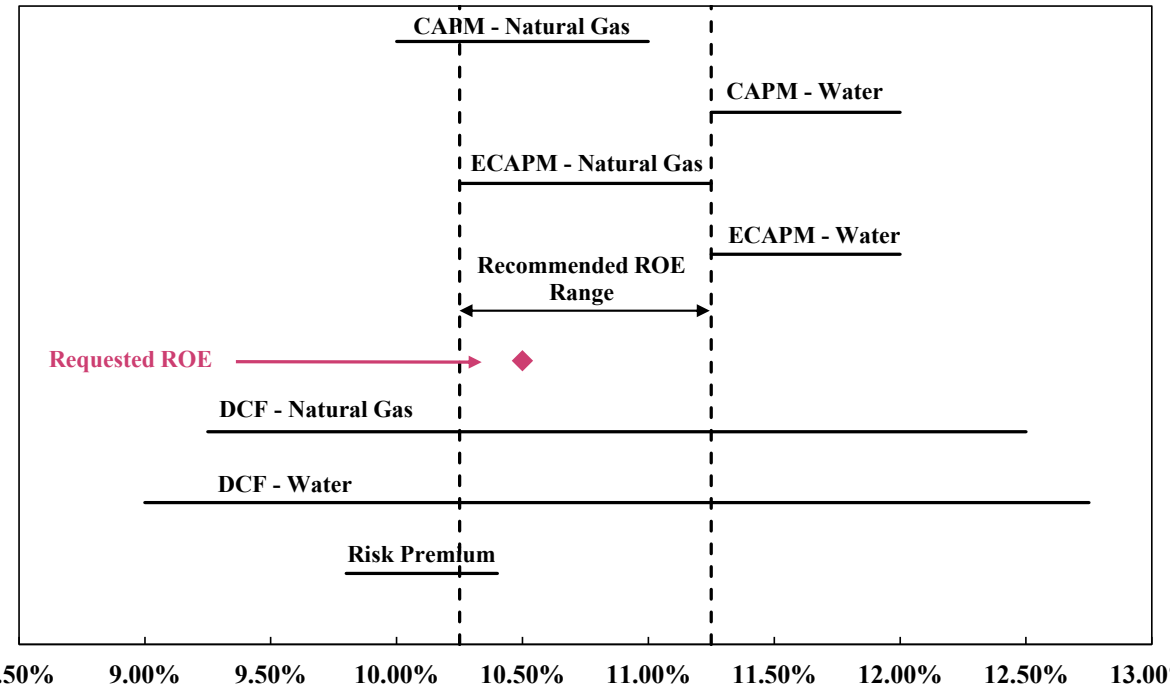
A. I find UCDEU's request to be allowed to earn a 10.5 percent rate of return on the equity portion of its regulated rate base, at the Company's requested 50.0 percent equity capital structure for the August 1, 2026 to July 31, 2027 test period (the "Test Period") to be reasonable. This is based on my finding that the range of ROE estimates for UCDEU is 10.25 percent to 11.25 percent, prior to any consideration of and without any adjustment for company-specific risks. This range of estimates is based on my implementation of standard cost of capital estimation models including two versions of the Discounted Cash Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"), as well as an Implied Risk Premium model.

I implement these models using market data for two groups of proxy companies consisting of highly regulated natural gas and water utility companies. The range of ROE estimates are derived from a group of proxy companies that are relatively large and have mature utility business operations compared to UCDEU. Ideally, I would rely on a proxy group consisting of other thermal energy utilities and/or small, in-development utilities, like UCDEU. However, as discussed in further detail below, I am unable to construct such a proxy group of publicly traded companies. Empirical evidence that indicates investors require a premium to invest in smaller and/or in-development companies. Therefore, I find the ROE estimates derived from my implementation of the DCF, CAPM, and Risk

Premium Model, and UCDEU's requested, negotiated 10.5 percent ROE, are conservative relative to UCDEU's business risk profile.

The reasonable range of ROE results from each of these models (at the requested 50.0 percent equity capital structure) for the Natural Gas Utility and Water Utility proxy samples are summarized in Figure 1 below. The table also presents the corresponding reasonable ranges, which I discuss further in Section V below.

FIGURE 1: SUMMARY OF REASONABLE RANGES RECOMMENDED ROE RANGE AT 50.0% EQUITY BASED ON LARGE, MATURE NATURAL GAS AND WATER UTILITY PROXY COMPANIES



UCDEU's requested, negotiated ROE of 10.5 percent is within the recommended range of 10.25 percent to 11.25 percent (albeit towards to the lower half of the range). I find that UCDEU's requested, negotiated ROE of 10.5 percent is reasonable and conservative based on my assessment that UCDEU faces higher business risks than the

large, mature natural gas and water utility companies in the proxy group that determine the recommended range.

In comparison to the proxy group of large, mature natural gas and water utility companies, I find that UCDEU's business circumstances are unique in that it is a small, in-development utility that will begin service in 2026 and have a fully built-out system within 20 years. As discussed below, empirical evidence suggests that investors require a 59 to 254 basis point premium to invest in utilities of similar size to UCDEU. In addition, investors require a premium to invest in greenfield and early-stage projects due to the elevated risk profile that they face relative to the risks associated with investing in more mature businesses, like the natural gas and water utility proxy companies. UCDEU also has a high degree of customer concentration as it only has a single customer, Flagborough, unlike the proxy companies that serve a large, diversified set of utility customers. The Company is also proposing a revenue deferment mechanism that will protect customers from rate impacts but creates a somewhat heightened cost recovery risk relative to similar mechanisms available to other proxy companies.

In addition, my proxy group would ideally consist of small, in-development thermal utilities, however there is not a sufficient amount of risk comparable thermal utilities to create a meaningful proxy group. If a proxy group of small, in-development thermal utilities were available, the results of my cost of equity analyses would differ and would likely directionally increase the reasonable range of ROE estimates. For example, empirical evidence suggests that investors require a premium to invest in utilities of similar size to UCDEU. However, I have not adjusted my ROE estimates nor my recommended range to account for this size premium.

Taken together, I find that UCDEU faces higher business risk than the natural gas and water utility proxy companies. Therefore, UCDEU's requested 10.5 percent return on equity, which is below the median of the recommended range derived from the proxy group of large and mature utility companies, is reasonable and conservative. The requested 10.5 percent return on equity also reflects the return on equity agreed upon with the Company's only customer, Flagborough, in their Infrastructure Agreement.

I also recommend that UCDEU be allowed to earn its embedded cost of debt for the Test Period. It is my understanding that the Company is unable to efficiently access low-cost debt given the size of its borrowings and the Company's business risk profile stemming from its in-development status. [1] [redacted] In prior decisions, the Commission has utilized a utility's embedded cost of debt to set the authorized cost of debt for ratemaking purposes. I therefore recommend that UCDEU be allowed to earn its embedded cost of debt, which as outlined by Corix witness Mr. Maxwell Wang is 7.49 percent for the Test Period.[2]

Finally, I recommend that the Commission authorize a deemed capital structure consisting of 50.0 percent equity and 50.0 percent debt for UCDEU for the Test Period. This capital structure is consistent with the Company's negotiated capital structure and its

[1] *See* Corix Exhibit 4.0 testimony of Maxwell Wang for Corix.

[2] *Ibid*.

projected actual capital structure in its pro forma financial statements.[3] It is also consistent with and generally at or below the recent average authorized capital structure awarded to natural gas and water utilities.

Q. How is the remainder of your testimony organized?

A. Section III formally defines the cost of capital and explains the techniques for estimating it in the context of utility rate regulation. Section IV discusses conditions and trends in the U.S. capital markets and their impacts on the cost of capital. Section V explains my cost of equity analyses and presents the results. Section VI discusses UCDEU's business risk characteristics and other Company-specific business risks that are relevant to my recommended allowed ROE. Section VII discusses my evaluation of UCDEU's cost of debt. Then, in Section VIII, I evaluate the Company's requested deemed capital structure. Finally, Section IX concludes my testimony with a summary of my recommendations.

B. ITEMIZED ATTACHMENTS

Q. Are you sponsoring any exhibits to your direct testimony?

A. Yes, I am sponsoring and have attached the following exhibits.

- Corix Exhibit 5.1 – *Curriculum vitae*
- Corix Exhibit 5.2 – Technical Appendix
- Corix Exhibit 5.3 – Cost of Capital[4]
- Corix Exhibit 5.4 Confidential – Cost of Capital Model
- Corix Exhibit 5.5 Confidential – Implied Risk Premium Model – Natural Gas

[3] *Ibid*. and Corix Utah City Heating and Cooling, Corix Exhibit CS.F, Utah Public Service Commission, Docket No. 25-2666-01, August 1, 2025.

[4] Corix Exhibit 5.3 is a publicly available summary of Corix Exhibits 5.4 to 5.10.

- Corix Exhibit 5.6 Confidential – Implied Risk Premium Model - Water
- Corix Exhibit 5.7 Confidential – Bond Yields & MRP
- Corix Exhibit 5.8 Confidential – FERC MRP
- Corix Exhibit 5.9 Confidential – Business Risk
- Corix Exhibit 5.10 Confidential – Capital Structure

III. COST OF CAPITAL PRINCIPLES AND APPROACH TO ESTIMATING THE COST OF EQUITY

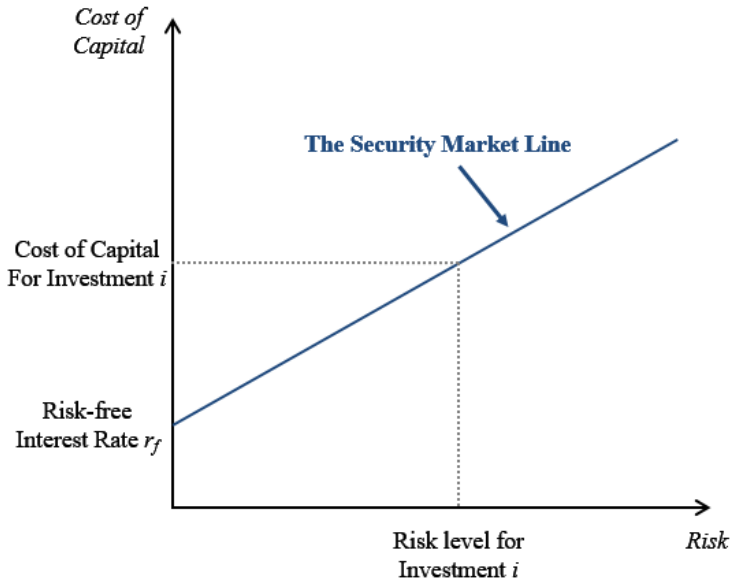
A. RISK AND THE COST OF CAPITAL

Q. How is the "Cost of Capital" defined?

A. The cost of capital is defined as the expected rate of return in capital markets on alternative investments of equivalent risk. Put differently, it is the rate of return investors require based on the risk-return alternatives available in competitive capital markets. The cost of capital is a type of opportunity cost—it represents the rate of return that investors could expect to earn elsewhere without bearing more risk. "Expected" is used in the statistical sense: the mean of the distribution of possible outcomes. The terms "expect" and "expected," as in the definition of the cost of capital itself, refer to the probability-weighted average over all possible outcomes.

The definition of the cost of capital recognizes a tradeoff between risk and return that can be represented by the "security market risk-return line" or "security market line" for short. The line is depicted in Figure 2 below. The higher the risk, the higher the cost of capital required.

FIGURE 2: THE SECURITY MARKET LINE



Q. What factors contribute to systematic risk for an equity investment?

A. When estimating the cost of equity for a given asset or business venture, two categories of risk are important. The first is business risk, which is the degree to which the cash flows generated by the business (and its assets) vary in response to moves in the broader market. In the context of the CAPM, business risk can be quantified in terms of an "asset beta" or "unlevered beta." For a company with an asset beta of 1.0, the value of its enterprise will increase (decrease) by 1% for a 1% increase (decrease) in the market index.

The second category of risk relevant for equity investment depends on how the business enterprise is financed and is called financial risk. Section III.B below explains how financial risk affects the systematic risk of equity.

Q. What are the guiding principles for determining allowed utility returns?

A. The seminal guidance on this topic was provided by the U.S. Supreme Court in the *Hope* and *Bluefield* cases,[5] which found that:

- The return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks;[6]
- The return should be reasonably sufficient to assure confidence in the financial soundness of the utility; and
- The return should be adequate, under efficient and economical management for the utility to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.[7]

Q. How does the standard for a just and reasonable rate of return relate to the cost of capital?

A. The first component of the *Hope* and *Bluefield* standard, as articulated above, is directly aligned with the financial concept of the opportunity cost of capital.[8] The cost of capital is the rate of return investors can expect to earn in capital markets on other investments of equivalent risk.[9] Thus, it is essential to consider the risk factors that affect the potential

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[5] Bluefield Water Works & Improvement Co. v. Public Service Com'n of West Virginia, 262 U.S. 679 (1923) ("Bluefield"), and Federal Power Com'n v. Hope Natural Gas Co., 320 U.S. 591 (1944) ("Hope").

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

[7] Bluefield, 262 U.S. at 680.

[8] A formal link between the opportunity cost of capital as defined by financial economics and the proper expected rate of return for utilities was developed by Stewart C. Myers, "Application of Finance Theory to Public Utility Rate Cases," Bell Journal of Economics & Management Science 3:58-97 (1972).

[9] The opportunity cost of capital is also referred to as simply the "cost of capital," and can be equivalently described in terms of the "required return" needed to attract investment in a particular security or other asset (i.e., the level of expected return at which investors will find that asset at least as attractive as an alternative investment).

variability in expected returns, as well as the average level of those returns. In short, the "comparability" of investments and returns must be considered on a risk-adjusted basis.

The impact of risk on investors' required returns is central to the financial concept of the opportunity cost of capital, and to the "comparable investments" and "capital attraction" components of the fair return standard. Put simply, a fair return must be sufficiently attractive to compensate investors for forgoing the opportunity to earn a return from an alternative investment of comparable risk. The return that investors require to compensate for this opportunity cost is the cost of capital. Therefore, a fair allowed return must be at least as high as that available on comparable investments (*i.e.*, it must meet the comparability criteria).

The third component of the fair return standard requires that the allowed return be sufficient to maintain the company's financial integrity, such that its operations are not hampered by inadequate cash flows. This is a necessary component of a fair return, but not a sufficient one, as even a return that provides cash flow adequate to support operations may not be sufficient to attract investment capital in competition with comparably risky alternative investments. Even if an allowed return and deemed equity thickness allow a utility to maintain a high-quality credit profile and raise debt capital on reasonable terms, it does not necessarily ensure that the return on equity—when appropriately accounting for the risk-impact of financial leverage inherent in the regulatory capital structure—is competitive with that available for alternative investments of comparable risk.

Q. Are there additional economic considerations that affect the relationship between allowed return and the cost of capital?

A. Yes, beyond the basic elements of the fair return standard discussed above, utility regulators and customers must concern themselves with the broader economic consequences of providing an inadequate return to the company's investors. In the short-run, deviations from the expected rate of return on the rate base from the cost of capital may seemingly create a "zero-sum game"—the perceptions investor gain if customers are overcharged, and customers gain if investors are shortchanged. This view is not valid. In the longer term, inadequate returns are likely to expose customers—and society generally—to risks that cost far more than may be saved in the short-run. Inadequate returns lead to inadequate investment, whether for maintenance or for new plant and equipment. Without access to investor capital, the company may be forced to forego opportunities to maintain, upgrade, and expand its system and decrease long-run costs. Indeed, the costs to consumers of an undercapitalized industry can be far greater than any short-run gains from shortfalls in the cost of capital. This is especially true for capital-intensive industries (such as a district energy utility).

Q. Please summarize how you considered risk when estimating the cost of equity.

A. To assess the cost of equity for UCDEU, I start by selecting proxy groups of publicly traded companies that provide regulated utility services. As discussed in further detail below, I would ideally select a proxy group consisting of utilities whose business operations are primarily concentrated in thermal energy utility service, with similar risk, like UCDEU. However, at this time it is not possible to construct a proxy group of publicly traded thermal energy utilities as nearly all thermal energy utilities in the U.S. are municipal utilities,

privately owned, or have substantial operations in other lines of business. As a result, I selected two proxy groups consisting of natural gas utilities ("Natural Gas Sample") and water distribution utilities ("Water Utility Sample"), which, in my opinion, are relevant proxy companies for estimating UCDEU's cost of equity due to the significant similarities between their business activities and those of thermal energy utilities. Each of the utility proxy groups has a high proportion of regulated assets and revenues with the majority having more than 80 percent of their assets subject to regulations. They also all have a network of pipes that are used to distribute a commodity to end-use customers and they are capital intensive (meaning that each dollar of revenue requires substantial investments in fixed assets). While the structure and business risks of regulated natural gas and water utilities are similar to thermal energy utilities, like UCDEU, the utilities that form these proxy groups are significantly more established and larger in size compared to UCDEU being a small greenfield utility. I discuss each sample and the selection process in further detail in Section V.

To arrive at my final ROE recommendation, I consider (i) the range of ROE estimates I derived using standard cost of equity models, (ii) the current economic outlook, (iii) financial risk differences, and (iv) the business risks and regulatory environment of UCDEU, being that of a small district energy utility, relative to that of the proxy samples.

B. FINANCIAL RISK AND THE COST OF EQUITY

Q. How does capital structure affect the cost of equity?

A. Debt holders in a company have a fixed claim on the assets of the company and are paid prior to the company's owners (equity holders) who hold the inherently variable residual claim on the company's operating cash flows. Because equity holders only receive the

profit that is left over after the fixed debt payments are made, higher degrees of debt in the capital structure amplify the variability in the expected rate of return earned by equity-holders. This phenomenon of debt resulting in financial leverage for equity holders means that, all else equal, a greater proportion of debt in the capital structure increases risk for equity holders, causing them to require a higher rate of return on their equity investment, even for an equivalent level of underlying business risk.

Q. How is financial risk measured?

A. Financial risk is properly measured using market value capital structure data. The notion that financial leverage is and should be measured on a market value basis is well supported in academic literature,[10] including textbooks on corporate finance and professional valuation books and guides.[11]

The impact of financial leverage on the cost of equity has been developed since the 1958 academic papers of Professors Franco Modigliani and Merton Miller. Modigliani and Miller are two economists who won Nobel Prizes in part for their body of work on the effects of debt on the value of a company.[12] A key corollary of Modigliani and Miller's work is that the cost of equity increases as financial leverage increases. Although the exact

[10] See, e.g., Richard A. Brealey, Stewart C. Myers, and Franklin Allen, 2017, Principles of Corporate Finance, 12th edition, McGraw-Hill Irwin, at p. 467; Stephen A. Ross, Randolph W. Westerfield, and Jeffrey Jaffe, 2002, Corporate Finance, 6th edition, McGraw-Hill Irwin, at p.386; and Mark Grinblatt and Sheridan Titman, 1998, Financial Markets and Corporate Strategy, 1st edition, Irwin/McGraw-Hill, at p. 464

[11] See, e.g., Tom Copeland, Tim Koller, and Jack Murrin, 2000, Valuation: Measuring and managing the value of companies, 3rd edition John Wiley & Sons, p. 204; and Shannon P. Pratt and Alina V. Niculita, 2008, Valuation a business: The analysis and appraisal of closely held companies, 5th edition, McGraw-Hill, at pp. 216 – 217.

[12] Franco Modigliani and Merton H. Miller (1958), "The cost of capital, corporation finance and the theory of investment," American Economic Review, 48, pp. 261-297. For a modern textbook exposition of the capital structure theories, see Brealey, Myers, and Allen, op cit., Chapter 17.

rate of increase in cost of equity differs by models of capital structure, it is universally accepted that as a company adds debt, its cost of equity increases as a result.

Some may argue that financial risk is measured on a book value basis. This notion is not correct for two reasons. First, in Modigliani's and Miller's 1958 paper and subsequent work, financial leverage has been consistently measured on a market value basis. This is because Modigliani's and Miller's basic insight is that, under perfect market conditions, financial leverage does not increase the market value of a company as long as different combinations of debt and equity can be selected by the investors themselves.[13] To implement such a self-help financial engineering, investors have to be able to buy and sell debt and equity to achieve their desired combination. The prices at which they transact are, by definition, market prices. Second, as a more practical matter, economists generally prefer to use market values because they convey timely information, rather than historical data, about the assets. Business decisions on investment, capital budgeting, and financing are all based on real time market value information.

Q. How do differences in financial leverage affect the estimation of the cost of equity?

A. The DCF models and the CAPM rely on market data to estimate the cost of equity for the proxy companies, so the results reflect the value of the capital that investors hold during the estimation period (*i.e.*, the market values).

The authorized ROE is applied to the equity portion of UCDEU's rate base. Because the cost of equity is measured using a group of proxy companies, it may well be

[13] In developing their theory, Modigliani and Miller assumed that investors could adjust the capital structure of their portfolios at no cost.

the case that these proxy companies finance their operations with a different debt and equity proportion than the proportion that the Commission allows in UCDEU's rate base. Specifically, the DCF models and the CAPM measure the cost of equity using market data and consequently are measures of the cost of equity using the proportion of debt and equity that is inherent in that data. Therefore, I consider the impact of any difference between the financial risk inherent in those cost of equity estimates, and the capital structure used to determine UCDEU's required return on equity.

Differences in financial risk due to the different degree of financial leverage in UCDEU's regulatory capital structure compared to the capital structures of the proxy companies mean that the equity betas of the proxy companies in the CAPM must be adjusted before they can be applied in determining UCDEU's return on equity. Similarly, the cost of equity measured by applying the DCF models to the proxy companies' market data requires adjustment if it is to serve as an estimate of the appropriate allowed ROE for UCDEU at the regulatory capital structure the Commission grants.

Importantly, taking differences in financial leverage into account does not change the value of the rate base. Rather, it acknowledges the fact that a higher degree of financial leverage in the regulatory capital structure imposes a higher degree of financial risk for an equity investment in UCDEU's rate base than is experienced by equity investors in the market-traded stock of the less leveraged proxy companies.

Q. How specifically do you consider financial risk in your analysis using market data for the proxy group companies?

A. The impact of financial risk is taken into account in an analysis of cost of equity using market-based models such as the DCF model and CAPM in several ways. One way is to determine the after-tax weighted average cost of capital for the proxy group using the equity and debt percentages as the weights assigned to the cost of equity and debt. Financial theory holds that for a given level of business risk, the weighted average cost of capital is constant over a broad set of capital structures, *i.e.*, the weighted average cost of capital is the same at, for example, 55 and 45 percent equity, as the cost of equity increases as the percentage of equity decreases. This approach is consistent with the Modigliani Miller Theory discussed above. I estimate the weighted cost of capital for each utility in the proxy group based on that utility's capital structure. I then evaluate the average weighted cost of capital across the proxy group. Once the weighted cost of capital is determined for the proxy group, I can then determine the cost of equity that is required at UCDEU's regulatory capital structure. This approach assumes that the after-tax weighted average cost of capital is constant for a range that spans the capital structures used to estimate the cost of equity and the regulatory capital structure.

A second approach was developed by Professor Hamada, who estimated the cost of equity using the CAPM and made comparisons between companies with different capital structures using beta. Specifically, in the Hamada approach, I use the estimated beta to calculate what beta would be associated with a 100 percent equity-financed firm to obtain a so-called all-equity or assets beta and then re-lever the beta to determine the beta

associated with the regulatory capital structure. This requires an estimate of the systematic risk associated with debt (i.e., the debt beta), which is usually quite small.

In Corix Exhibit 5.2, I provide additional technical details regarding the methods that can be used to account for financial risk when estimating the cost of capital.

Q. Can you provide a numerical illustration of how the cost of equity changes, all else equal, when the degree of leverage changes?

A. Yes. I constructed a simple example below, where only the degree of financial leverage of a company varies. I assumed the return on equity is 11.00 percent at a 50 percent equity capital structure and determined the return on equity that would result in the same overall return if the percentage of equity in the capital structure were reduced to 45 percent.

FIGURE 3: ILLUSTRATION OF THE IMPACT OF FINANCIAL RISK ON ROE

		Company A (50% Equity)	**Company B** (45% Equity)
Rate Base	[a]	$1,000	$1,000
Equity	[b]	$500	$450
Debt	[c]	$500	$550
Total Cost of Capital (8%)	[d] = [a] x 8%	**$80**	**$80**
Cost of Debt (5%)	[e] = [c] x 5%	$25	$28
Equity Return	[f] = [d] - [e]	$55	$53
Rate of Return on Equity (ROE)	[g] = [f] / [b]	**11.00%**	**11.67%**

Figure 3 above illustrates how financial risk affects returns and the ROE. The overall return remains the same for Companies A and B at $80. However, Company B, with the higher financial leverage, must earn a higher percentage ROE in order to maintain the same overall return. This higher percentage allowed ROE represents the increased risk

to equity investors caused by the higher degree of leverage. Importantly, regardless of the equity percentage, customers will pay $80 in capital costs – the only difference between the two companies is how that $80 is sourced between equity and debt holders.

The principle illustrated in Figure 3 above is an example of the after-tax weighted average cost of capital that I performed to account for differences in financial risk when estimating the cost of equity for UCDEU.

Q. Does this approach apply to the risk premium analysis?

A. Yes, to the extent that there are differences between the capital structures of the companies used to determine the benchmark ROE and UCDEU, I need to consider whether we are comparing apples-to-apples. However, because the allowed ROE is usually applied to book value capital structures, it is the book value capital structure that is relevant for the risk premium method. I note, however, that for the recent period 2020 to 2025 allowed equity ratios range from 32.27% to 83.18% for natural gas utilities[14] and from 40.73% and 57.04% for water utilities.[15]

C. APPROACH TO ESTIMATING THE COST OF EQUITY

Q. Please describe your approach for determining the cost of equity for UCDEU.

A. As stated above, the standard for establishing a fair rate of return on equity requires that a regulated utility be allowed to earn a return equivalent to what an investor could expect to earn on an alternative investment of equivalent risk. Therefore, my approach to estimating the cost of equity for UCDEU focuses on measuring the expected returns required by

[14] S&P Capital IQ Pro, "Rate Case History," accessed December 31, 2025.

[15] S&P Capital IQ Pro, "Water utility rate case data," accessed December 31, 2025.

investors to invest in companies that face business and financial risks comparable to those faced by UCDEU. Because certain models require market data, my consideration of comparable companies is restricted to those that have publicly traded stock. To this end, I selected two proxy groups consisting of publicly traded companies. The first proxy group consists of companies providing primarily regulated natural gas distribution services, and the second proxy group consists of highly regulated companies in the water utility industry. I consider both the Natural Gas Sample and the Water Utility Sample when deriving estimates of the representative cost of equity according to standard financial models.

I also perform an analysis of historical allowed ROEs for natural gas and water utilities in relation to prevailing risk-free interest rates at the time the ROE was authorized and use the implied allowed risk-premium relationship to estimate a utility cost of equity consistent with current economic conditions. The results of this implied risk premium analysis (sometimes referred to herein as the "Risk Premium" model) are an additional consideration that supports my recommendation and serves as a check on the reasonableness of my market-based results. For clarity, I do not rely on the results of the Risk Premium Model to determine my recommended ROE for UCDEU.

IV. CAPITAL MARKET CONDITIONS AND THE COST OF CAPITAL

Q. What do you cover in this section?

A. In this section, I address recent changes in capital market conditions, the increased volatility in equity and debt markets, how these factors affect the cost of capital and its estimation. Specifically, I address (i) inflation developments and expectations, (ii) interest rate developments, and (iii) investors' perception of the market risk premium.

Q. Why do you discuss capital market conditions in testimony aimed at determining UCDEU's ROE?

A. Capital market conditions are important to cost of equity estimation methodologies and can affect the inputs to the cost of equity models. For example, inputs to the DCF models are affected by the economy as economic growth will affect utility growth rates and stock prices. Consequently, the capital market developments affect the growth rates, dividend yield, and assessment of estimates' reasonableness. Furthermore, the risk-free rate is an input to the CAPM and risk premium model, so that recent and expected developments in government bond yields are important to assess the validity of any measure of the risk-free rate. Similarly, the market equity risk premium ("MRP") (*e.g.*, volatility and changes in investors' risk perceptions) are vital for accurate determinations of the ROE. Lastly, developments in government and utility bond yields can provide valuable context when evaluating UCDEU's cost of debt.

Q. Can you provide a summary of recent events that have impacted capital market conditions?

A. Several key capital market factors indicate that economic and financial uncertainty remains elevated due to persistently high inflation levels, recent imposition of global tariffs, weakness in the labor markets, and recent changes in the Federal Reserve's monetary policy stance. This suggests that ongoing uncertainty in capital market conditions is affecting the compensation required by investors to hold non-risk-free assets.

Inflation hit 9.1% in June 2022, following the COVID-19 pandemic. [16] In response, the Federal Reserve implemented restrictive monetary policies, including increasing the Federal Funds Rate to as high as 5.25% to 5.50% and transitioning to quantitative tightening. [17] While inflation has cooled since its recent peak of 9.1%, inflation has persisted around 3.0% since June 2023 (*i.e.*, almost three years), which is above the Federal Reserve's target of 2.0% on average, despite monetary policy actions (see Figure 4 below).[18]

In September 2024, the Federal Reserve began to cut interest rates as inflation cooled from the post-pandemic high of 9.1% to recent lows of around 3.0%.[19] The Federal Reserve cut rates three times before deciding to pause further rate cuts in January 2025 to allow time to evaluate impacts of the less restrictive monetary policy stance on inflation and the labor market.[20] The Federal Reserve cut rates an additional three times in late-2025.[21] The CPI reading for January 2026 was 2.4%.[22]

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[16] U.S. Bureau of Labor Statistics, "12-month percentage change, Consumer Price Index," https://www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm.

[17] Federal Reserve, "Federal Reserve issues FOMC statement," March 16, 2022, https://www.federalreserve.gov/newsevents/pressreleases/monetary20220316a.htm.

[18] U.S. Bureau of Labor Statistics, "12-month percentage change, Consumer Price Index," https://www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm.

[19] Federal Reserve, "Transcript of Chair Powell's Press Conference," September 18, 2024, p. 3, https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20240918.pdf.

[20] Federal Reserve Bank of New York, "Effective Federal Funds Rate," https://www.newyorkfed.org/markets/reference-rates/effr; Federal Reserve, "Transcript of Chair Powell's Press Conference," January 19, 2025, https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20250129.pdf.

[21] Federal Reserve Bank of New York, "Effective Federal Funds Rate," https://www.newyorkfed.org/markets/reference-rates/effr.

[22] U.S. Bureau of Labor Statistics, "12-month percentage change, Consumer Price Index," https://www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm. *Note*, CPI was 3.3% in March 2026.

The imposition of global tariffs by the U.S. has added further uncertainty to capital markets and inflationary pressure on prices. In April 2025, the U.S. announced significant import tariffs that vary in size depending on the country of origin.[23] The U.S. Supreme Court struck down the International Emergency Economic Powers Act tariffs that the Federal Administration implemented in April 2025. Immediately following the decision, the Federal Administration imposed a 10% global tariff under Section 122 of the Trade Act of 1974. The Federal Administration has also stated its intent to raise global tariffs to 15%.[24] While the specifics of the tariff situation have changed, the imposition of trade tariffs (and uncertainty related to their status) continues to create heightened uncertainty in capital markets. Of note, in June 2025 the Federal Administration imposed higher Section 232 tariffs on steel, aluminum, and copper to 50%, which are critical materials for utility assets.[25]

On May 16, 2025, Moody's Ratings downgraded the United States' credit rating from Aaa to Aa1 citing concerns about the country's debt, deficit, and ability to manage them appropriately.[26] While the impacts of the downgrade remain to be seen, it is another indicator of heightened uncertainty in economic conditions. At the same time, rising debt and deficits along with policy uncertainty have been cited as reasons for an about 11.0%

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[23] The White House, "Regulating Imports with a Reciprocal Tariff to Rectify Trade Practices that Contribute to Large and Persistent Annual United States Goods Trade Deficits," April 2, 2025, https://www.whitehouse.gov/presidential-actions/2025/04/regulating-imports-with-a-reciprocal-tariff-to-rectify-trade-practices-that-contribute-to-large-and-persistent-annual-united-states-goods-trade-deficits/.

[24] Daniel Derochsers, Sam Sutton, and Victoria Guida, "Navarro: Trump will still raise tariffs to 15 percent," March 25, 2026, https://www.politico.com/news/2026/03/25/navarro-trump-tariffs-15-percent-00843828.

[25] *Ibid*.

[26] Moody's Ratings, "Moody's Ratings downgrades United States rating to Aa1 from Aaa; changes outlook to stable," May 16, 2025, https://ratings.moodys.com/ratings-news/443154.

decline of the U.S. dollar against global currencies since the start of 2025—the worst decline since 1973.[27]

Despite inflation remaining above the Federal Reserve's target rate of 2.0% (at around 3.0 percent since June 2023), the Federal Reserve began easing policy in September 2025, implementing three consecutive 25-basis-point rate cuts later in the year amid growing concerns about labor market conditions. As Chairman Powell stated at the December 2025 FOMC press conference:

> *In the near term, risks to inflation are tilted to the upside and risks to employment to the downside—a challenging situation. There is no risk-free path for policy as we navigate this tension between our employment and inflation goals. A reasonable base case is that the effects of tariffs on inflation will be relatively short lived—effectively a one-time shift in the price level. Our obligation is to make sure that a one-time increase in the price level does not become an ongoing inflation problem. But, with downside risks to employment having risen in recent months, the balance of risks has shifted. Our framework calls for us to take a balanced approach in promoting both sides of our dual mandate.*[28]

At its January 2026 meeting, the FOMC decided to maintain the target range of the Federal Funds rate at 3.50% to 3.75%.[29] While the Federal Reserve has recently cut rates, it is important to remember that the pace and extent of any future cuts is unknown.

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[27] Morgan Stanley, "The Depreciation of the Dollar," August 6, 2025, https://www.morganstanley.com/insights/articles/us-dollar-declines.

[28] Federal Reserve, "Transcript of Chair Powell's Press Conference," December 10, 2025, p. 3, https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20251210.pdf.

[29] Federal Reserve, "Press Release," January 28, 2026, p. 2, https://www.federalreserve.gov/monetarypolicy/files/monetary20260128a1.pdf.

The yields on 10-year and 20-year U.S. Treasury bonds are approximately 4.18% and 4.79%, respectively.[30] Similarly, the yields on BBB-rated 10-year and 20-year utility bonds are 5.14% and 5.83%, respectively.[31] By comparison, long-term government bond yields were at similar levels, albeit slightly higher, one year ago, 4.58% and 4.86% respectively.[32] Utility bond yields were 5.60% and 6.03%, respectively, at the end of 2024.[33] Thus, utility bond yield spreads have persisted around 1.1% this year.

Lastly, the evolving situations in Ukraine, the Middle East, and South America have the potential to substantially impact economic policy, financial and commodity markets, and global trade dynamics going forward. For example, recent restrictions on crude oil shipments from the Middle East has resulted in a substantial increase in energy costs and is expected to create additional inflationary pressures.[34] Similarly, the impact of changes to tax policy under the One Big Beautiful Bill Act is yet to be seen. These uncertainties have the potential to impact investors' risk perceptions and the return they require to invest in non-risk-free assets.

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[30] FRED, "Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity," DGS10, https://fred.stlouisfed.org/series/DGS10; FRED, "Market Yield on U.S. Treasury Securities at 20-Year Constant Maturity," DGS20, https://fred.stlouisfed.org/series/DGS20. As of December 31, 2025. *Note,* as of mid-April, yields on 10- and 20-year U.S. Treasury bonds are approximately 10 to 15 basis points higher than in December 2025.

[31] Corix Exhibit 5.7

[32] FRED, "Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity," DGS10, https://fred.stlouisfed.org/series/DGS10; FRED, "Market Yield on U.S. Treasury Securities at 20-Year Constant Maturity," DGS20, https://fred.stlouisfed.org/series/DGS20. As of December 31, 2024..

[33] Corix Exhibit 5.7

[34] Eshe Nelson, "War Will Push U.S. Inflation Above 4% This Year, O.E.C.D. Says," March 26, 2026, https://www.nytimes.com/2026/03/26/business/inflation-prices-energy-iran-oecd.html.

A. INFLATION EXPECTATIONS AND IMPACT

Q. Why is inflation relevant to the return of UCDEU?

A. The return on equity that is being determined now is expected to be in effect for at least a year, so UCDEU will be exposed to changes in inflation throughout this period. In addition, the ROE is measured in nominal terms—meaning that it includes the expected inflation.

Q. What are recent indicators of inflation for the US economy?

A. Inflation, as measured by CPI, reached a high of 9.1% in June 2022. Following the Federal Reserve's monetary policy response, inflation decreased to 3.2% by July 2023.[35] Since then, inflation has stagnated and remained at approximately 3.0% for an extended period of time. Inflation declined earlier this year, reaching 2.3% in April 2025 but subsequently rose to 2.9% in December 2025 due to tariffs and eased to 2.4% in January 2026, but is still above the Federal Reserve's target of 2 percent on average.[36]

While the Federal Reserve started to cut interest rates as a result of softness in labor markets, the Federal Reserve sees persistent levels of inflation going forward. The Federal Reserve's latest projection materials indicate that the FOMC believes inflation will remain elevated above the target level while gradually converge towards 2% in 2028.[37] Blue Chip Economic Indicators ("BCEI") forecasts similar levels of inflation going forward.

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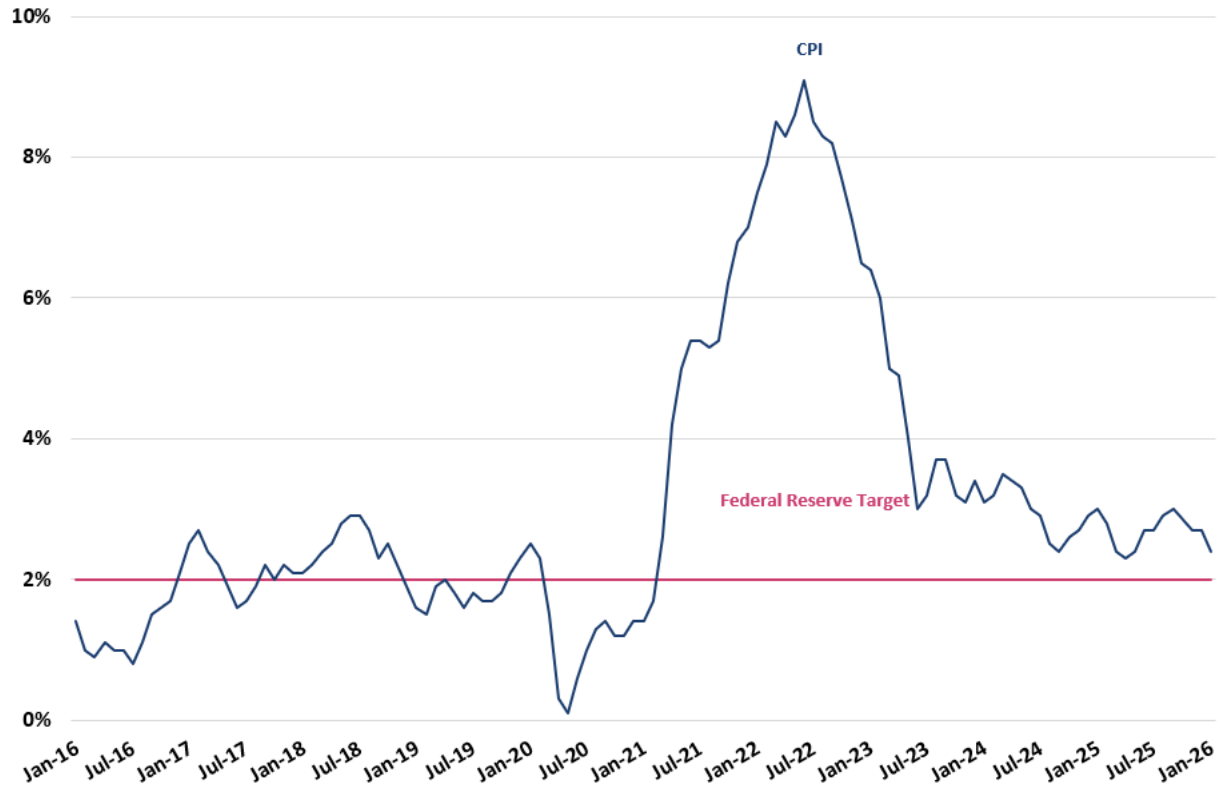
[35] U.S. Bureau of Labor Statistics, "12-month percentage change, Consumer Price Index," https://www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm.

[36] *Ibid* and Federal Reserve, "Transcript of Chair Powell's Press Conference," January 28, 2026, p. 2, https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20260128.pdf. *Note*, as of March 2026, inflation has reached 3.3%.

[37] Federal Reserve, "Summary of Economic Projections," December 10, 2025, p. 2, https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20251210.pdf.

Specifically, BCEI forecasts that CPI will average 2.7% in 2026, 2.5% in 2027, and 2.2 in 2028.[38]

FIGURE 4: ANNUAL CHANGE IN CONSUMER PRICE INDEX (ALL URBAN CONSUMERS)



Source: Bureau of Labor Statistics, CPI for All Urban Consumers, updated through January 2026.

B. INTEREST RATES

Q. How do interest rates affect the cost of capital?

A. The current interest rate environment affects the cost of capital estimation in several ways. Most directly, the CAPM takes as one of its inputs a measure of the risk-free rate.[39] All else equal, the estimated cost of equity using the CAPM decreases (increases) by one percentage point when the risk-free rate decreases (increases) by one percentage point.

[38] Blue Chip Economic Indicators, February 2026, pp. 10-11 (2026 and 2027 forecasts) and October 2025, p. 16 (2028 forecast). *Note*, March 2026 BCEI indicates that CPI will average 2.7% in 2026, 2.4% in 2027, and 2.3% in 2028.

[39] *See* Figure 2.

Therefore, to the extent that prevailing government yields are affected by monetary policy, and rising geopolitical tensions, using current yields as the risk-free rate would affect the CAPM estimate in a manner that may not reflect the forward-looking cost of equity. Therefore, the allowed fair return on equity for UCDEU should reflect the future interest rate environment, specifically the environment at the time the rates being set in this proceeding will be in effect.

In addition, the current interest rate environment can affect the cost of debt for a utility. The yields on government bonds are often considered the risk-free rate of borrowing. Debt holders will require a premium to invest in debt instruments that are not considered risk-free, such as those issued by utility companies. This spread is a reflection of debt investor's perception of uncertainty in capital markets and the risks associated with investing in a particular entity.

Q. What are the relevant developments regarding interest rates?

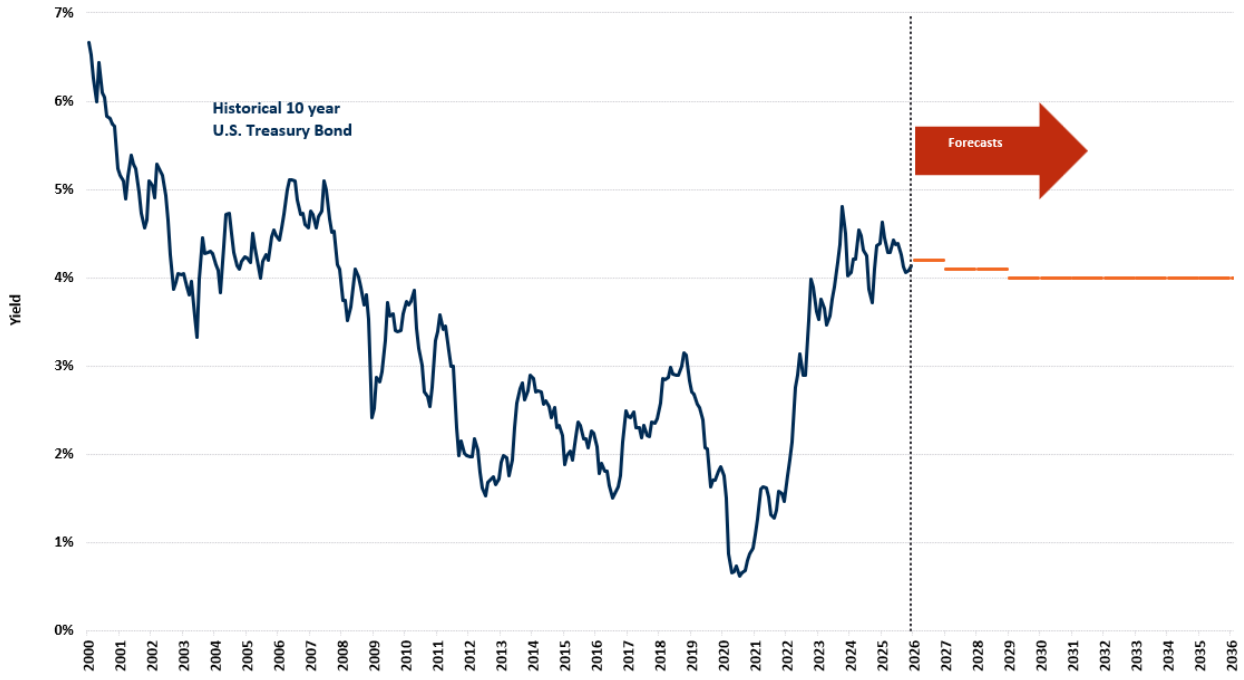
A. Current and forecasted yields on long-term treasury bonds as well as on utility bonds are indicators of the return investors expect on assets that are risk-free and of lower risk than equity, respectively. Due to ongoing economic and financial conditions, yields on 10-year U.S. Treasury bonds are about 4.18%.[40]

Looking forward, professional forecasters as well as government agencies expect Treasury bond yields to remain relatively constant in the near-term. However, they do not expect yields to return to the low levels of the recent past. BCEI forecasts the yield on 10-

[40] FRED, "Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity," DGS10, https://fred.stlouisfed.org/series/DGS10, as of December 31, 2025. *Note*, as of mid-April 2026, yields on 10-year U.S. Government bonds have increased by approximately 15 basis points to 4.32%.

year Treasury bonds will average 4.2% in 2026, 4.1% in 2027, and 4.1% in 2028.[41] As shown in Figure 6 below, while these forecasted yields are declining somewhat from current yields, they remain elevated at levels last seen in 2008 to 2010. Lastly, the FOMC forecasts that the Federal Funds rate will be 3.4% in 2026, 3.1% in 2027, and 3.1% in 2028.[42]

FIGURE 5: HISTORICAL AND PROJECTED TEN-YEAR TREASURY BOND YIELDS



Source: Historical data from Bloomberg. 2026 to 2027 forecasts from Blue Chip Economic Indicators, February 10, 2026 and October 10, 2025.

[41] Blue Chip Economic Indicators, February 2026, pp. 10-11 (2026 and 2027 forecast), October 2025, p. 16 (2028 forecast). *Note*, March 2026 BCEI forecasts that average yields on 10-year U.S. Government bonds will be at similar levels: 4.1% in 2026, 4.1% in 2027, and 4.1% in 2028.

[42] Federal Reserve, "Summary of Economic Projections," December 10, 2025, p. 2, https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20251210.pdf.

C. YIELD SPREADS

Q. Why are bond yield spreads relevant to your cost of equity analysis?

A. Bond yield spreads (also called credit spreads) reflect the premium that investors demand to hold debt securities (specifically corporate or utility bonds) that are not risk-free. Analogously, the Market Risk Premium ("MRP")—which is a key input to the CAPM cost of equity estimation—represents the risk premium that investors require to hold equities rather than risk-free government bonds.

If bond yields are influenced to some extent by the same underlying market factors that drive the systematic risk premium for equities, shifts in directly observable credit spreads can assist with inference about changes in the MRP, which itself must be estimated.[43] More specifically, if both credit spreads and equity premiums are determined in part by the general premium required by investors for bearing systematic risk, then an increase in credit spreads may indicate an increase in the forward-looking MRP.

Q. How does the current spread between utility and U.S. government bond yields compare to historical spreads?

A. At present, the spread between 10-year BBB-rated utility bond yields and 10-year U.S. government bond yields is about 106 basis points.[44] This compares to a long-term historic average spread of 123 basis points prior to the financial crisis, so very comparable.[45] Thus,

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[43] This is the same issue as in cost of capital estimation more generally: the cost of debt can often be directly observed in the form of market bond yields, whereas the cost of equity must be estimated based on financial models.

[44] See Corix Exhibit 5.7. 15-day average from December 10, 2025 to December 31, 2025.

[45] *Ibid.*, Average from April 1991 to 2007.

the risk to invest in a generic BBB-rated utility does not appear to be unusual at this point in time relative to the historic past.

D. RISK PREMIUMS

Q. How do risk premiums affect the cost of equity?

A. Risk premiums provide an indication of the compensation investors expect to hold securities that are not risk-free. If an investor demands a larger risk premium, then the cost of equity will be larger. There are several indicators of risk premium magnitudes in addition to the yield spreads discussed above. For example, indicators such as stock market volatility (*e.g.*, VIX) provide insights into the risk premium required by investors. SKEW provides a useful indicator of volatility over the next 12 months whereas the MRP measures the compensation required to hold a security over a long investment horizon, such as when rate set forth in this proceeding are expected to be in effect.

Q. What is the current evidence regarding market volatility?

A. Measures of market volatility are slightly below long-term averages. For example, VIX is around 18,[46] which is consistent with the long-run average of approximately 20.[47] However, the VIX recently spiked as high as 65.73 on August 5, 2024, which was the highest level of VIX since March 2020.[48] VIX also spiked to 52.33 on April 8, 2025 following the announcement of global trade tariffs.[49] In addition, the Cboe's SKEW index, which measures the market's expectations of tail risk in the S&P 500 (i.e., market returns

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[46] Cboe, "VIX Index Options," accessed February 9, 2026. *Note*, VIX has increased to approximately 30 since the start of the Middle East Conflict.

[47] Cboe, "VIX Index Future & Options, Fact Sheet," p. 1, https://cdn.cboe.com/resources/vix_options/VIX_fact_sheet.pdf.

[48] Cboe, "VIX Index Options," accessed February 9, 2026.

[49] *Ibid*.

at the extremes of a normal distribution) and is a measure of medium-term market risk. A SKEW level of 100 indicates an expectation of normally distributed returns and a rating higher than 100 indicates a higher market expectation of tail risk. SKEW is approximately 145, which is above the long-term average of 121.90 and indicates heightened market uncertainty in the medium term.[50] At the same time, economic uncertainties from persistent inflation, trade tariffs, and geopolitical tensions are also expected to persist at least for the medium term. Taken together, this indicates heightened market levels of risk for investors, at least through the medium term.

Q. What is the Market Risk Premium?

A. In general, a risk premium is the amount of "excess" return—above the risk-free rate of return—that investors require to compensate for taking on risk. As illustrated in Figure 2 above, the riskier the investment, the larger the risk premium investors will require.

The Market Risk Premium is the risk premium associated with investing in the market as a whole. Since the so-called "market portfolio" embodies the maximum possible degree of diversification for investors,[51] the MRP is a highly relevant benchmark indicating the level of risk compensation demanded by capital market participants. It is also a direct input necessary to estimating the cost of equity using the CAPM and other risk-positioning models.

[50] Cboe, "Index Dashboard, Cboe SKEW Index, SKEW Daily Prices," accessed February 12, 2026.

[51] In finance theory, the "market portfolio" describes a value-weighted combination of all risky investment assets (e.g., stocks, bonds, real estate) that can be purchased in markets. In practice, academics and financial analysts nearly always use a broad-based stock market index, such as the S&P 500, to represent the overall market.

Q. Please explain the current evidence related to the Market Risk Premium.

A. As of today, the historic MRP has declined slightly relative to the last few years due to a combination of lower stock market returns and higher returns on government bonds. Specifically, for the period 1926 through year-end 2024, the average historic MRP was 7.31%.[52] At the same time, the forecasted MRP from Bloomberg is 6.17%, measured relative to a 20-year Treasury bond.[53] The forecasted MRP using FERC's methodology, but measured relative to a 20-year U.S. Treasury bond yield, is 8.92% and 7.38% using growth forecasts from IBES and Value Line, respectively.[54] Thus, much of the evidence indicates an MRP is approximately 7% or close to historical average MRP.

Q. Please summarize how the economic developments discussed above have affected the cost of capital.

A. Utilities rely on investors in capital markets to provide funding to support their capital expenditure programs and efficient business operations. Investors consider the risk-return tradeoff in choosing how to allocate their capital among different investment opportunities. It is therefore important to consider how investors view the current economic conditions, including the plausible developments in inflation, the risk-free rate, and risk premiums. As discussed above, inflation persists at levels above the Federal Reserve's target; the imposition of global tariffs is impacting economic growth (and inflation); labor markets are showing signs of weakness; and on-going geopolitical tensions create additional

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[52] Kroll, U.S. Cost of Capital Navigator, December 31, 2024. (Latest available at the time of my ROE analysis. On February 4, 2026 Kroll released year-end 2025 data and the historic MRP estimate (1926 to 2025) increased to 7.37%).

[53] Corix Exhibit 5.7. *Note*, as of mid-April, Bloomberg's forecasted MRP, measured relative to a 20-year U.S. Treasury bond yield, has increased to 6.86%.

[54] Corix Exhibit 5.7, as of December 31, 2025. Measured relative to a 20-year U.S. Treasury Bond yield.

uncertainty for investors. Taken together, there is reason to believe that the heightened economic uncertainty is impacting the return required by investors to invest in non-risk free assets, such as utility equity and debt. Further, as UCDEU is expected to be compensated on the equity component of their rate base, the same factors would affect the Company's equity.

E. IMPACT ON THE COST OF EQUITY ESTIMATION

Q. Please summarize how the economic developments discussed above affect the return on equity that investors require.

A. Utilities rely on investors in capital markets to provide funding to support their capital expenditure programs and efficient business operations as well as the risk-return tradeoff when choosing how to allocate their capital among different investment opportunities. It is therefore important to consider how investors view the current economic conditions, including the expected developments of the risk-free rate, the MRP, and growth in the U.S. GDP. These investors have been dramatically affected by ongoing market uncertainty, so there is reason to believe that their aversions remain elevated.

V. ESTIMATING THE COST OF EQUITY

A. PROXY GROUP SELECTION

Q. What factors do you consider in selecting a proxy group?

A. The cost of capital for any part of a company depends on the risk of the lines of business in which the part is engaged, not on the overall risk of the parent company on a consolidated basis. According to financial theory, the overall risk of a diversified company equals the market-value weighted average of the risks of its components, so electing a proxy sample concentrated in the regulated company's line of business is important. As discussed in more

detail below, UCDEU is a regulated thermal energy utility. Therefore, I would ideally look to other regulated thermal energy utilities whose primary line of business is in the production and distribution of thermal energy to end-users through a network of distribution pipes. Publicly traded companies (*i.e.*, companies whose shares are traded on stock exchanges) are ideal because the best way to infer the cost of capital is to examine evidence from capital markets on companies in a given line of business. Further, the implementation of the DCF Model and CAPM rely on market-based inputs to estimate the ROE.

Q. Please briefly describe the business operations of UCDEU.

A. UCDEU applied to the Commission to construct, own and operate a "heat corporation", as defined by Utah Code Ann. § 54-2-1(16)(a).[55] UCDEU is a thermal energy utility that will offer centralized heating and cooling services to a single customer at the Utah City development in Vineyard, Utah. Utah City is an in-development mixed-use community with residential, commercial, institutional, and civic buildings.[56]

UCDEU will serve approximately 16 million square feet of residential floor space and 1.6 million square feet of commercial floor space within the development. UCDEU will construct its thermal energy system over the next 15 to 20 years, in concert with the development schedule of Utah City. The first buildings in the development are expected to commence service in 2026. Once the system is fully built-out, it will have capacity to serve

[55] I understand that on February 2, 2026, the Commission gave conditional approval UCDEU, subject to filing of permits and filing a general rate case with a regulatory framework for rate design and terms of service. *See* Docket 25-2666-01.

[56] Application of Corix Utah City Heating and Cooling LLC for a Certification of Public Convenience and Necessity, Commission Docket No. 25-2666-01, p. 1-2.

197,905 thousand British Thermal Units per hour ("MBH") of heating capacity and 276,384 MBH of cooling capacity.[57] UCDEU's thermal energy system will not displace natural gas or electric service to buildings in the community. Buildings will still rely on electricity and natural gas for lighting, plug loads, cooking demands, fireplaces, and outdoor amenities. As of now, UCDEU has a single customer, Flagborough, the developer of Utah City.

To provide heating and cooling service to the development, UCDEU will construct two interim and three permanent energy centers ("IECs"). The IECs will contain natural gas boilers for heating demand and electric chillers for cooling demand. The thermal energy will be transferred to a fluid and sent out onto the Distribution Piping System ("DPS") that will run underground throughout the community. The DPS will consist of separate supply and return lines for heating and cooling each. Each building in the community will be connected to the DPS. Thermal energy is transferred to the building at an Energy Transfer Station ("ETS") located in a mechanical room. From there, the thermal energy is transferred to the building's internal HVAC systems for heating and cooling purposes.

Q. What would be an ideal proxy group to estimate the cost of equity for UCDEU?

A. An ideal proxy group is one that replicates the various aspects of UCDEU's business operations:

- Rate-regulated by a state public utility commission;

[57] Direct Testimony of Jason Owen, Application of Corix Utah City Heating and Cooling LLC for a Certification of Public Convenience and Necessity, Commission Docket No. 25-2666-01, p. 2-3.

- Currently under development; that is, it has no (or soon relatively few) assets currently in operation to provide utility service;
- Serves a single customer that represents limited number of mixed use buildings within a relatively small geographic area (350-acre site); and
- Provides heating and cooling utility service by converting natural gas or electricity into thermal energy and distributing it through a network of underground pipes to end-users.

While it is not possible to construct a proxy group of sufficient size[58] that replicates all of these characteristics, a starting place is to identify a proxy group consisting of other publicly traded thermal energy utilities.

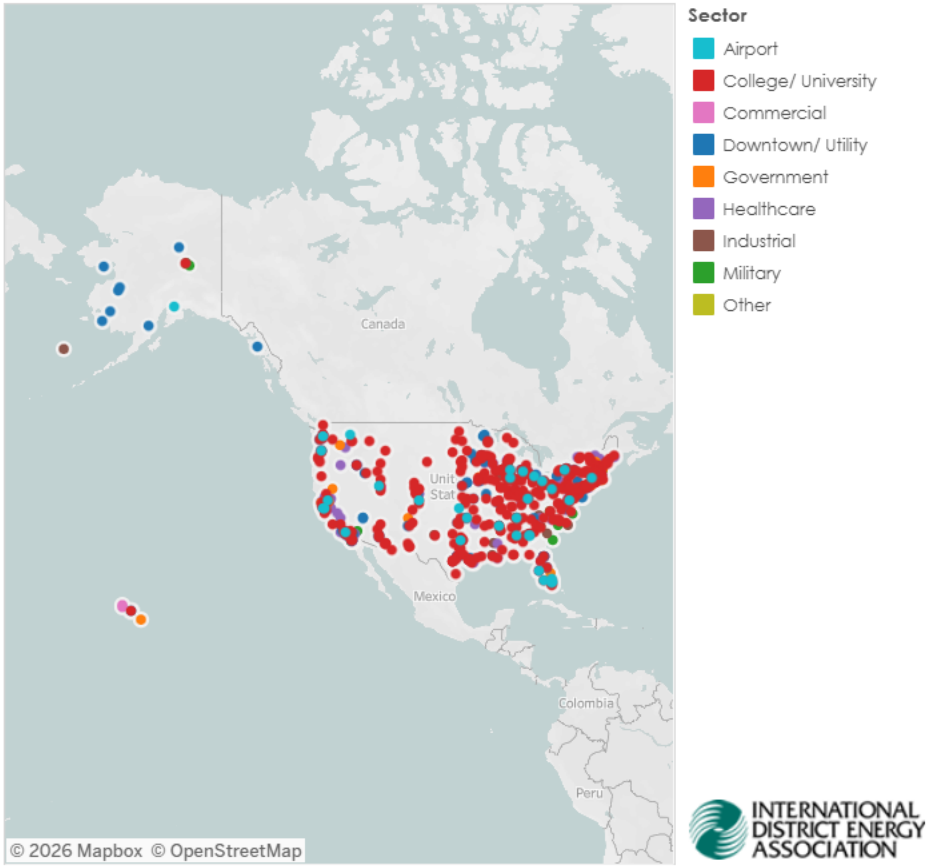
Q. Please describe your search for potential thermal energy utility proxy companies.

A. To identify potential thermal energy utility proxy companies, I first identified the universe of thermal energy utilities operating in the U.S. Specifically, I relied on a list of district energy utilities in the U.S. published by the International District Energy Association ("IDEA").[59] The IDEA identifies several dozen district energy utilities and classifies them into one of nine sector categories, as shown in Figure 6 below.

[58] That is, there are not enough companies in the proxy sample to provide a statistically meaningful ROE estimate. I note that the FERC requires at least four and ideally five companies in a proxy group.

[59] International District Energy Association, "Map of District Energy in North America," https://www.districtenergy.org/resources/resources/system-maps.

FIGURE 6: MAP OF DISTRICT ENERGY UTILITIES IN THE U.S.[60]



Next, I reviewed IDEA's universe of utilities to identify those that are publicly traded or owned by a publicly traded entity. A fundamental requirement for a proxy company is that it is publicly traded because the CAPM and DCF models rely on market data (*e.g.*, stock price, beta) to estimate the cost of equity. This eliminated utilities from several sectors (*e.g.*, college/university, government, military, and other[61]). I also eliminated sectors where utility service was not the primary line of business and would therefore bias the ROE estimates (*e.g.*, airports, healthcare).

[60] *Ibid*.

[61] The only utility categorized as "Other" by IDEA is Holderness School, a college preparatory school near Plymouth, New Hampshire.

This resulted in three remaining categories of district energy utilities: Downtown/Utility, Commercial, and Industrial. I reviewed the utilities in these categories and found that they largely consisted of non-publicly traded entities, municipal or cooperative utilities, or are affiliated with other businesses. Through this review, I identified five pure-play district energy utility companies; however, all of the companies are private. The most promising potential proxy company was Con Edison, which operates a steam distribution system in New York City that is rate regulated by the New York Public Service Commission. However, Con Edison's steam utility only accounts for approximately 5% of the company's total utility assets.[62] Thus, the company's market data will mostly reflect the business risks of Con Edison's electric and natural gas utility operations that comprise the other 95% of its total utility assets. Other publicly traded companies like Veolia Energy and Suez Energy faced similar challenges. Figure 7 below provides a summary of the five non-public, pure-play thermal energy utilities and provides examples of utilities included in the Downtown/Utility, Commercial, and Industrial categories.

[62] Consolidated Edison, Inc. 2024 Annual Report, pp. 20, 23, and 25, https://investor.conedison.com/static-files/bbd5d783-3d2b-4865-8864-a8db4ed5abef.

FIGURE 7: EXAMPLES OF POTENTIAL THERMAL ENERGY UTILITY PROXY COMPANIES

		Designation [1]	Public/Private [2]
Creative Energy	[A]	Multiple End-Use Sectors	Private
Enwave Energy	[B]	Multiple End-Use Sectors	Private
Viscinity Energy	[C]	Multiple End-Use Sectors	Private
Centrio Energy	[D]	Multiple End-Use Sectors	Private
Ever-Green Energy	[E]	Multiple End-Use Sectors	Private
Westin Princeville Ocean Resort Villas	[F]	Commercial	Private
Sheraton Kauai Resort	[G]	Commercial	Private
Fairway Market at Red Hook	[H]	Commercial	Private
District Energy Corporation of Lincoln and Lancaster	[I]	Downtown/Utility	Private
Veolia Energy NA - Oklahoma City	[J]	Downtown/Utility	Public
Duluth Steam Cooperative Association	[K]	Downtown/Utility	Private
Con Edison	[L]	Downtown/Utility	Public
Suez Energy NA	[M]	Industrial	Public
Craven County Industrial Park	[N]	Industrial	Private
O'Hair Shutters	[O]	Industrial	Private

Sources and Notes:
[A]: https://creative.energy/.
[B]: https://www.enwave.com/.
[C]: https://www.vicinityenergy.us/.
[D]: https://www.centrioenergy.com/our-districts/.
[E]: https://www.ever-greenenergy.com/ .
[F]-[O]: International District Energy Association. System Maps. Retrieved October 21, 2025, from https://www.districtenergy.org/resources/resources/system-maps.
[J]: Veolia Energy NA - Oklahoma City represents a small percentage of total assets of Veolia Environnement S.A..
[M]: Suez Energy NA represents a small percentage of total assets of Engie S.A..

Taken together, I am unable to identify a sufficient number of publicly traded companies with a significant proportion of their business operations devoted to thermal energy utility service to construct a thermal energy utility proxy group to meaningfully estimate UCDEU's ROE.

Q. How did you determine appropriate proxy samples to estimate the cost of equity of UCDEU?

A. As discussed above, it is not possible to identify publicly traded sample companies that replicate every aspect of UCDEU's risk profile. However, ensuring that the proxy sample companies have their business operations concentrated in similar lines of business and/or business environments is an appropriate starting point for selecting a proxy group of comparable risk to the target companies.

To this end, I have selected two samples—a Natural Gas Sample and a Water Utility Sample—each with different advantages (and disadvantages) when it comes to capturing relevant comparable business risk characteristics for estimating UCDEU's cost of equity. The proxy companies are similar to UCDEU in that they are regulated by state utility commissions, distribute a commodity to customers through a network of distribution pipes, and rely on substantial capital investments to provide service to end-users.

Q. Why did you select separate samples for natural gas utilities and water distribution utilities?

A. The two samples have different advantages (and disadvantages) in estimating the cost of capital for UCDEU. The Natural Gas Sample is essentially a pure-play local distribution proxy sample, with the majority of business activities centered on rate-regulated distribution activities. Natural Gas utilities operate a network of distribution pipes to serve end-users. A significant portion of natural gas utility demand is to serve heating demand, similar to services provided by UCDEU. However, the sample is relatively small due to the limited number of publicly traded natural gas utility companies in the U.S.

The Water Utility Sample also consists of pure-play distribution companies. To an even greater extent than the Natural Gas Sample, the publicly traded water companies are more or less dedicated to providing a utility distribution service and earn the vast majority of their cash flows from rate-regulated operations. The rate regulation of investor-owned water utilities is generally quite similar to regulation of natural gas distribution utilities (and regulated thermal energy utilities).

Q. Please summarize how you selected the Natural Gas and Water Utility Samples?

A. To identify companies suitable for inclusion in the Natural Gas and Water Utility Samples, I started with *Value Line*'s list of publicly traded companies classified as natural gas utilities or water utilities.[63] This resulted in an initial group of seven natural gas utilities and five water utilities. I then eliminated companies by applying additional selection screening criteria designed to remove companies with unique circumstances that may bias the cost of equity estimates. My sample selection criteria require that the sample companies have the following:

- Investment grade credit rating from a major credit rating agency;
- No significant merger activity in the previous five years;
- No recent dividend cuts or other activity that could cause the growth rates or beta estimates to be biased;
- A significant portion of its assets dedicated to rate-regulated activities; and
- Market capitalization of at least $300 million for liquidity purposes.[64]

[63] *Note*, *Value Line* does not provide a list of companies classified as thermal energy utilities.

[64] No potential proxy companies were eliminated solely because they did not meet this criterion. RGC Resources Inc. and Global Water Resources failed this criterion because they had market capitalizations of $220 million and $243 million, respectively. However, in addition, neither company has an investment grade credit rating.

Applying these selection criteria ultimately resulted in proxy samples consisting of seven natural gas utilities and five water utilities. Figure 8 and Figure 9 list the companies included in the Natural Gas and Water Utility samples and highlights some of their important financial characteristics. Specifically, it reports their annual revenues for the most recent four quarters, their market capitalization, credit rating, *Value Line* beta, and analyst growth rate estimates. It also includes a categorization of regulated (R) or mostly regulated (MR) based on the percentage of each utilities' assets that are devoted to regulated activities.

FIGURE 8: NATURAL GAS UTILITY PROXY GROUP

Company	Annual Revenue (Q3 2025) ($MM)	Regulated Assets	Market Cap. (Q4 2025) ($MM)	Value Line Beta	S&P Credit Rating	Long-Term Growth Estimate
	[1]	[2]	[3]	[4]	[5]	[6]
Atmos Energy	$4,623	R	$27,001	0.75	A-	6.7%
Chesapeake Utilities	$886	R	$2,978	0.70	BBB+	8.3%
New Jersey Resources	$2,096	R	$4,652	0.75	A-	7.1%
NiSource Inc.	$6,327	R	$19,843	0.85	BBB+	8.0%
Northwest Natural	$1,266	R	$1,946	0.75	A-	5.0%
ONE Gas Inc.	$2,369	R	$4,662	0.75	A-	6.3%
Southwest Gas	$3,280	R	$5,834	0.75	BBB+	11.8%
Gas Sample Average	$2,978		$9,559	0.76	A-	7.6%

Sources and Notes:
[1]: S&P Capital IQ as of December 31, 2025.
[2]: Key R - Regulated (80% or more of assets regulated).
MR - Mostly Regulated (less than 80% of assets regulated).
[3]: See Schedule No. JF-3 Panels A through I.
[4]: See Schedule No. JF-10
[5]: S&P Capital IQ as of December 31, 2025.
[6]: See Schedule No. JF-5.

FIGURE 9: WATER UTILITY PROXY GROUP

Company	Annual Revenue (Q3 2025) ($MM)	Regulated Assets	Market Cap. (Q4 2025) ($MM)	Value Line Beta	S&P Credit Rating	Long-Term Growth Estimate
	[1]	[2]	[3]	[4]	[5]	[6]
Amer. States Water	$637	R	$2,841	0.75	A	6.4%
Artesian Res Corp	$112	R	$329	0.70	A	NA
California Water	$1,002	R	$2,591	0.80	A+	7.3%
Middlesex Water	$195	R	$955	0.75	A	8.0%
York Water Co. (The)	$77	R	$477	0.70	A-	NA
Water Sample Average	$405		$1,438	0.74	A	7.2%

Sources and Notes:
[1]: S&P Capital IQ as of December 31, 2025.
[2]: Key R - Regulated (80% or more of assets regulated).
MR - Mostly Regulated (less than 80% of assets regulated).
[3]: See Schedule No. JF-3 Panels A through I.
[4]: See Schedule No. JF-10
[5]: S&P Capital IQ as of December 31, 2025.
[6]: See Schedule No. JF-5.

B. CAPITAL STRUCTURE FOR COST OF EQUITY ESTIMATION

Q. What capital structure do you rely on to estimate the cost of equity for UCDEU?

A. UCDEU is requesting a deemed capital structure consisting of 50.0 percent equity and 50.0 percent debt capital, consistent with the Infrastructure Agreement it entered into with its only customer, Flagborough, and the Company's pro forma financial statements.[65] As such, I estimate UCDEU's cost of equity using a 50.0 percent equity capital structure. I discuss UCDEU's requested capital structure in additional detail in Section VIII below.

C. THE CAPM BASED COST OF EQUITY ESTIMATION

Q. How do you estimate the cost of equity?

A. As noted earlier, I apply two general methodologies—the CAPM and DCF model—both of which are standard financial models used to estimate a company's cost of equity. Because the cost of equity cannot be observed and therefore must be estimated, it is

[65] *Note*, the Company currently does not have a capital structure that is authorized by the Commission for ratemaking purposes since this is UCDEU's first rate application before the Commission.

important to use multiple models. No single model should be relied upon in isolation because all models have relative strengths and weaknesses. Some models perform better under certain economic conditions than others, but each provides information for the analyst to evaluate when forming an opinion on the cost equity.

To develop the CAPM estimates, I consider a range of sensitivities to reflect well-documented empirical deficiencies in the CAPM when used in conjunction with an equity market index. These sensitivities are called the Empirical CAPM ("ECAPM"). To develop the DCF estimates, I employ two versions of the DCF model: a single-stage and multi-stage DCF model. I also consider a Risk Premium Model which estimates the implied ROE based on a statistical analysis of the premium of authorized ROE to prevailing bond yields at the time the ROE was authorized.

Q. Please briefly explain the CAPM.

A. The Capital Asset Pricing Model assumes the collective investment decisions of investors in capital markets will result in equilibrium prices for all risky assets such that the returns investors expect to receive on their investments are commensurate with the risk of those assets relative to the market as a whole. The CAPM posits a risk-return relationship known as the Security Market Line (see Figure 2), in which the required expected return on an asset (above the risk-free return) is proportional to that asset's relative risk as measured by that asset's beta.

More precisely, the CAPM states that the cost of capital for an investment, S (e.g., a particular common stock), is determined by the risk-free rate plus the stock's systematic

risk (as measured by beta) multiplied by the market risk premium. Mathematically, the relationship is given by the following equation

$$\boldsymbol{r_s = r_f + \beta_s \times MRP} \quad (1)$$

Where,

$\boldsymbol{r_S}$ is the cost of capital for investment S;

$\boldsymbol{r_f}$ is the risk-free interest rate;

$\boldsymbol{\beta_S}$ is the beta risk measure for the investment S; and

$\boldsymbol{MRP}$ is the market equity risk premium.

The CAPM is a "risk-positioning model," which operates on the principle (corroborated by empirical data) that investors price risky securities to offer a higher expected rate of return than safe securities. It says that an investment, whose returns do not vary relative to market returns, should receive the risk-free interest rate (that is the return on a zero-risk security, the y-axis intercept in Figure 2), whereas investments of the same risk as the overall market (i.e., those that by definition have average systematic market risk) are priced so as to expect to return the risk-free rate plus the MRP. Further, it says that the risk premium of a security over the risk-free rate equals the product of the beta of that security and the MRP.

1. INPUTS TO THE CAPM

Q. What inputs does your implementation of the CAPM require?

A. As demonstrated by equation (1) above, estimating the cost of equity for a given company requires a measure of the risk-free rate of interest and the MRP, as well as a measure of the stock's beta. There are several choices and sources of data that inform the selection of these

inputs. I discuss these issues below. (Additional technical details, along with a discussion of the finance theory underlying the CAPM is provided in Corix Exhibit 5.2).

Q. What values do you use for the risk-free rate of interest?

A. I use the yield on a 20-year U.S. Government Bond as the risk-free rate for purposes of my analysis. Recognizing the fact that the cost of capital set in this proceeding will be in effect during the Test Period, I rely on the forecasted yields on U.S. Government bond yields in 2026 and 2027. Specifically, Blue Chip Economic Indicators predicts that the yields on a 10-year U.S. government bond will be 4.1 percent in both 2026 and 2027.[66] I then adjust the average forecasted yield upwards by 50 basis points, which is my estimate of the representative maturity premium for the 20-year over the 10-year U.S. Government Bond.[67] This gives me a forecasted risk-free rate of 4.6 percent.[68]

Q. What value did you use for the Market Risk Premium?

A. Like the cost of capital itself, the market equity risk premium ("MRP") is a forward-looking concept. It is by definition the premium above the risk-free interest rate that investors can expect to earn by investing in a value-weighted portfolio of all risky investments in the market. The premium is not directly observable and must be inferred or forecasted based on known market information. One commonly used method for estimating the MRP is to measure the historical average premium of market returns over the income returns on

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[66] Blue Chip Economic Indicators, January 2026, p. 10-11. I note the January 2026 BCEI survey was conducted in December 2025 and reflects the sentiment of investors at the time of my analysis. In the February 2026 edition, BCEI forecasts the yield will be 4.2% in 2026 and 4.1% in 2027.

[67] This maturity premium is estimated by comparing the average excess yield on 20-year versus 10-year U.S. Government Bonds over the period 1994 - 2025, using data from Bloomberg.

[68] I note the current yield on 20-year U.S. Treasury bonds is 4.79% (as of December 31, 2025), so the forecasted bond yield is conservative relative to the current yield. *Source*: FRED, "Market Yield on U.S. Treasury Securities at 20-Year Constant Maturity, Quoted on an Investment Basis," DGS20, https://fred.stlouisfed.org/series/DGS20.

government bonds over some long historical period. Kroll performs such a calculation of the MRP using data from several sources.[69] The average market equity risk premium from 1926 to the present is 7.31 percent with slightly shorter or longer periods resulting in slightly higher or lower MRPs.[70] I use this historical value of the MRP as one input scenario to my CAPM analyses.

However, investors may require a higher or lower risk premium, reflecting the investment alternatives and aggregate level of risk aversion at any given time. As explained in Section IV, there is evidence that investors' levels of risk aversion remain elevated relative to the recent past due to elevated inflation, interest rates, geopolitical tensions, and commodity prices. In recognition of this evidence, I also perform the CAPM calculations using Bloomberg's forward-looking estimate of 6.17 percent for the market equity risk premium.[71] Bloomberg's forward-looking estimate of the MRP is below the historical average and the forward-looking estimate of the MRP. I estimate using the FERC methodology (which is 8.92% using *IBES* growth rates and 7.38% using *Value Line* growth rates). This evidence suggests that a more reasonable estimate of MRP is closer to the long-term historic average of approximately 7.00%.

Q. Please summarize two scenarios utilized in your CAPM and ECAPM analyses.

A. The risk-free rate and market risk premium for the two scenarios are displayed in Figure 10 below. Scenario 1 and Scenario 2 both use the forecasted 20-year U.S. government bond

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[69] Kroll Cost of Capital Navigator, U.S. Cost of Capital Module, December 31, 2024. (Latest available estimate at the time of my ROE analysis. On February 4, 2026 Kroll released year-end 2025 data and the 1926 to 2025 historic MRP estimate increased to 7.37%).

[70] *Ibid.*

[71] Measured over a 20-year government bond (See Corix Exhibit 5.7)

yield of 4.6% for 2026 and 2027. In Scenario 1, I pair this risk-free rate with the long-term average historic MRP of 7.31%, as estimated by Kroll. In Scenario 2, I pair the risk-free rate with Bloomberg's forecasted MRP of 6.17%.

FIGURE 10: CAPM AND ECAPM SCENARIOS

	Scenario 1	Scenario 2
Risk-Free Interest Rate	4.60%	4.60%
Market Risk Premium	7.31%	6.17%

Q. What Betas did you use for the companies in your sample?

A. I used *Value Line* betas, which are estimated using the most recent five years of weekly historical returns data.[72] The *Value Line* levered equity betas are reported in Figure 8 and Figure 9 above. Importantly, these betas—which are measured (by *Value Line*) using the market stock return data of the proxy companies—reflects the level of financial risk inherent in the proxy companies' market value leverage ratios over the estimation period. Because UCDEU's regulatory capital structure includes a higher proportion of debt financing than does the market data of the proxy companies used to estimate the ROE, the financial risk associated with an equity investment in UCDEU's rate base is correspondingly greater than the financial risk borne by investors in the proxy companies' publicly traded stock. Consequently, standard textbook techniques are applied to unlever the Value Line betas reported in Figure 8 and Figure 9 above and relever the resulting asset betas at UCDEU's requested deemed capital structure of 50.0 percent equity.[73]

[72] See Value Line Glossary, accessible at http://www.valueline.com/Glossary/Glossary.aspx.

[73] The Technical Appendix (Corix Exhibit 5.2) to this testimony provides a detailed description of the standard textbook formulas used to implement the "Hamada" technique for unlevering measured equity betas based on the

2. THE EMPIRICAL CAPM

Q. What other equity risk premium model do you use?

A. Empirical research has long shown that the CAPM tends to overstate the actual sensitivity of the cost of capital to beta: low-beta stocks tend to have higher risk premiums than predicted by the CAPM and high-beta stocks tend to have lower risk premiums than predicted.[74] A number of variations on the original CAPM theory have been proposed to explain this finding, but the observation itself can also be used to estimate the cost of capital directly, using beta to measure relative risk by making a direct empirical adjustment to the CAPM.

The second version of the CAPM that I employ makes use of these empirical findings. It estimates the cost of capital with the equation,

$$\boldsymbol{r_S = r_f + \alpha + \beta_S \times (MRP - \alpha)} \quad (2)$$

where $\boldsymbol{\alpha}$ is the "alpha" adjustment of the risk-return line, a constant, and the other symbols are defined as for the CAPM (see equation (1) above).

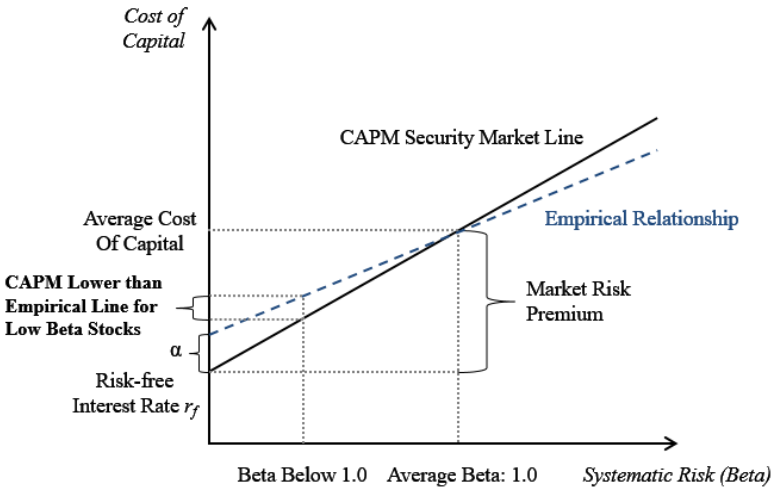
I label this model the Empirical Capital Asset Pricing Model, or "ECAPM." The alpha adjustment has the effect of increasing the intercept but reducing the slope of the Security Market Line (see Figure 2), which results in a Security Market Line that more closely matches the results of empirical tests, as shown in Figure 11 below. In other words,

proxy companies' capital structures to calculate "asset betas" that measure the proxy companies' business risk independent of the financial risk impact of differing capital structures. The proxy group average asset betas are then relevered at the target capital structure (i.e., UCDEU's regulatory capital structure), with the precise relevered beta depending on the specific version of the unlevering/relevering formula employed.

[74] The Technical Appendix (Corix Exhibit 5.2) to this evidence for references to relevant academic articles.

the ECAPM produces more accurate predictions of eventual realized risk premiums than does the CAPM.

FIGURE 11: THE EMPIRICAL SECURITY MARKET LINE



Q. Why do you use the ECAPM?

A. Academic research finds that the CAPM has not generally performed well as an empirical model. One of its shortcomings is directly addressed by the ECAPM, which recognizes the consistent empirical observation that the CAPM underestimates the cost of capital for low beta stocks. In other words, the ECAPM is based on recognizing that the actual observed risk-return line is flatter and has a higher intercept than that predicted by the CAPM. The alpha parameter (α) in the ECAPM adjusts for this fact, which has been established by repeated empirical tests of the CAPM. In summary, these studies estimate alpha parameters that range between 1 percent[75] and 7.32 percent.[76] I apply an alpha parameter of 1.5 percent

[75] Black, Fischer. Beta and Return. *The Journal of Portfolio Management* 20 (Fall): 8-18, 1993.

[76] Fama, Eugene F. and Kenneth R. French. 1992. The Cross-Section of Expected Stock Returns. *Journal of Finance* 47 (June): 427-465.

in my application of the ECAPM. Corix Exhibit 5.2 (Technical Appendix) provides further discussion of the empirical findings that have tested the CAPM and also provides documentation for the magnitude of the adjustment, α.

Q. Have other regulatory commissions adopted the ECAPM methodology?

A. Yes, several other regulatory Commissions have adopted the ECAPM methodology. Specific examples that I am aware of include the Mississippi Public Service Commission[77] and the New York State Public Service Commission.[78] Also, the Alabama Public Service Commission recognized the methodology.[79] Importantly, all of these regulators rely on the ECAPM in conjunction with adjusted betas and the California Public Utilities Commission did not distinguish between CAPM and ECAPM when reporting results.[80] Regardless, there is little difference between the CAPM and ECAPM results at this point in time.

3. RESULTS FROM THE CAPM BASED MODELS

Q. Please summarize the results of the CAPM-based models.

A. The results of the CAPM and ECAPM estimation for the two proxy groups are presented in Figure 12 and Figure 13 below. The range of results for each model (CAPM and ECAPM) reflects the application of different specific versions of the textbook formulas used to account for the impact of differences in financial leverage on financial risk. In the figures below, I show estimates measured relative to UCDEU's requested 50.0 percent equity capital structure.

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[77] Mississippi Power, PEP-5A, p. 24.

[78] NY PSC Case 19-E-0065, Staff Finance Panel Testimony, May 2019, p. 141.

[79] Alabama Public Service Commission, "Report and Order in Dockets 18117 and 18416," August 21, 2013, p. 13.

[80] California Public Utilities Commission, "Decision 19-12-056," December 19, 2019.

FIGURE 12: NATURAL GAS UTILITY SAMPLE CAPM RESULTS AT 50.0% EQUITY

Estimated Return on Equity	Scenario 1 [1]	Scenario 2 [2]
Gas Sample		
Hamada Adjustment Without Taxes		
CAPM	11.1%	10.1%
ECAPM (α = 1.5%)	11.3%	10.3%
Hamada Adjustment With Taxes		
CAPM	10.9%	10.0%
ECAPM (α = 1.5%)	11.1%	10.2%

Sources and Notes:
[1]: Long-Term Risk Free Rate of 4.60%, Long-Term Market Risk Premium of 7.31%.
[2]: Long-Term Risk Free Rate of 4.60%, Long-Term Market Risk Premium of 6.17%.

FIGURE 13: WATER UTILITY SAMPLE CAPM RESULTS AT 50.0% EQUITY

Estimated Return on Equity	Scenario 1 [1]	Scenario 2 [2]
Water Sample		
Hamada Adjustment Without Taxes		
CAPM	12.6%	11.4%
ECAPM (α = 1.5%)	12.5%	11.2%
Hamada Adjustment With Taxes		
CAPM	12.1%	10.9%
ECAPM (α = 1.5%)	12.1%	10.9%

Sources and Notes:
[1]: Long-Term Risk Free Rate of 4.60%, Long-Term Market Risk Premium of 7.31%.
[2]: Long-Term Risk Free Rate of 4.60%, Long-Term Market Risk Premium of 6.17%.

Q. How do you interpret the results of your CAPM and ECAPM analyses?

A. The ROE estimates from the CAPM range from 10.0 percent to 11.1 percent for the Natural Gas Sample and range from 10.9 percent to 12.6 percent for the Water Utility Sample, at UCDEU's requested deemed 50.0 percent equity capital structure. Based on these results, I find a reasonable range of ROE estimates from the CAPM to be 10.0 percent to 11.0

percent (midpoint 10.5 percent) for the Natural Gas Sample and 11.25 percent to 12.0 percent (midpoint 11.625 percent) for the Water Utility Sample, at 50.0 percent equity.[81]

The ECAPM ROE estimates range from 10.2 percent to 11.3 percent for the Natural Gas Sample and range from 10.9 percent to 12.5 percent for the Water Utility Sample, at UCDEU's requested deemed 50.0 percent equity capital structure. Based on these results, I find a reasonable range of ROE estimates of the CAPM to be 10.25 percent to 11.25 percent (midpoint 10.75 percent) for the Natural Gas Sample and 11.25 percent to 12.0 percent (midpoint 11.625 percent) for the Water Utility Sample, at 50.0 percent equity.[82]

D. DCF BASED ESTIMATES

1. SINGLE AND MULTI-STAGE DCF MODELS

Q. Please describe the DCF model's approach to estimating the cost of equity.

A. The DCF method assumes that the market price of a stock is equal to the present value of the dividends that its owners expect to receive. The method also assumes that this present value can be calculated by the standard formula for the present value of a cash flow—literally a stream of expected "cash flows" discounted at a risk-appropriate discount rate. When the cash flows are dividends, that discount rate is the cost of equity capital:

$$\boldsymbol{P_0} = \frac{\boldsymbol{D_1}}{\boldsymbol{1+r}} + \frac{\boldsymbol{D_2}}{\boldsymbol{(1+r)^2}} + \frac{\boldsymbol{D_3}}{\boldsymbol{(1+r)^3}} + \cdots + \frac{\boldsymbol{D_T}}{\boldsymbol{(1+r)^T}} \quad (3)$$

Where,

$\boldsymbol{P_0}$ is the current market price of the stock;

$\boldsymbol{D_t}$ is the dividend cash flow expected at the end of period $\boldsymbol{t}$;

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[81] To derive my reasonable range, I then eliminate the highest and lowest CAPM estimates and then round the resulting range to the nearest ¼ of a percentage point.

[82] To derive my reasonable range, I then eliminate the highest and lowest ECAPM estimates and then round the resulting range to the nearest ¼ of a percentage point.

$\boldsymbol{T}$ is the last period in which a dividend cash flow is to be received; and

$\boldsymbol{r}$ is the cost of equity capital.

Importantly, this formula implies that if the current market price and the pattern of expected dividends are known, it is possible to "solve for" the discount rate r that makes the equation true. Therefore, a DCF analysis can be used to estimate the cost of equity capital implied by the market price of a stock and market expectations for shareholders' future cash flow (e.g., dividends).

Many DCF applications assume that the growth rate lasts into perpetuity, so the formula can be rearranged algebraically to directly estimate the cost of capital. Specifically, the implied DCF cost of equity can then be calculated using the well-known "DCF formula" for the cost of capital:

$$\boldsymbol{r = \frac{D_1}{P_0} + g = \frac{D_0}{P_0} \times (1 + g) + g} \quad (4)$$

where $\boldsymbol{D_0}$ is the current dividend, which investors expect to increase at rate $\boldsymbol{g}$ by the end of the next period, and over all subsequent periods into perpetuity.

Equation (4) says that if equation (3) holds, the cost of capital equals the expected dividend yield plus the (perpetual) expected future growth rate of dividends. I refer to this as the simple (single-stage) DCF model; it is also known as the Gordon Growth model, in honor of its originator, Professor Myron J Gordon.

Q. Are there other versions of the DCF model?

A. Yes. There are many alternative versions, notably (i) multi-stage models, (ii) models that use cash flow rather than dividends, or versions that combine aspects of (i) and (ii). One such alternative expands the Gordon Growth model to three stages. In the multi-stage

model, earnings and dividends can grow at different rates but must grow at the same rate in the final, constant growth rate period.[83]

In my implementation of the multi-stage DCF, I assume that companies grow their dividend for five years at the forecasted company-specific rate of earnings growth, with that growth then tapering over the next five years toward the growth rate of the overall economy (*i.e.*, the long-term gross domestic product ("GDP") growth rate forecasted to be in effect ten years or more into the future).

2. DCF INPUTS

Q. What growth rate information do you use?

A. The first step in my DCF analysis (either constant growth or multi-stage formulations) is to examine a sample of investment analysts' forecasted earnings growth rates for companies in my samples. For the single-stage DCF and for the first stage of the multi-stage DCF, I use investment analyst forecasts of company-specific growth rates sourced from Value Line and S&P Capital IQ.[84]

For the long-term growth rate for the final, constant-growth stage of the multistage DCF estimates, I use the long-term U.S. GDP growth forecast of 4.0 percent from Blue Chip Economic Indicators.[85] Thus, the long-run (or terminal) growth rate in the multi-stage model is nominal GDP growth.

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[83] See Corix Exhibit 5.2 (Technical Appendix) for further discussion of the various versions of the DCF model, as well as the details of the specific versions I implement in this proceeding.

[84] As of the date of my analysis, Artesian Resources Corp. and the York Water Company did not have published analyst growth rate forecasts from S&P Capital IQ nor Value Line. Therefore, these companies were excluded from the DCF analyses.

[85] Blue Chip Economic Indicators, October 2025, p. 16 (latest available long-term forecast as of the date of my analysis).

Q. Please explain how input data can affect the DCF models.

A. The single-stage DCF models require forecast growth rates that reflect investor expectations about the pattern of dividend growth for the companies over a sufficiently long horizon, but estimates are typically only available for 3-5 years. In addition, an assumption of the DCF model is that the growth rates reflect stable economic conditions.

An issue with the data is that it solely includes dividend payments as cash distributions to shareholders, while some companies also use share repurchases to distribute cash to shareholders. To the extent that companies in my samples use share repurchases, the DCF model using dividend yields will underestimate the cost of equity for these companies. While there are companies in my sample that have engaged in share buybacks in the past, the magnitude is currently not large.

3. RESULTS FROM THE DCF BASED MODELS

Q. Please summarize the DCF-based cost of equity estimates for the proxy groups.

A. The results of the DCF based estimation for the proxy groups are displayed below in Figure 14. Similar to my implementation of the CAPM/ECAPM, the estimates are measured relative to UCDEU's requested deemed 50.0 percent equity capital structure.

FIGURE 14: NATURAL GAS & WATER UTILITY SAMPLE DCF RESULTS AT 50.0% EQUITY

	Simple	Multi-stage
	[1]	[2]
Gas Sample	12.7%	9.3%
Water Sample	12.7%	9.0%

Q. How do you interpret the results of your DCF analyses?

A. The DCF model results range from 9.3 percent to 12.7 percent for the Natural Gas Sample and 9.0 percent to 12.7 percent for the Water Utility Sample. Looking first to the Natural Gas Sample, I find a reasonable range of 9.25 percent to 12.5 percent (midpoint 10.875 percent) at UCDEU's 50.0 percent equity capital structure.[86] Looking next to the Water Utility Sample, I find a reasonable range of 9.0 percent to 12.75 percent (midpoint 10.875 percent) for the Water Utility Sample at UCDEU's 50.0 percent equity capital structure.

E. RISK PREMIUM MODEL ESTIMATES

Q. Did you estimate the cost of equity that results from an analysis of risk premiums implied by allowed ROEs in past utility rate cases?

A. Yes. In this type of analysis, sometimes called the "risk premium model," the cost of equity capital for utilities is estimated based on the historical relationship between allowed ROEs in utility rate cases and the risk-free rate of interest at the time the ROEs were granted. These estimates add a "risk premium" implied by the relationship to the relevant (prevailing or forecasted) risk-free interest rate:

$$Cost\ of\ Equity = r_f + Risk\ Premium \quad (5)$$

[86] To create my reasonable range of DCF results, I rely on the results from the multi-stage DCF as the lower-bound and the results from the simple DCF as the upper bound. I then round the reasonable range to the nearest 25 basis points. I apply this same approach for the Gas and Water samples.

I rely on the results from the Risk Premium Model as a check on the reasonableness of the results from the CAPM and DCF models. I do not rely on the results of the Risk Premium Model to form my recommended ROE for UCDEU.

Q. What are the merits of this approach?

A. First, it estimates the cost of equity from regulated entities as opposed to holding companies, so that the relied-upon figure is directly applicable to a rate base. Second, the allowed returns are readily observable to market participants, who will use this one data input in making investment decisions, so that the information is at the very least a good check on whether the return is comparable to that of other investments. Third, I analyze the spread between the allowed ROE at a given time and the then-prevailing interest rate to ensure that I am properly consider the interest rate regime at the time the ROE was awarded. This implementation ensures that I can compare the allowed ROE granted at different times and under different interest rate regimes.[87]

Q. How did you use rate case data to estimate the risk premiums for your analysis?

A. The natural gas and water utility rate case data is from Q1 1990 through Q4 2025 and is taken from Regulatory Research Associates ("RRA").[88] Using this data, I compared (statistically) the average allowed rate of return on equity granted by U.S. state regulatory agencies in natural gas and water utility rate cases to the average 20-year Treasury bond yield that prevailed in each quarter. I calculated the allowed utility "risk premium" in each

[87] I acknowledge that the FERC recently dropped the Risk Premium Model from its ROE Methodology (189 FERC ¶ 61,036, Docket Nos. EL14-12-016 and EL15-45-015, October 17, 2024). However, I find the Risk Premium Model, when placed in the proper context, can serve as a check on the reasonableness of the CAPM- and DCF-based ROE results.

[88] S&P Capital IQ Pro, as of December 31, 2025.

quarter as the difference between allowed returns and the Treasury bond yield, since this represents the compensation for risk allowed by regulators. Then, I used the statistical technique of ordinary least squares ("OLS") regression to estimate the parameters of the linear equation:

$$Risk\ Premium\ =\ A_0\ +\ A_1\ \times\ (Treausury\ Bond\ Yield) \quad (6)$$

I derived my estimates of A_0 and A_1 using standard statistical methods (OLS regression) and found that the regression has a high degree of explanatory power in a statistical sense. I report the results using a forecasted risk-free rate of 4.6 percent (consistent with the one used in my CAPM/ECAPM analysis) in Figure 15 for natural gas utilities and Figure 16 for water utilities below. I note that the results displayed below show that the risk premium model fits the data well as the R-squared is approximately 0.84 and 0.93. R-squared is a measure of how well the data fits the model. An R-squared above 0.8 indicates a solid result.

FIGURE 15: IMPLIED RISK PREMIUM MODEL (NATURAL GAS UTILITIES)

Risk Premium = A_0 + (A_1 x Treasury Bond Rate)				
R Squared	0.843			
Estimate of Intercept (A_0)	8.44%			
Estimate of Slope (A_1)	-0.564			
Predicted Risk Premium	**+**	**Exp. Treasury Bond Rate[2]**	**=**	**Est. Cost of Equity for Natural Gas Utilities**
5.84%		4.60%		10.4%

Sources and Notes:
[1]: Authorized ROE Data from S&P Market Intelligence as of 12/31/2025.
[2]: Blue Chip Economic Indicators, January 2026. 2026 yield projections + maturity premium between 10 year and 20 year U.S. Government bonds.
See Regression Results for derivation of regression coefficients A_0 and A_1

FIGURE 16: IMPLIED RISK PREMIUM MODEL (WATER UTILITIES)

Risk Premium = A_0 + (A_1 x Treasury Bond Rate)				
R Squared	0.933			
Estimate of Intercept (A_0)	9.29%			
Estimate of Slope (A_1)	-0.881			
Predicted Risk Premium	**+**	**Exp. Treasury Bond Rate[2]**	**=**	**Est. Cost of Equity for Water Utilities**
5.24%		4.60%		9.8%

Sources and Notes:
[1]: Authorized ROE Data from S&P Market Intelligence as of 12/31/2025.
[2]: Blue Chip Economic Indicators, January 2026. 2026 yield projections + maturity premium between 10 year and 20 year U.S. Government bonds.
See Regression Results for derivation of regression coefficients A_0 and A_1

Q. What conclusions did you draw from your risk premium analysis?

A. The results in Figure 15 and Figure 16 above indicate an ROE of 10.4 percent and 9.8 percent for an average natural gas and water utility based on the risk premium model, which

is consistent with the reasonable range of the CAPM/ECAPM and DCF estimates. While the risk premium model is based on historically allowed returns and not underpinned by fundamental financial principles like the CAPM/ECAPM and DCF models, I believe that this analysis, when properly designed, executed, and placed in the proper context, is a valid and useful approach to estimate utility ROEs and can be used as a check on the results of the market-based ROE estimation methods, like the CAPM and DCF models. Because the risk premium analysis, as implemented, takes into account the interest rates prevailing during the quarter the ROE decision was issued, it provides a useful benchmark for the cost of equity in any interest environment. Because it relies on the returns for regulated utilities, I believe this method provides a good way to directly assess whether the ROE is commensurate with that available to alternative regulated investments of similar risk.

F. SUMMARY OF RESULTS

Q. Please summarize your results and your preliminary reasonable range for an allowed ROE.

A. Figure 17 below displays the reasonable range of ROE estimates for the Natural Gas and Water Utility samples at UCDEU's requested 50.0 percent equity capital structure.

FIGURE 17: SUMMARY OF REASONABLE RANGES AND RECOMMENDED RANGE OF ROE ESTIMATES AT 50.0% EQUITY

	Natural Gas Sample	Water Utility Sample
CAPM	10.0% - 11.0%	11.25% - 12.0%
ECAPM	10.25% - 11.25%	11.25% - 12.0%
DCF	9.25% - 12.5%	9.0% - 12.75%
Risk Premium	10.4%	9.8%
Overall Reasonable Range	9.75% - 11.5%	10.5 - 12.25%
Recommended Range	10.25% - 11.25%	

Looking first at the Natural Gas Sample, the reasonable range of ROE estimates is 10.0 percent to 11.0 percent and 10.25 percent to 11.25 percent from the CAPM and ECAPM, respectively, and 9.25 percent to 12.5 percent from the DCF. The Risk Premium Model results of 10.4 percent fall within these reasonable ranges. Based on the results from the CAPM, ECAPM, and DCF models, I find an overall reasonable range of 9.75 percent to 11.5 percent at a 50.0 percent equity capital structure based on the Natural Gas Sample.

Looking next at the Water Utility Sample, the reasonable range of ROE estimates is 11.25 percent to 12.0 percent from the CAPM and ECAPM and 9.0 percent to 12.75 percent from the DCF model. The Risk Premium Model result of 9.8 percent falls within the range of the DCF model results, but below the range for the CAPM and ECAPM. I find an overall reasonable range of 10.5 percent to 12.25 percent at 50.0 percent equity based on the CAPM, ECAPM, and DCF model results for the Water Utility Sample.

To derive a recommended range, I look to the central tendency of the overall reasonable ranges from the Natural Gas Sample and Water Utility Sample. I recommend an ROE range of 10.25 percent to 11.25 percent at the Company's requested deemed 50.0 percent equity capital structure, prior to any consideration of and without any adjustment

for company-specific risks. Next, I consider UCDEU and Utah specific risks to inform the reasonableness of the Company's requested ROE within this recommended range.

VI. UCDEU BUSINESS RISK

Q. Please briefly summarize UCDEU's business operations.

A. As discussed in Section V.A above, UCDEU seeks Commission approval to construct, own, and operate a regulated heat corporation under Utah Code Ann. § 54-2-1(16)(a) to provide centralized heating and cooling services within the Utah City development in Vineyard, Utah.[89] The Utah City project is a 350-acre, mixed-use community expected to include approximately 16 million square feet of residential and 1.6 million square feet of commercial space. UCDEU plans to build its thermal energy system over 15 to 20 years, in concert with Utah City's development schedule, with initial service to some buildings anticipated in 2026. Upon full buildout, the system will deliver up to 197,905 MBH of heating and 276,384 MBH of cooling capacity through a network of underground distribution pipes. Thermal energy will be produced at centralized energy centers and circulated via underground distribution pipes to individual buildings, where Energy Transfer Stations will connect to internal HVAC systems. Currently, Flagborough, the developer of Utah City, is UCDEU's sole customer.

[89] I understand that on February 2, 2026, the Commission gave conditional approval UCDEU, subject to filing of permits and filing a general rate case with a regulatory framework for rate design and terms of service. *See* Docket 25-2666-01.

Q. How does the business operations of UCDEU compare to that of the natural gas and water utility proxy companies?

A. Like UCDEU, the natural gas and water utilities provide rate-regulated utility service to customers. Both UCDEU and the proxy companies are regulated by state utility commissions, distribute a commodity to end-users through a network of assets, and require substantial capital investment to provide service.

However, UCDEU is significantly smaller than the natural gas and water utility proxy companies. In addition, UCDEU is a greenfield, in-development utility, whereas the natural gas and water utility proxy companies have mature utility business operations serving established customer bases within their service territories. The Company provides utility service to a single customer that represents approximately 64 mixed-used buildings located within the 350-acre Utah City development in Vineyard, Utah. In contrast, the natural gas and water utilities serve tens of thousands to millions of customers across large service territories, in many instances spanning several states. The average company in my natural gas and water utility proxy groups has annual revenues of $2.9 billion and $400 million, respectively (see Figure 8 and Figure 9 above). By comparison, UCDEU's CPCN forecasts that the Company will have $2.9 million in revenues in 2026, which will grow to $21.8 million by 2030.[90] Finally, the average natural gas and water utility has a credit rating of A- and A from S&P, respectively, whereas UCDEU does not have a credit rating.

[90] Corix Utah City Heating and Cooling, LLC, Pro Forma Financial Statements for the period from January 1, 2025 to December 31, 2030, Utah Public Service Commission Docket No. 25-2666-01.

Q. How does the Company's in-development status affect its business risk profile relative to the natural gas and water utility proxy companies?

A. UCDEU is unique in that it is a greenfield utility that currently does not have any operational utility assets to provide thermal energy service. My understanding is that the Company's facilities are currently under construction and will commence service to the first buildings in the development in 2026. UCDEU will continue to expand its thermal energy system over the next 20 years as new buildings are constructed with the Utah City development.

Investors require a premium to invest in greenfield projects (and early-stage companies) due to the its elevated risk profile compared to the risks associated with investing in more mature businesses like the natural gas and water utility proxy companies.[91] Specifically, as explained further below, greenfield projects have higher capital requirements than mature businesses, and face higher degrees of development and construction risk (*e.g.*, risk of delays or cost escalations associated with contracting, permitting, and construction) and greater uncertainty about future demand for their services and resulting revenue.

Greenfield companies have a high level of fixed costs relative to their operating income during construction and the nascent years of business operations. For example, UCDEU forecasts that it will spend $10.0 million in capital expenditures in 2026 and earn

[91] *See* for example, Brealey, Myers, Allen, Principles of Corporate Finance, 12th Edition, pp. 231-232; Marsh & McLennan, "Greenfield Investment: Demystifying Incremental Risk," February 2015, https://www.marsh.com/content/dam/marsh/Documents/PDF/US-en/Greenfield%20Investment%20Demystifying%20Incremental%20Risks-03-2015.pdf; Aquila Capital, "At a Glance – Infrastructure Investments," 2020, https://www.aquila-capital.de/fileadmin/user_upload/PDF_Files_Whitepaper-Insights/2020-10-16_At-A-Glance_Infrastructure_Nr1_V02.pdf;.

an operating income of $1.4 million (*i.e.*, capital expenditures are 7.1x operating income).[92] This high degree of fixed costs makes the company's cash flows more susceptible to fluctuations in revenues. When required capital expenditures is high during development and construction and the utility's customer base is developing, fluctuations in operating income will be amplified in their impact in fluctuations on cash flows available to debt and equity investors, similar to the risks posed by financial leverage. In addition, the high level of capital expenditures during the development and construction of the Company's thermal energy network increase execution risk because it will need to control costs while meeting its development milestones. Further, UCDEU is exposed to demand uncertainty given that the Utah City development will need to attract tenants to the community as it expands over a multi-decade timeline.

By comparison, the mature natural gas and water utilities in the proxy group have an existing energy distribution system and an established customer base within its service territory. While the proxy companies are also capital-intensive utilities, the proportion of capital expenditures to revenues is smaller. The proxy companies have mature distribution systems and capital expenditures are generally focused on maintaining the system or investing in discrete growth projects. For the average natural gas and water utility, the ratio of capital expenditure to operating income is 1.8x and 1.5x, respectively.[93] By comparison, UCDEU's expected capital expenditures to operating income ratio for 2026 is significantly higher at 7.1x.

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[92] Corix Utah City Heating and Cooling, LLC, Pro Forma Financial Statements for the period from January 1, 2025 to December 31, 2030, Utah Public Service Commission Docket No. 25-2666-01.

[93] Corix Exhibit 5.9.

Mature utilities do face execution risk, as they must complete their capital plans on time and within budgets approved by their regulators, but this risk is less acute for the proxy companies than for UCDEU given their significantly lower ratio of capital expenditure to operating income. Lastly, the proxy companies face less demand uncertainty given that they already provide utility service to a large, diversified set of end-users in their service territory. The proxy companies also have less customer concentration, mitigating the impact of any single customer connecting or disconnecting from their distribution system.

Based on the above-articulated considerations, I find that UCDEU's in-development status increases the business risk profile of the Company relative to that of the natural gas and water utility proxy companies.

Q. How does UCDEU's proposed rate levelization plan impact the Company's business risk profile relative to that of the proxy companies?

A. UCDEU intends to be a rate-regulated utility that recovers cost from its customer(s) through cost-of-service ratemaking. I understand that Company is proposing a rate levelization plan to alleviate rate pressure on its small, initial customer base. In the initial development years, UCDEU will defer recovery of costs which will be accumulated and tracked in a regulatory asset known as the Revenue Deficiency Deferral Account ("RDDA"). Over time, customer bills will gradually increase and the balance of deferred revenues in the RDDA will wind down to zero over time. The RDDA is proposed to be recovered by the end of 2041.

The deferral of revenues through a regulatory asset is relatively common amongst utilities and typically results in the utility recovering those deferred revenues over time through future rates. However, if for whatever circumstance, the recovery of a regulatory asset is delayed, reduced, or disallowed, the utility would experience either a delay in earnings or an immediate reduction in potential earnings, because the underlying costs have already been incurred but the associated revenues have yet to be collected. Accordingly, a utility with relatively large regulatory asset balances may be viewed as having greater capital recovery risk, as a larger portion of its expected future earnings depends on continued regulatory approval of those deferred amounts. In addition to the size of the regulatory asset, the time over which the utility recovers this asset can also increase recovery risk.

Regulatory assets are common amongst the proxy companies. However, UCDEU is unique, compared to the proxy group companies, in that it is a greenfield utility that requires substantial upfront capital investments to provide utility service to a relatively limited number of initial building connections during the initial years of operation. As such, the RDDA will defer a significant portion of the Company's annual revenues in the early years of operations to provide rate relief to its customer. It is my understanding that the ratio of RDDA balance to rate base will grow from approximately 4% in 2026 to 28% in 2028 and then gradually amortize until 2041.[94]

The proxy group companies have regulatory assets that used to defer the recovery of costs associated with specific expenses, such as infrastructure programs, fuel cost

[94] Direct Testimony of Douglas Chong, Corix Exhibit 3.4.

recovery, income taxes, pensions, *etc.*[95] However, the size of the regulatory assets relative to rate base is generally smaller than that of UCDEU's RDDA. As shown in Figure 18 below, the proxy companies have regulatory asset balances that are approximately 7.4% of rate base.

FIGURE 18: REGULATORY ASSETS AS A PERCENTAGE OF ESTIMATED RATE BASE ($ MILLIONS)[96]

		Regulatory Asset	Estimated Rate Base	Reg Asset / Rate Base %
Atmos Energy	[A]	579	21,487	**2.7%**
Chesapeake Utilities	[B]	101	2,826	**3.6%**
New Jersey Resources	[C]	677	6,083	**11.1%**
NiSource Inc.	[D]	2,477	28,241	**8.8%**
Northwest Natural	[E]	513	3,487	**14.7%**
ONE Gas Inc.	[F]	379	6,974	**5.4%**
Southwest Gas	[G]	494	8,848	**5.6%**
Amer. States Water	[H]	150	2,221	**6.7%**
Artesian Res Corp	[I]	14	736	**2.0%**
California Water	[J]	357	3,875	**9.2%**
Middlesex Water	[K]	102	1,143	**8.9%**
York Water Co. (The)	[L]	54	544	**9.9%**
Average	**[M]**			**7.8%**
Average (Gas)	**[N]**			**7.4%**
Average (Water)	**[O]**			**7.4%**

Source: S&P Capital IQ Pro, accessed February 10, 2026 and proxy companies' 2024 Form 10-K filings. Analysis as of December 31, 2025.

In addition, many of the proxy companies' regulatory assets for short-cycle expenses are recovered on relatively shorter time periods (within 12 to 18 months or added to base rates in the next rate case filing). For example, Atmos Energy has a regulatory asset for eligible capital investments, which includes capital investments related to pipeline

[95] *See* proxy companies 10-K filings and Corix Exhibit 5.9.

[96] Corix Exhibit 5.9.

integrity, safety, and reliability upgrades, which totaled $285 million in 2024.[97] Atmos is allowed to recover the deferred costs through base rates in the next rate proceeding (rate case or annual rate filing) or through a dedicated rate rider.[98] By contrast, some larger or long-dated items, like storm recovery costs, pension costs, or deferred taxes, are recovered over long periods (*e.g.*, 3 to 10 years or longer). For example, Chesapeake Utilities was authorized by the Florida Public Service Commission to defer and recover the cost of storm restoration and capital repair costs associated with Hurricanes Michael and Dorian over a 6- to 10-year period.[99]

If approved, the RDDA would provide rate relief to its customer and provide certainty of future cost recovery to UCDEU. However, the size of the RDDA is expected to be relatively larger than the size of proxy companies' regulatory assets. Further, the RDDA is expected to be recovered over a 16-year period, whereas the proxy companies can begin to recover some of the deferred costs over a shorter time period.

UCDEU's greenfield, capital-intensive nature increases its capital recovery risk which is mitigated somewhat by the proposed RDDA. However, given the size of the deferred revenues and the longer recovery period relative to similar mechanisms available to the proxy companies, I find that, on balance, UCDEU faces slightly higher cost recovery risk relative to that of the proxy companies.

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[97] Atmos Energy, 2024 Form 10-K, p. 51.

[98] *Ibid*.

[99] Chesapeake Utilities, 2024 Form 10-K, p. 101.

Q. How does UCDEU's size compare to that of the proxy samples?

A. Empirical observations of stock performance indicate that investors require a higher return to invest in smaller companies rather than larger companies.[100] UCDEU expects to have $45.9 million in total assets in 2026. In comparison, the average natural gas and water utility proxy company had $13,534 million and $2074 million in total assets in 2024, respectively. Looking to revenue, UCDEU expects to have $2.9 million in revenue in 2026 whereas the average natural gas and water utility company had $2,921 million and $401 million in revenue in 2024.

[100] Kroll, "Supplementary Risk Premium Report Study Data," as of December 31, 2024.

FIGURE 19: TOTAL ASSETS AND REVENUES

Company		Total Assets ($M) [1]	Total Operating Revenues ($M) [2]
Atmos Energy	[A]	$ 26,497	$ 4,183
Chesapeake Utilities	[B]	$ 3,577	$ 812
New Jersey Resources	[C]	$ 7,194	$ 1,818
NiSource Inc.	[D]	$ 31,788	$ 5,283
Northwest Natural	[E]	$ 5,234	$ 1,153
ONE Gas Inc.	[F]	$ 8,426	$ 2,084
Southwest Gas	[G]	$ 12,024	$ 5,112
Amer. States Water	[H]	$ 2,500	$ 595
Artesian Res Corp	[I]	$ 799	$ 108
California Water	[J]	$ 5,180	$ 1,037
Middlesex Water	[K]	$ 1,255	$ 192
York Water Co. (The)	[L]	$ 633	$ 75
Gas Sample Average	**[M]**	**$ 13,534**	**$ 2,921**
Water Sample Average	**[N]**	**$ 2,074**	**$ 401**
UCDEU	**[O]**	**$ 45.9**	**$ 2.9**

Sources and Notes:
[A] - [L]: S&P Capital IQ as of 2/10/2025.
[M]: Average ([A] - [G]).
[N]: Average ([H] - [L]).
[O]: From UCDEU. Values for 2026.

Q. What is the impact of UCDEU's smaller size on the return required by equity investors?

A. Empirically, investors have required a larger premium to invest in smaller companies than larger ones. For example, studies performed by Kroll indicates that the level of UCDEU's total assets puts it in the 25th portfolio of company groupings (out of 25)[101] in terms of size,

[101] Kroll, "Supplementary Risk Premium Report Size Study," as of December 31, 2024. Largest companies are in Portfolio 1 whereas the smallest companies are in Portfolio 25. *Note*, by 2030 UCDEU forecast it will have $199 million in total assets and $21.8 million in revenues, which would still fall within Kroll's 25th portfolio of

whereas the average natural gas utility falls in the 8th portfolio and the average water utility falls in the 20th portfolio. Kroll's data indicates that a company in the 25th portfolio has a size premium of 4.61%, which is 254 basis points above the size premium of a company in the 8th portfolio (2.07%). Similarly, the size premium for a company in the 25th portfolio is 140 basis points above the size premium of a company in the 20th portfolio (3.21%).

Next, I make a similar comparison looking at revenues. UCDEU is in Kroll's 25th portfolio of company groupings in terms of revenues, whereas the average natural gas proxy company falls in the 16th portfolio and the average water utility proxy company falls in the 24th portfolio. According to Kroll's study, a company in the 25th portfolio has a size premium of 4.49%, which is 137 basis points above the size premium for a company in the 16th portfolio (3.02%) and 59 basis points above the size premium for a company in the 24th portfolio (3.90%).[102]

That is, Kroll's data indicates that investors require a 59 to 254 basis points premium to invest in a company with the size of UCDEU relative to a company with the assets and revenues of the average natural gas or water utility proxy company.[103] This also suggests that the reasonable range of ROE estimates from the CAPM, DCF Model, and Risk Premium based on relatively larger utilities may understate the ROE for UCDEU.

Notwithstanding the empirical evidence regarding size premiums, I do not perform a specific quantitative adjustment to my overall recommended range based on the Kroll

company groupings. Kroll's 25th size portfolio includes companies with less than $421.46 million in assets and less than $391.64 million in sales.

[102] Since the water utilities are in the same size premium as UCDEU in terms of revenues, there is no size premium.

[103] If the minimum size premium (103 basis points) was included in the recommended range of ROE estimates this would increase the recommended range to approximately 11.0 percent to 12.0 percent.

data. Rather, I simply cite empirical data as evidence that investors do require a higher ROE to invest in small companies, like UCDEU, relative to companies the size of the average natural gas or water utility proxy company.

Q. How does UCDEU's customer concentration and size of its service territory affect its business risk profile?

A. UCDEU has a high degree of customer concentration and will provide utility service to a relatively smaller service territory compared to the proxy companies. The Company has a single customer, Flagborough, the developer of Utah City. In comparison, the natural gas and water utility proxy companies serve tens of thousands to millions of customers, as shown in Figure 20 below.

FIGURE 20: NUMBER OF CUSTOMERS[104]

Proxy Company		Customer Count
Atmos Energy	[A]	3,300,000
Chesapeake Utilities	[B]	440,000
New Jersey Resources	[C]	588,000
NiSource Inc.	[D]	3,800,000
Northwest Natural	[E]	806,000
ONE Gas Inc.	[F]	2,281,000
Southwest Gas	[G]	2,260,000
Amer. States Water	[H]	289,414
Artesian Res Corp	[I]	100,100
California Water	[J]	560,100
Middlesex Water	[K]	128,000
York Water Co.	[L]	78,000
UCDEU	**[M]**	**1**

[104] Corix Exhibit 5.9.

UCDEU's high degree of customer concentration puts it at higher risk relative to the proxy companies. All else equal, higher customer concentration makes a utility more vulnerable to customers defaulting on their obligations. In the long-term, the utility is also more vulnerable to its customers not renewing its service agreements with the utility should the customer decide to pursue alternative forms of energy service. By comparison, the natural gas and water utility proxy companies provide service to a large and diverse set of customers. Should a particular customer not pay their utility bill (even a commercial or industrial customer), it will likely not have a material impact on the proxy company, relative to that of a utility with a single customer.

While Flagborough is the only customer of UCDEU, the developer is taking thermal energy utility service to heat and cool approximately 64 buildings within the Utah City development. These buildings include residential towers, commercial buildings, civic facilities, and public amenities. These buildings will provide diversity of end-use loads, similar to that of the natural gas and water utility proxy companies. However, Utah City is still under development so the achievement of this diverse end-use demand will be contingent on Flagborough developing the community and attracting tenants to live and work in the development.

Considering UCDEU has a single customer, and the diversity of end-user loads is still under development, I find that UCDEU's customer concentration and smaller service territory puts the Company at higher business risk relative to that of the natural gas and water utility proxy companies.

Q. Can you please summarize your assessment of UCDEU's business risk relative to the sample?

A. UCDEU is a greenfield thermal energy utility that will provide centralized heating and cooling services to mixed-use residential, commercial, and civic buildings in the Utah City development. Similar to the natural gas and water utility proxy companies, UCDEU will distribute a commodity (*i.e.*, thermal energy) to these end-users through a network of underground distribution pipes that will take significant capital investments to build and maintain. The Company is regulated by the Utah Public Service Commission, similar to how the proxy companies are regulated by various state utility commissions.

UCDEU's in-development status and small, concentrated customer base distinguish it from publicly traded utilities, including those in the proxy group. These characteristics also expose the Company to unique risks, such as high capital requirements relative to revenue, execution risk, and demand uncertainty. UCDEU is also significantly smaller than both the average natural gas and water utility proxy company. Empirical data from Kroll indicates that investors require a 59 to 254 basis point premium to invest in a company with the size of assets and revenues of UCDEU relative to that of the average proxy company. Lastly, to mitigate potential rate impacts to its customer, UCDEU has proposed rate levelization mechanism that defers collection on a portion of the company's revenue requirement. While regulatory assets are common mechanisms, they are typically a smaller proportion of rate base and allow some costs to be recovered over a shorter time period.

Based on these considerations, I find that UCDEU has above average business risk relative to the business risk profile of the natural gas and water utility proxy companies.

VII. COST OF DEBT

Q. How is the cost of debt calculated?

A. The second major component of UCDEU's cost of capital is the cost of debt. I recommended that the Commission rely on the Company's embedded cost of debt to set the authorized cost of debt for ratemaking purposes. This approach is consistent with my understanding of recent decisions by the Commission where it utilized the embedded cost of long-term debt on actual debt costs.[105] For example, the Commission utilized this approach to set the authorized cost of debt for Rocky Mountain Power, Enbridge Gas Utah, and WaterPro.[106]

Q. What are some of the important considerations when estimating the cost of debt for UCDEU?

A. Like the cost of equity, the cost of debt capital is a key parameter to estimating a utility's costs of capital because it impacts the return to a utility's investors. The required rate of return is the rate at which the utility can obtain debt financing. That is, the required rate of return on debt capital should be sufficiently attractive to compensate investors for forgoing the opportunity to earn a return from an alternative debt investment of comparable risk, consistent with the fair return standard.

The cost of debt reflects both systematic risk and idiosyncratic risk of a particular investment. Systematic risk is known as market risk or non-diversifiable risk and reflects

[105] I am not a lawyer and not offering a legal opinion. My understanding of the Commission's prior approach is based on my review of the Commission's final orders in prior proceedings.

[106] *See*, Utah PSC Order on Docket No. 22-057-03, issued December 23, 2022, page 6; Utah PSC Order on Docket No. 20-035-04, issued December 30, 2020, page 13; and Utah PSC Docket No. 21-2443-01, Direct Testimony of Paul Hicken, page 3.

the impacts of interest rate environment, inflation, economic conditions, geopolitics, etc. The systematic risk of debt instruments is analogous to the systematic risk that is factored into the equity risk premium (*i.e.*, via the equity beta). That is, it is the risk associated with how the price of the debt instrument varies with changes in price of the broader market. Empirical studies have observed non-zero betas for debt securities, indicating the presence of systematic risk.[107] The cost of debt also reflects company-specific risks, such as capital structure, cash flow variability, demand/supply conditions, level of capital expenditures, regulatory environment, *etc.* This idiosyncratic or company-specific risk is reflected in the risk premiums that investors require to bear the risk of default (*i.e.*, the default premium). A company's embedded cost of debt will generally reflect debt investors' required rate of return to compensate them for both the systematic and company-specific risks inherent in that investment.

As discussed in Section VI above, UCDEU is a greenfield utility in the early stages of its development. The utility is expected to serve a small number of end-users starting next year. While this will begin to generate cash flows for the Company, they are small relative to the level of capital expenditures (*i.e.*, the Company's debt and equity requirements). Generally, less stable cash flows can lead to elevated risk of default and therefore high required yields by debt investors, particularly when cash flow uncertainty is accompanied by high levels of required capital investment.[108] The testimony of Corix

[107] *See for example*, Berk and DeMarzo, Corporate Finance, 3rd Edition, p. 413 which finds debt betas range from 0.01 to 0.31 depending on credit rating and maturity of the debt instrument.

[108] For example, S&P Global Rating considers a company's level of Funds from Operations ("FFO") to debt and the level of debt to Earnings Before Interest, Taxes, Depreciation, and Amortization ("EBITDA") as core credit metrics when determining a company's credit rating.

witness Mr. Maxwell Wang in Exhibit 4.0 discusses further company-specific circumstances and their impact on UCDEU's cost of debt.[109]

Q. What is UCDEU's embedded cost of debt?

A. I understand that Corix Utah City has entered into an Intercompany Credit Agreement ("ICA"), dated January 16, 2025, that allows it to borrow funds from its parent, Corix Utah City Heating and Cooling, LLC. I also understand that this arrangement allows UCDEU to access debt funding that it would otherwise be inefficient or expensive to access, given the size of UCDEU's borrowing requirements.[110] [redacted] As outlined by Maxwell Wang UCDEU's cost of debt for the Test Period is approximately 7.49%,[111]

VIII. CAPITAL STRUCTURE

Q. What capital structure is UCDEU requesting in this proceeding?

A. UCDEU is requesting a deemed capital structure of 50.0 percent equity and 50.0 percent debt.

Q. How do you propose to determine a reasonable equity ratio for UCDEU?

A. When determining a reasonable equity ratio, it is important to consider two metrics: 1) that the overall return that is available to investors needs to be comparable to what investors

[109] *See* Corix Exhibit 4.0 testimony of Maxwell Wang for Corix.

[110] *Ibid*.

[111] *See* Corix Exhibit 4.0 testimony of Maxwell Wang for Corix.

can obtain in other investments of comparable risk, and 2) ensuring that the equity return would provide financial stability to the utility, consistent with the Fair Return Standard. Thus, it is important to determine an equity ratio such that investors find investments in UCDEU as attractive as other alternatives (on a risk-adjusted basis) and that the equity return reasonably assures confidence in the financial soundness of the utility. Because the dollar return that accrues to investors is determined as a multiple of the equity ratio and the percentage return, both components are important and there is commonly a tradeoff between the two.

Q. In the past, how has the Commission typically determined the authorized capital structure for the utilities that it regulates?

A. It is my understanding that the Commission has typically relied on the actual structure of the utility, or its immediate parent company, to determine the appropriate authorized capital structure.[112] However, at times, the Commission has considered and approved a hypothetical capital structure.[113] The Commission has opted to utilize a hypothetical capital structure based on comparable utilities in instances where the actual capital structure of the utility or its immediate parent company is not appropriate.[114]

[112] I am not a lawyer and not offering a legal opinion. My understanding of the Commission's prior approach is based on my review of the Commission's final orders in prior proceedings.

[113] See for example, Commission Docket No. 21-2443-01; Commission Docket No. 99-035-10; Commission Docket No. 22-057-03; and Commission Docket No. 16-057-01.

[114] For example, in Commission Docket No. 21-2443-01, WaterPro's actual capital structure would have resulted in a capital structure of over 90% debt. Additionally in Commission Docket No. 99-035-10, PacifiCorp's involvement in non-regulated businesses influenced its balance sheet to where its actual capital structure did not reflect one of a typical electric utility.

Q. How did you determine appropriate equity ratios?

A. I reviewed UCDEU's pro forma financial statements to evaluate the company's forecasted actual capital structure.[115] Second, to determine if the equity ratio is comparable to what investors can obtain in other investments of comparable risk, I compared UCDEU's requested deemed capital structure to the average authorized equity percentage for natural gas and water utilities within the U.S., over the past six years.

Q. What does the Company's pro forma financial statements indicate about its capital structure?

A. As discussed above, UCDEU is a new utility that is in the process of developing its energy delivery network, with the goal of serving its first customer in 2026 and achieving full build out within 20 years. The company's pro forma financial statements provide an indication of the timing and extent of raising equity and debt capital to fund its development. Importantly, these forward-looking statements also provide insight to the company's forecasted actual capital structure when rates established in this proceeding will be in effect. As shown in Figure 21 below, the Company's pro forma capital structure from 2026 to 2030 will consist of 50.0 percent equity and 50.0 percent debt. The pro-forma financial statements indicate that UCDEU's requested capital structure reflects its expected financing during the period when rates will be in effect.

[115] Corix Utah City Heating and Cooling, Corix Exhibit CS.F, Utah Public Service Commission, Docket No. 25-2666-01, August 1, 2025.

FIGURE 21: UCDEU PRO FORMA CAPITAL STRUCTURE

	2026	2027	2028	2029	2030
Equity	$18.9	$24.3	$37.6	$61.4	$80.7
Long-Term Debt	$18.9	$24.1	$37.6	$61.3	$80.6
Total Capital	$37.8	$48.4	$75.2	$122.7	$161.3
Equity Ratio	**50.0%**	**50.2%**	**50.0%**	**50.0%**	**50.0%**

Source: UCDEU Pro Forma Balance Sheet

Q. How does UCDEU's requested equity ratio compare to other utilities?

A. I compared the Company's requested equity ratio with the average authorized equity percentage for natural gas and water utilities within the U.S., over the past six years. In addition, considering UCDEU's relatively small size compared to the majority of utilities within the U.S., I also have calculated the average authorized equity percentages for small natural gas and water utilities. I define small natural gas and water utilities as those utilities that have a rate base of less than $300 million. As shown in Figure 22, the average authorized equity capital structure for natural gas and water utilities has ranged from 49.4 percent to 51.5 percent in 2025. That is, UCDEU's requested deemed equity ratio of 50.0 percent is generally at or below the average authorized equity ratio for U.S. natural gas and water utilities over the previous six years.

Looking next to the subset of small natural gas and water utilities, the average authorized equity capital structure has ranged from 48.8 percent to 53.4 percent. The average equity capital structure authorized for small natural gas utilities in 2025 is around 50 percent and 53 percent for small water utilities. UCDEU's requested deemed equity ratio is generally below the average authorized equity ratios for small natural gas and water utilities over the same six-year period.

FIGURE 22: AVERAGE AUTHORIZED EQUITY PERCENTAGE OF U.S. GAS AND WATER UTILITIES 2020-2025

	Gas Authorized Equity Percentage	Water Authorized Equity Percentage	Gas (Small Utilities) Authorized Equity Percentage	Water (Small Utilities) Authorized Equity Percentage
2020	52.02%	49.75%	53.42%	48.73%
2021	51.17%	51.96%	50.59%	50.03%
2022	51.54%	51.53%	50.00%	52.24%
2023	52.20%	52.53%	52.69%	52.83%
2024	52.55%	52.02%	53.44%	53.00%
2025	51.54%	49.38%	50.16%	52.78%

Q. What do you conclude from the analysis above?

A. UCDEU is requesting a deemed capital structure of 50.0 percent equity and 50.0 percent debt based on its pro forma financial statements.[116] The requested deemed equity capital structure of 50.0 percent equity is consistent with the Company's negotiated capital structure and its pro forma financial statements and it is at or below the average authorized capital structure for small natural gas and water utilities within the U.S. Based on the analysis in Figure 22. I find that UCDEU's requested capital structure consisting of 50.0 percent equity and 50.0 percent debt to be reasonable.

IX. SUMMARY OF RECOMMENDATIONS

Q. What is your determination on the reasonableness of UCDEU's requested return on equity?

A. After reviewing the estimates from the different cost of equity estimation methodologies, I find a recommended range for the proxy group's return on equity to be 10.25 percent to

[116] *Ibid*.

11.25 percent.[117] This is informed by the CAPM results for the Natural Gas Sample and the Water Utility Sample, which provide reasonable ranges of 10.0 percent to 11.0 percent and 11.25 percent to 12.0 percent, respectively. The ECAPM results for the Natural Gas Sample and the Water Utility Sample, which provide reasonable ranges of 10.25 percent to 11.25 percent and 11.25 percent to 12.0 percent, respectively. The CAPM and ECAPM results are supported by the DCF models, which provide a reasonable range of estimates of 9.25 percent to 12.5 percent for the Natural Gas Sample and 9.0 percent to 12.75 percent for the Water Utility Sample. Finally, the Risk Premium Model results in an estimated cost of equity of 10.4 percent and 9.8 percent, based on the commission-authorized returns for natural gas and water utilities, respectively, and the prevailing yield on long-term government bonds at the time of the commission's decision. Taken together, I find a recommended range of ROE estimates to be 10.25 percent to 11.25 percent.

To place my recommendation within this recommended range, I compare UCDEU's business risks to those of the natural gas and water utility proxy companies. Doing so, I find that UCDEU has higher business risk compared to the proxy samples. UCDEU is unique in that it is a small, greenfield utility that is expected to commence service to its first customer in 2026 and be fully built out within 20 years. By comparison, the proxy companies are larger, more mature utilities, that have an existing energy distribution system to serve end-use customers. The Company's greenfield, in-development status also creates an elevated level of execution risk relative to the proxy companies. Based on empirical studies from Kroll, investors require a 59 to 254 basis

[117] Note that this recommended range is based on a proxy group of mature and established natural gas and water utilities that are larger than UCDEU.

points premium to invest in a company with the size of assets and revenues of UCDEU relative to that of the average proxy company.[118] Finally, the Company's proposed rate levelization mechanism provides protection to its customer and UCDEU. However, such mechanisms available to the proxy companies are typically a smaller proportion of rate base and some costs can be recovered over shorter time periods.

I understand that UCDEU is requesting a 10.5 percent return on equity, which is the return on equity agreed upon by UCDEU and its only customer, Flagborough, in their Infrastructure Agreement. I find UCDEU's requested negotiated return on equity of 10.5 percent, which is within the recommended range for the proxy group (albeit the lower half), to be reasonable and conservative considering the business risk assessment of UCDEU.

Q. What is your recommended cost of debt for UCDEU?

A. I recommend that the Commission authorize UCDEU to recover its embedded cost of debt. The Company has entered into an Intercompany Credit Agreement with its parent. My understanding is that the ICA allows UCDEU to access debt funding that it would otherwise be inefficient or not cost-effective to raise on its own.[119] [redacted] As discussed by

[118] For clarity, I do not add this size premium to my ROE estimates, reasonable ranges, or recommended range.

[119] *See* Corix Exhibit 4.0 direct testimony of Maxwell Wang for Corix.

[120] *Ibid*.

Maxwell Wang, UCDEU's cost of debt for the Test Period from August 1, 2026 to July 31, 2027 is 7.49%.[121]

Q. What is your recommended capital structure for UCDEU?

A. UCDEU is requesting a deemed capital structure of 50.0 percent equity and 50.0 percent debt. This requested capital structure is consistent with the Company's negotiated capital structure and its projected actual capital structure in its pro forma financial statements. The requested capital structure is also generally at or slightly below the average authorized capital structures for natural gas and water utilities over the past six years. I also found that the Company's requested capital structure is generally at or below the average authorized capital structure of smaller utilities like UCDEU. Taken together, I recommend that the Commission authorized a deemed capital structure consisting of 50.0 percent equity and 50.0 percent debt for UCDEU.

Q. Does this conclude your Direct Testimony?

A. Yes, it does.

[121] *Ibid*.