BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE APPLICATION OF DOMINION ENERGY UTAH TO INCREASE DISTRIBUTION RATES AND CHARGES AND MAKE TARIFF MODIFICATIONS	Docket No. 22-057-03

REBUTTAL TESTIMONY OF

JENNIFER E. NELSON

FOR

DOMINION ENERGY UTAH

September 21, 2022

DEU Exhibit 2.0R

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I. INTRODUCTION AND PURPOSE

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

A. My name is Jennifer E. Nelson. I am an Assistant Vice President at Concentric Energy Advisors. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts, 01752.

Q. On whose behalf are you submitting this testimony?

A. I am submitting this rebuttal testimony ("Rebuttal Testimony") before the Public Service Commission of Utah ("Commission") on behalf of Dominion Energy Utah ("DEU" or the "Company").

Q. Are you the same Jennifer E. Nelson who filed Direct Testimony in this proceeding on May 2, 2022?

A. Yes, I am.

Q. Are there any additions to your qualifications since you filed your Direct Testimony that you would like to make?

A. Yes. After I filed my Direct Testimony on May 2, 2022, I was awarded the designation of Certified Rate of Return Analyst by the Society of Utility and Regulatory Financial Analysts after successful completion of an examination in April 2022. An updated version of my resume and testimony listing is provided as Exhibit DEU 2.11R.

Q. What is the purpose of your Rebuttal Testimony?

A. The purpose of my Rebuttal Testimony is to respond to the direct testimony of the following witnesses (collectively, "Opposing Witnesses") as their testimonies relate to the Company's Cost of Capital:

- Mr. Casey J. Coleman, who testifies on behalf of the Utah Department of Commerce, Division of Public Utilities (the "Division");
- Mr. Daniel J. Lawton, who testifies on behalf of the Utah Office of Consumer Services ("OCS");
- Mr. Christopher C. Walters, who testifies on behalf of Federal Executive Agencies ("FEA"); and
- Mr. Kevin C. Higgins, who testifies on behalf of Utah Association of Energy Users Intervention Group ("UAE").

Mr. Higgins does not perform an independent analysis to develop an ROE recommendation; rather he reviews the median authorized ROE for natural gas utilities over the last 12 months and the Company's current authorized ROE to develop his revenue requirement. Because Mr. Higgins does not perform any independent analysis, my testimony primarily responds to the other ROE witnesses.

I note that positions not addressed in my Rebuttal Testimony should not be construed to mean I agree with those positions raised by the Opposing Witnesses.

II. SUMMARY AND OVERVIEW OF REBUTTAL TESTIMONY

Q. Please summarize the recommendations and conclusions contained in your Direct Testimony regarding the appropriate Cost of Equity and capital structure for DEU.

A. In my Direct Testimony, I concluded that the Company's Cost of Equity is within a range of 9.60 percent to 10.75 percent, and recommended the Commission authorize an ROE of 10.30 percent.[1] As my Direct Testimony discussed, my recommendation considers the results of three widely accepted methodologies in light of the current capital market environment and certain risks faced by the Company. With respect to the Company's capital structure, I concluded that the Company's requested capital structure of 53.21 percent common equity and 46.79 percent long-term debt is consistent with the proportions of long-term capital that finances the regulated natural gas operations of the proxy group and is therefore reasonable and should be approved.[2]

As explained in my Direct Testimony, the Cost of Equity cannot be precisely quantified, nor is it the result of a defined mathematical formula. Because the Cost of Equity is not directly observable, no single model is more reliable than all others in all market conditions.[3] One model's results may be reasonable in one market environment but insufficient in another market environment. Each model's results, therefore, must

[1] Direct Testimony of Jennifer E. Nelson, at 3.
[2] Direct Testimony of Jennifer E. Nelson, at 3.
[3] Direct Testimony of Jennifer E. Nelson, at 5-6.

be viewed within the context of the current market environment and other relevant benchmarks.

Consistent with investor practice, it is important to consider a variety of methodologies and data points, as it puts into context both the quantitative and qualitative analyses and the associated recommendations. As such, I have updated many of the analyses contained in my Direct Testimony and provide additional analyses in response to issues raised by the Opposing Witnesses. These analyses demonstrate that modest adjustments to the Opposing Witnesses' analyses produce more reasonable ROE estimates consistent with my recommended range.

Q. Please provide an overview of your response to the Opposing Witnesses' ROE and capital structure recommendations.

A. Quite simply, the Opposing Witnesses' ROE and capital structure recommendations are below any reasonable measure of DEU's Cost of Equity and do not satisfy the *Hope* and *Bluefield* comparable risk, financial integrity, and capital attraction standards. Moreover, the Opposing Witnesses' ROE and capital structure recommendations are particularly unreasonable when viewed in the context of the many market-based indicators of increasing capital costs and returns currently available to other natural gas utilities. Despite increases in government and utility bond yields of approximately 150 to 200 basis points since the Commission's order in the Company's last rate case, the Opposing Witnesses disregard current market data

that indicate higher costs of capital, and recommend the Commission reduce the authorized ROE by ten to 30 basis points.

Figure 1 below summarizes the Opposing Witnesses' ROE and equity ratio recommendations.

Figure 1: Summary of ROE Results and Recommendations

	DCF Results	CAPM Results	Risk Premium Results	Equity Ratio	ROE Recommendation (Range)
Mr. Coleman (Division)	7.52%-8.25%	5.87%-6.77%	7.55%-7.98%	53.21%	9.30% (8.93% - 9.73%)
Mr. Lawton (OCS)	8.99%-9.46%	8.29%-8.58%	9.70%-9.73%	51%	9.20%
Mr. Walters (FEA)	7.99% - 9.31% (9.00%)	6.71% - 10.97% (9.40%)	9.27% - 10.42% (9.80%)	NA	9.40% (9.00% - 9.80%)
Ms. Nelson - Direct (DEU)	8.29% - 10.94%	10.21% - 13.71%	9.75% - 9.76%	53.21%	10.30% (9.60% - 10.75%)
Ms. Nelson - Rebuttal (DEU)	8.50% - 11.11%	10.29% - 12.00%	9.75% - 9.88%	53.21%	10.30% (9.60% - 10.75%)

The fact that the Opposing Witnesses' recommendations are similar and within a narrow range is due to their reliance on similar inputs that are flawed and contradictory to financial theory, biasing their ROE estimates downward. As demonstrated in my Rebuttal Testimony, modest adjustments to the Opposing Witnesses' analyses produce ROE estimates consistent with my recommended range.

Overall, it is my opinion that, if adopted, the Opposing Witnesses' recommendations would be viewed as a departure from the Commission's practices,

increasing the Company's regulatory and financial risk and diminishing DEU's ability to compete for capital. In the end, it would likely have the counterproductive effect of increasing the Company's overall cost of capital, ultimately to the detriment of customers.

Q. Please explain why an increase in the Company's authorized ROE is reasonable and appropriate in this proceeding.

A. In my Direct Testimony, I provided observable and undisputed evidence that indicates the Company's capital costs have increased since its last rate case. That evidence includes: (1) an increase in Treasury bond and utility bond yields and widening credit spreads; (2) considerable monetary policy tightening by the Federal Reserve; (3) a significant increase in inflation; (4) an increase in utility Beta coefficients, which indicates investors' perceptions of increased risk for natural gas utilities; and (5) elevated equity market volatility, indicating increased risk and investor return requirements. These indicators continue to point to higher capital costs. The Opposing Witnesses do not dispute these facts; rather conclude that they will be temporary or will not materially affect DEU.

Additionally, DEU's more leveraged capital structure indicates greater financial risk. DEU's requested capital structure reflects its more leveraged capital structure that contains more debt. Additionally, DEU's requested capital structure is more leveraged than the capital structures that finance the regulated natural gas operations of the proxy group. Because the ROE is fundamentally linked to the capital

structure, the authorized ROE should be increased to compensate for the increased financial risk brought about by higher leverage in the capital structure.[4]

Lastly, it is essential that the Commission's decision in this proceeding consider the importance of a supportive regulatory environment and the Company's need to maintain a strong financial profile as it executes its capital expenditure program, particularly during uncertain market environments. The Opposing Witnesses' recommendations to reduce the authorized return would jeopardize investors' perception of Utah's regulatory climate and diminish its financial profile to the detriment of customers.

Q. Have you updated the ROE analyses filed with your Direct Testimony?

A. Yes, I have updated my Constant Growth and Quarterly Growth Discounted Cash Flow ("DCF"), Capital Asset Pricing Model ("CAPM"), Empirical CAPM ("ECAPM"), and Bond Yield Plus Risk Premium analyses to reflect data as of August 31, 2022.[5] I also updated the capital structure analysis to reflect data for the three years ended 2021.[6] I applied this data to the same group of proxy companies used in my Direct Testimony. My updated results are presented in Section VIII below.

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[4] *See e.g.*, Docket No. 20-03504, Redacted Order at 16 (December 30, 2020).
[5] *See* DEU Exhibit 2.12R through DEU Exhibit 2.16R. As explained in Section VIII, I have reverted to my usual practice of averaging the forward-looking DCF-based expected market return estimates from *Value Line* and Bloomberg.
[6] DEU Exhibit 2.17R.

Q. Do the updated analyses change your conclusions regarding the appropriate ROE and capital structure for DEU?

A. No, they do not. As shown in Figure 1 above, my updated analytical results continue to support an ROE of 10.30 percent, within a range of 9.60 percent to 10.75 percent. Although my recommendation is not the result of a specific formula, if each of the individual updated results presented in Figure 36 in Section VIII are given equal weight – including the low and high estimates – the average is 10.36 percent. The median of my updated results is 10.59 percent, and the average of the mean and median is 10.48 percent. Therefore, my recommended ROE of 10.30 percent is reasonable. The updated capital structure analysis presented in DEU Exhibit 2.17R continues to support the Company's proposed capital structure as being consistent with (and somewhat more leveraged than) the proportions of long-term capital that finances the regulated natural gas operations of the proxy group.

Q. How is the remainder of your Rebuttal Testimony organized?

A. The remainder of my Rebuttal Testimony is organized as follows:

- Section III – Responds to the Opposing Witnesses' discussion regarding the trends in authorized ROEs and the current capital market environment;
- Section IV – Responds to the Opposing Witnesses' capital structure recommendations;
- Section V – Responds to Division witness Mr. Coleman;
- Section VI – Responds to OCS witness Mr. Lawton;
- Section VII – Responds to FEA witness Mr. Walters;
- Section VIII – Summarizes my updated ROE analytical results; and
- Section IX – Provides my conclusions and recommendations.

III. TRENDS IN AUTHORIZED ROES AND THE CURRENT CAPITAL MARKET ENVIRONMENT

A. Trend in Authorized ROEs

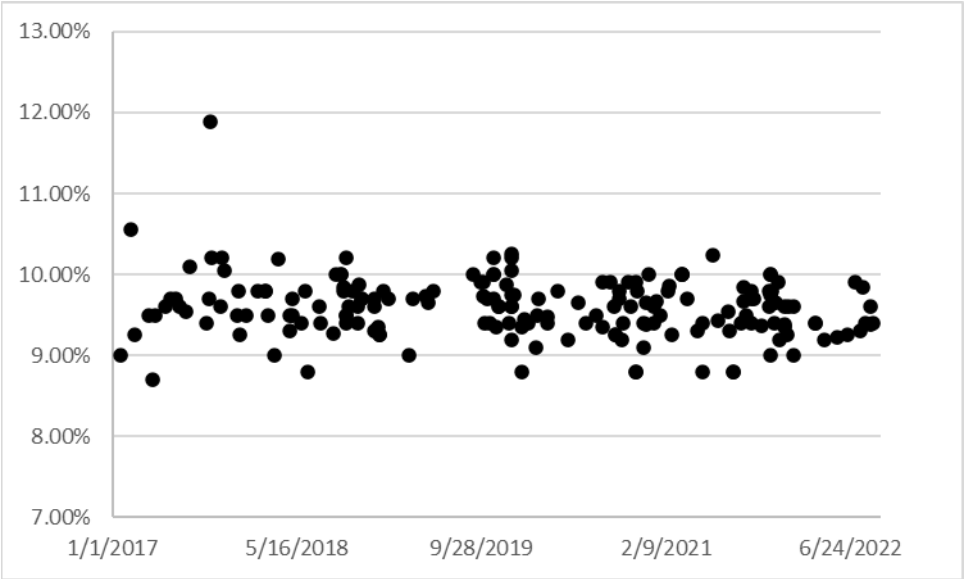
Q. The Opposing Witnesses reference authorized ROEs for utilities in other jurisdictions.[7] Do you agree with their characterizations of the trend in authorized ROEs and the relevance of the trend on the Company's Cost of Equity?

A. No, I do not. National average authorized ROEs must be considered in the proper context in order to be useful. While I agree that investors consider ROEs authorized

[7] Direct Testimony & Exhibits of Christopher C. Walters, at 4-5; Direct Testimony of Daniel J. Lawton, at 21, 27; Direct Testimony of Casey J. Coleman, at 7-10; Direct Testimony of Kevin C. Higgins, at 24-25.

in other states when assessing the adequacy of returns available to utilities, I have several concerns with the nationwide average authorized ROE data presented by the Opposing Witnesses. First, annual average data obscures variations in returns and does not address the number of cases nor the jurisdictions issuing orders within a given year. For example, one year may have fewer cases decided, and a relatively significant portion of those cases decided by a single jurisdiction. Mr. Walters' Figure CCW-1 shows, however, that the average authorized ROE for both electric and natural gas utilities has been relatively stable since 2014. As shown in Figure 2 (below), there has been no discernible downward trend in authorized ROEs for natural gas distribution utilities over the last five years. As such, I disagree with the Opposing Witnesses' characterizations of a downward trend.

Figure 2: Authorized ROE for Natural Gas Utilities (2017 – 2022)[8]



Moreover, authorized ROEs must be viewed within the context of the economic and capital market environment in which they were decided. Market conditions at the time the authorized returns were established may be very different than conditions going forward. For example, ROEs authorized when interest rates were very low in 2020 and 2021 are not a reasonable basis of comparison for evaluating the authorized ROE when bond yields have increased and are projected to continue increasing as the Federal Reserve tightens its monetary policy. As such, references to a trend in authorized ROEs beginning ten or twenty years ago are not relevant to the determination of investors' return requirements today.

[8] Source: Regulatory Research Associates. Excludes Limited Issue Rate Rider proceedings (*see* DEU Exhibit 2.18R).

Q. Mr. Coleman bases his 9.30 percent ROE recommendation in large part on the 9.33 percent average authorized ROE for natural gas utilities in the first half of 2022. What is your response?

A. First, the sample size of ROE decisions between January and June 2022 is small; of the rate cases covered by Regulatory Research Associates ("RRA", Mr. Coleman's data source), there were only nine natural gas utility rate cases between January and June 2022 in which an ROE was determined. Three of the nine ROE decisions were from New York, a jurisdiction that routinely authorizes ROEs and equity ratios well below national averages based on a formula unique to the New York jurisdiction. Notably, between June 30 and August 31, 2022, there have been seven more ROE determinations, which have averaged 9.55 percent, 22 basis points higher than the 9.33 percent Mr. Coleman refers to.

Further, many of the 16 natural gas utility rate cases that have been decided between January and August 2022 were filed before the Federal Reserve began its monetary policy tightening and began raising interest rates, and before inflation started its rapid increase. As such, the market conditions that existed during recent proceedings may not necessarily be comparable to the market conditions experienced today. As the Commission has found, authorized ROEs for other utilities in other jurisdictions are relevant information in determining an appropriate ROE, however

there are limitations of comparisons to authorized ROEs in other jurisdictions.[9] I agree with that conclusion and do not agree that average annual authorized ROEs should form the primary basis of an ROE recommendation as Mr. Coleman and Mr. Higgins have done.

Even the New York Public Service Commission has recognized increasing capital costs in their authorized ROE decisions for natural gas utilities over the first half of the year. As shown in Figure 3 below, the ROEs authorized for the New York natural gas utilities increased 25 basis points between January and June 2022. Notably, the 9.25 percent ROE authorized for Corning Natural Gas on June 16, 2022, reflected a 45-basis point increase over its prior ROE of 8.80 percent authorized a little more than a year earlier in May 2021.

Figure 3: New York PSC Natural Gas ROEs Authorized in 2022[10]

Company	Date of Final Order	Authorized ROE
Niagara Mohawk Power Corp.	1/20/2022	9.00%
Orange & Rockland	4/14/2022	9.20%
Corning Natural Gas Corp.	6/16/2022	9.25%

[9] Docket No. 20-035-04, Redacted Order, at 15 (December 30, 2020); Docket No. 19-057-02, Report and Order, at 8 (February 25, 2020).
[10] *See*, DEU Exhibit 2.18R.

Q. Are the Opposing Witnesses' recommendations consistent with those recently authorized for natural gas utilities elsewhere in the U.S.?

A. No, they are not. As noted above, the Opposing Witnesses' ROE recommendations range from 9.20 percent to 9.40 percent. These recommendations rank in the lower quartile of ROEs authorized for natural gas utilities over the last five years, as shown in Figure 4 below.

Figure 4: Percentile Ranking of Opposing Witness Recommendations' Relative to Natural Gas Authorized ROEs 2017-2022

Witness	ROE Recommendation	Percentile Rank
Mr. Lawton (OCS)	9.20%	8.00%
Mr. Coleman (Division)	9.30%	16.60%
Mr. Walters (FEA)	9.40%	24.70%

In other words, approximately 75 percent to 92 percent of ROEs authorized for natural gas utilities over the last five years were above the Opposing Witnesses' ROE recommendations. The Opposing Witnesses have not demonstrated investors perceive DEU to be so less risky than other natural gas utilities that they would reduce their return requirements to the bottom quartile of those awarded for other natural gas utilities. However, the low end of my recommended ROE (9.60 percent) ranks in the 46th percentile, or just below the median or 50th percentile. Stated differently, approximately 54.00 percent of authorized returns for natural gas utilities (*i.e.*, 101 of 187) in the last five years have been 9.60 percent or higher. From that perspective, my recommended ROE range is reasonable and consistent with returns available to other natural gas utilities.

Q. What is the practical implication for DEU of a return that is far below those authorized for other natural gas utilities?

A. The significant difference between the Opposing Witnesses' ROE recommendations and those available to other natural gas utilities raises a very practical concern. DEU must compete with other companies, including utilities and the other Dominion Energy affiliates, for the long-term capital needed to provide utility service. Given the choice between two similarly situated utilities, one with a return that falls far below industry levels, and another whose authorized return more closely aligns with those available to other utilities, investors will choose the latter.

Q. Have recent events emphasized the importance for a utility to maintain a strong financial profile?

A. Yes. Certain of the Opposing Witnesses justify their ROE recommendation, in part, on their premise that DEU is a "low risk" utility.[11] While utilities are generally considered to be less risky than other sectors, that does not mean they are risk-free. As the COVID-19 pandemic and Winter Storm Uri and the financial implications stemming from those events show, high impact adverse events can and do happen. A utility with a strong financial profile has a higher likelihood of withstanding adverse events and accessing capital at reasonable terms during constrained markets to the benefit of customers. Financial strength is especially critical during periods of market

[11] Direct Testimony of Casey J. Coleman, at 42, 46; Direct Testimony of Daniel J. Lawton, at 32-34.

dislocation, as experienced in 2020 and during the Great Recession of 2008-2009, for example. S&P noted that the utility sector's credit ratings weakened sharply in 2020:

> the utility industry performed poorly from a credit quality perspective. *The negative outlooks or CreditWatch negative listings doubled and downgrades outpaced upgrades for the first time in a decade by about 7 to 1*.[12]

That trend continued in 2021; S&P noted that "[f]or the second consecutive year, rating downgrades outpaced upgrades for the investor-owned North American regulated utility industry, causing the median rating on the industry to fall to the 'BBB' category."[13]

The depth and duration of the COVID-19 pandemic could have been more severe, and utilities must be prepared for unexpected adverse events with a margin of safety. Doing so enables utilities to provide safe, reliable service at a reasonable cost in all market environments to the benefit of customers.

Q. Do you agree with Mr. Walters' conclusion that natural gas utility credit ratings have improved?[14]

A. No, I do not. Comparisons to 2009 when the U.S. was in the depths of the greatest economic downturn in the previous 75 to 80 years are not a relevant or meaningful benchmark. As the U.S. came out of the recession, it is expected that utility credit

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[12] S&P Global Ratings, North American Regulated Utilities' Negative Outlook Could See Modest Improvement, at 1 (January 20, 2021).
[13] S&P Global Ratings, For The First Time Ever, The Median Investor-Owned Utility Ratings Falls To The 'BBB' Category, at 1 (January 20, 2022).
[14] Direct Testimony & Exhibits of Christopher C. Walters, at 8.

ratings would improve. The more appropriate review would be to more recent years when economic conditions were more stable. For example, in 2017, 100 percent of the natural gas utilities in Mr. Walters' Table CCW-3 were rated BBB+ or higher. Since then, the percentage of A-rated utilities has fallen from 67 percent to 51 percent, and the percentage of BBB-rated natural gas utilities has increased from 33 percent to 50 percent. This is consistent with the increase in downgrades in 2020 and 2021 noted by S&P above. Therefore, I disagree with Mr. Walters' characterization that utility credit ratings have improved.

B. Capital Market Environment

Q. Please briefly summarize the Opposing Witnesses' positions regarding the current capital market environment and its implications for the Company's Cost of Equity?

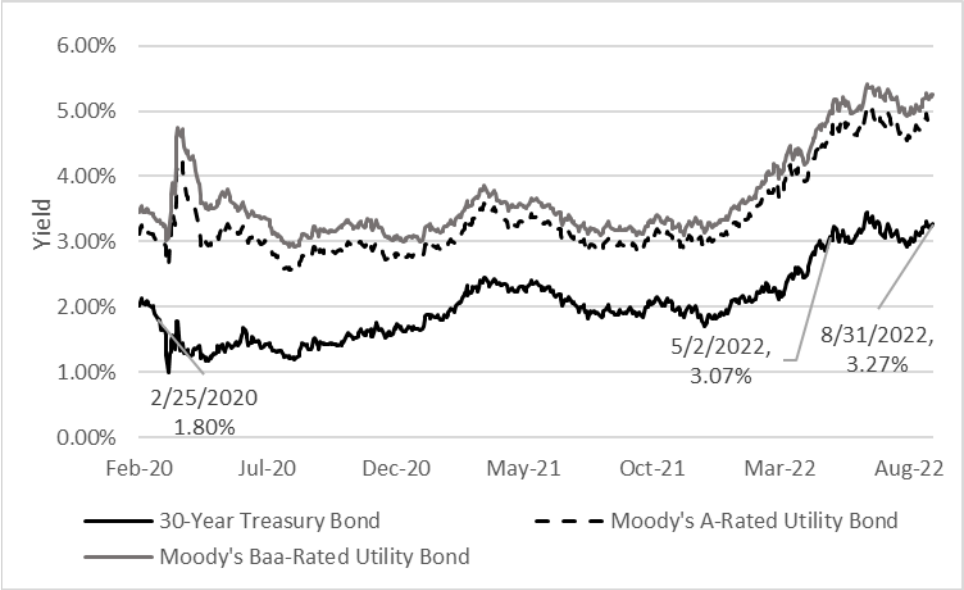
A. While the Opposing Witnesses generally agree with the facts presented in my Direct Testimony regarding higher interest rates and inflation, they largely dismiss them, suggesting they will be temporary or will not have a material effect on DEU. As discussed in my Direct Testimony, there are numerous market-based indicators that capital costs have risen since the Company's last rate case, including: (1) higher interest rates, including the 30-year Treasury bond yield and utility bond yields, (2) higher inflation, (3) higher utility Beta coefficients, including the proxy group, (4) an increase in the spread between utility bond yields and the 30-year Treasury bond yield, and (5) elevated market volatility. None of the Opposing Witnesses have disputed

these facts; they simply dismiss them and conclude that capital costs are low and will remain low.

Q. What has been the trend in bond yields and inflation since you filed your Direct Testimony?

A. Government bond yields and utility bond yields have continued to increase, as shown in Figure 5 below.

Figure 5: 30-Year Treasury Bond Yield and Utility Bond Yields (2020-2022)[15]



The 30-year Treasury bond yield has increased 20 basis points since my Direct Testimony was filed on May 2, 2022 and 147 basis points since the Commission's order in DEU's last rate case. Utility bond yields have risen 23 basis points since I

[15] Sources: Federal Reserve Bank of St. Louis FRED Database; Bloomberg Financial.

299 filed my Direct Testimony and 194 basis points between February 25, 2020 and
300 August 31, 2022. Mr. Lawton's assumption that equity costs change half as much as
301 the change in debt costs,[16] implies an increase in the Cost of Equity of approximately
302 75 to 100 basis points since the Company's last rate case.

303 Inflation remains elevated at the highest levels in the last 40 years, as shown
304 in Figure 6 below. Given this, it is unreasonable for the Opposing Witnesses to claim
305 that this increase does not affect the Cost of Capital and the authorized ROE.

306 **Figure 6: Year-over-Year Inflation Rates (February 2020 to July 2022)[17]**

	February 2020	February 2022	July 2022
Consumer Price Index	2.3%	7.9%	8.5%
Producer Price Index	1.1%	10.4%	9.8%
Personal Consumption Expenditures Price Index	1.9%	6.4%	6.3%

307

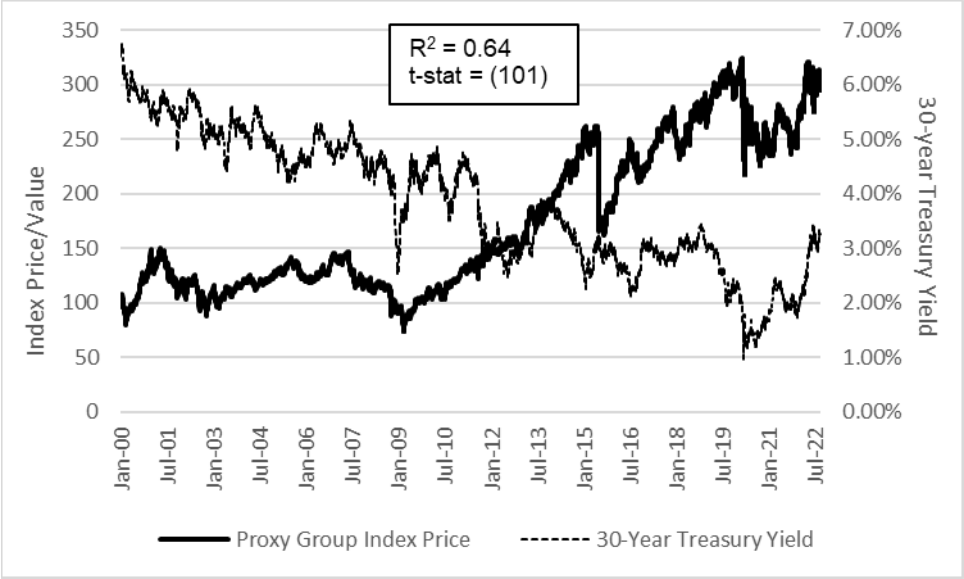
308 **Q. Mr. Walters asserts that "robust valuations" are "evidence" that utilities can**
309 **access capital "at relatively low cost."[18] What is your response?**

310 A. Mr. Walters' position fails to acknowledge that because utilities are capital intensive
311 enterprises, their "robust" valuations are strongly related to the interest rate
312 environment. As shown in Figure 7 below, between 2000 and 2008, utility valuations
313 as measured by the proxy group relied on by me, Mr. Walters, and Mr. Lawton, were

[16] Direct Testimony of Daniel J. Lawton, at 24.
[17] Sources: U.S. Bureau of Labor Statistics; Federal Reserve Bank of St. Louis, FRED Database.
[18] Direct Testimony & Exhibits of Christopher C. Walters, at 11.

within a relatively confined range. However, as the Federal Reserve deliberately reduced interest rates to provide extraordinary support for the U.S. economy in the wake of the Great Recession in 2008 and later during the COVID-19 pandemic in 2020, natural gas utility valuations increased by more than 2.5x over the valuation levels seen immediately prior to the 2008 Great Recession.

Figure 7: Proxy Group Equity Valuation vs. 30-Year Treasury Yields (2000-2022)[19]



As Figure 7 above shows, there is a strong, statistically significant inverse relationship between the 30-year Treasury yield and natural gas utility valuations. A simple linear regression of the two variables indicates that the 30-year Treasury yield explains approximately 64.00 percent of the variation in natural gas utility valuations (as measured by Mr. Walters' and my proxy group).

[19] Source: S&P Capital IQ, Federal Reserve Bank of St. Louis FRED database; Price level of Mr. Walters' and my proxy group is calculated as an Index.

Because the recent low level of interest rates was the result of the Federal Reserve's monetary policy deliberately put in place to support the U.S. economy during volatile, crisis-induced market environments, it is difficult to conclude that utilities' "robust" valuations reflect investors' perceptions that utilities' cost of equity is low. As explained in my Direct Testimony, low interest rates are often associated with higher market volatility, which suggests an *increase* in the cost of equity, not a decrease.[20] Importantly, the Federal Reserve is aggressively unwinding its expansionary monetary policies. Historically, utility valuations have often declined as interest rates rise, as indicated by the negative relationship between the two.

Q. What is your response to Mr. Walters' and Mr. Coleman's position that higher levels of volatility in the overall market do not indicate a similar increased level of risk for utilities?[21]

A. Mr. Walters and Mr. Coleman conflate my discussion of increased market volatility (and therefore increased risk in the market as a whole) with the presumption that utilities are "defensive" stocks and are therefore less risky. As explained in my Direct Testimony, however, both the utility sector and the S&P 500 lost approximately 34.00 percent of its value at the onset of the COVID-19 pandemic.[22] Additionally, the returns from the companies in my proxy group have been more volatile (*i.e.*, riskier) than the

[20] Direct Testimony of Jennifer E. Nelson, at 51-52.
[21] Direct Testimony & Exhibits of Christopher C. Walters, at 78; Direct Testimony of Casey J. Coleman, at 15.
[22] Direct Testimony of Jennifer E. Nelson, at 51.

S&P 500. As shown in Figure 20 in my Direct Testimony, the proxy group's relative volatility ratio has been above 1.0 and has been increasing. As that chart also demonstrates, the proxy companies' returns have been more correlated with returns of the S&P 500 Index. That is, the proxy companies have been trading in a more similar pattern as the S&P 500 Index. Whereas Mr. Walters' and Mr. Coleman's position may be based on past conventional wisdom that utilities are always defensive stocks, that is not always the case. Simply, utilities have been more volatile, and therefore riskier, than the broad market since at least February 2019. That data supports an increase in the Cost of Equity.

Lastly, as explained in my Direct Testimony, the CAPM theory is based on the premise that investors are only compensated for taking on undiversifiable, or market, risk.[23] Because market risk as measured by the Volatility Index ("VIX") has increased, it indicates higher investor return requirements under the CAPM theory.

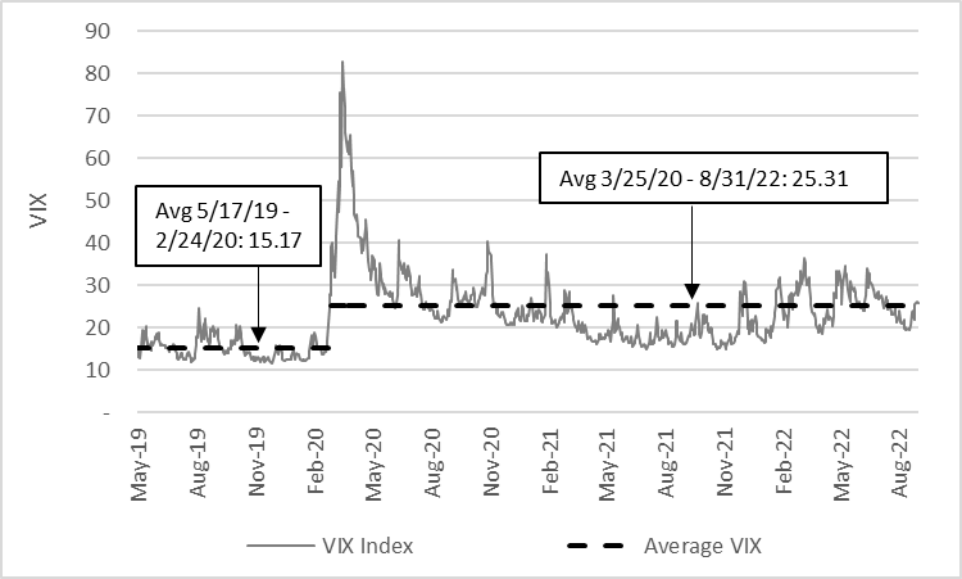
Q. Has market volatility remained elevated since you filed your Direct Testimony?

A. Yes. Mr. Coleman argues that the VIX has declined "in the last few months" concluding that "volatility is not as extreme or severe".[24] I agree that the VIX has declined from historic levels experienced during February and March of 2020, however, they have remained elevated relative to historical levels, and are nearly 67

[23] Direct Testimony of Jennifer E. Nelson, at 27.
[24] Direct Testimony of Casey J. Coleman, at 15.

362 percent above the levels seen in 2019 through February of 2020 when the Commission
363 issued its order in DEU's last rate case (*see* Figure 8 below).

364 **Figure 8: VIX (2019-2022)**



365

366 **Q. Mr. Coleman believes that higher inflation is captured in DEU's forward test**
367 **year and therefore the impact to DEU "is already considered" by incorporating**
368 **expenses adjusted for inflation.[25] What is your response?**

369 A. Mr. Coleman spends much of his discussion on inflation discussing the effect of
370 inflation on consumer consumption. However, he misses a key point: that capital costs
371 are a cost to the utility and not just to its customers. I agree that inflation affects a
372 utility's operating expenses; however, as explained in my Direct Testimony (and as
373 Mr. Coleman appears to agree), inflation directly affects a utility's capital costs, both

[25] Direct Testimony of Casey J. Coleman, at 18-21.

debt and equity costs.[26] Even if higher inflation is accounted for in the recovery of a utility's operating expenses, failing to reflect higher capital costs in the authorized Rate of Return as a result of higher inflation would violate the *Hope* and *Bluefield* standards and would not provide DEU a reasonable opportunity to earn a fair return.

IV. CAPITAL STRUCTURE

Q. What are the Opposing Witnesses' recommendations with respect to the Company's requested capital structure?

A. Mr. Coleman accepts the Company's requested capital structure consisting of 53.21 percent common equity and 46.79 percent long-term debt.[27] Mr. Lawton recommends a hypothetical capital structure of 51 percent common equity and 49 percent long-term debt with his 9.20 percent ROE recommendation.[28] If the Commission accepts the Company's capital structure, Mr. Lawton recommends a 20-basis point reduction in the authorized ROE.[29] Along the same lines, Mr. Walters suggests an ROE in the "lower half" of his recommended ROE range if the Commission accepts the Company's requested capital structure; however he does not appear to make a specific capital structure recommendation.[30]

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[26] Direct Testimony of Jennifer E. Nelson, at 61; Direct Testimony of Casey J. Coleman, at 20.
[27] Direct Testimony of Casey J. Coleman, at 24.
[28] Direct Testimony of Daniel J. Lawton, at 57.
[29] Direct Testimony of Daniel J. Lawton, at 60-61.
[30] Direct Testimony & Exhibits of Christopher C. Walters, at 27.

Q. Do you agree with Mr. Lawton's and Mr. Walters' recommendation to reduce the Company's authorized ROE if the Commission accepts the Company's requested capital structure?

A. No, I do not. As explained in detail below, Mr. Lawton's and Mr. Walters' recommendations are based on flawed comparisons to the Company's regulated capital structure to the proxy group capital structure at the consolidated holding company level in 2021. When a proper apples-to-apples comparison is done, the Company's requested capital structure is actually *more leveraged* than the proxy group, not less as Mr. Walters and Mr. Lawton purport. Additionally, the Company's requested capital structure reflects an increase in financial leverage (*i.e.,* debt) from its current authorized capital structure of 55.00 percent common equity and 45.00 percent long-term debt. The increase in debt increases the Company's financial risk, and, if anything, would indicate an *increase* in the Cost of Equity, not a decrease (all else equal). As Mr. Lawton correctly explains, "there is a cost for the savings associated with increased debt leveraging. That cost is increased financial risk to the firm causing equity costs to increase."[31]

[31] Direct Testimony of Daniel J. Lawton, at 55.

Q. Mr. Walters refers to a recent order by the Arkansas Public Service Commission to support an imputed capital structure.[32] Do you agree with Mr. Walters' and Mr. Lawton's suggestion that an imputed hypothetical capital structure is reasonable?

A. No, I respectfully disagree with that position. First, as Company witness Mr. Mendenhall explains, the Commission has routinely authorized a utility's actual capital structure.[33] Second, DEU issues its own debt and has its own bond rating, which, as Mr. Coleman notes are key considerations in support of using the actual capital structure consistent with utility cost of capital texts and the FERC's policy.[34] More importantly, as explained in more detail below, neither Mr. Walters nor Mr. Lawton has demonstrated that the Company's requested capital structure deviates substantially from sound utility practice. As Mr. Lawton acknowledges, optimizing the capital structure is a complex process and cannot be determined with precision.[35]

Q. Please explain in more detail why Mr. Lawton's hypothetical capital structure recommendation is unreasonable and improper.

A. Simply, Mr. Lawton's hypothetical capital structure recommendation is not based on DEU's specific risks and financing requirements, contrary to utility financing

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[32] Direct Testimony & Exhibits of Christopher C. Walters, at 26.
[33] Confidential Rebuttal Testimony of Kelly B. Mendenhall, at 8-9.
[34] Direct Testimony of Casey J. Coleman, at 25; *see also*, 154 FERC ¶ 61,004, Docket No. ER15-945-001, at Para. 35 (January 6, 2016); David C. Parcell, The Cost of Capital – A Practitioner's Guide, at 47 (2020 Edition).
[35] Direct Testimony of Daniel J. Lawton, at 55.

practices. His recommendation is based on the proxy group *holding company* average in 2021 and presumes that DEU should be financed with the same proportions of equity and debt as an "average" natural gas utility. However, as Mr. Lawton correctly observes, "[t]here exists no set definitive debt/equity relationship for all firms or all industries in terms of leveraging", concluding that there exists a "range of capital structure that generally meets the goal of minimizing the overall cost of capital while maintaining the firm's financial integrity."[36] Mr. Lawton has not demonstrated that an equity ratio of 51.00 percent is within some theoretical "optimal" range, but 53.21 percent is not.

As explained below, utility capital structures vary widely based on the unique needs of each company and the assets being financed. While I agree that reviewing the actual and authorized capital structures in place at other natural gas utilities informs the reasonableness of a utility's capital structure and may be used as a broad indicator of industry practice, in my opinion it is inappropriate to impute a hypothetical capital structure for ratemaking purposes unless it is clearly demonstrated that the actual capital structure deviates substantially from sound utility practice.[37] As discussed below, Mr. Lawton has not satisfied that burden.

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[36] Direct Testimony of Daniel J. Lawton, at 55.
[37] An example would be if an operating subsidiary was financed with 100 percent equity. *See also*, David C. Parcell, The Cost of Capital – A Practitioner's Guide, at 47 (2020 Edition).

Q. For context, please summarize the factors utilities generally consider in their financing practices.

A. Companies (including subsidiary companies) are financed in light of the specific risks and funding requirements associated with their unique individual operations. Capital structure management is dynamic and complex because it must satisfy multiple objectives subject to multiple constraints. It therefore is important to understand utility financing practices, including the principles and constraints that drive financing decisions, and how that practice is reflected in the Cost of Capital. As explained below, utility financing practices reflect the nature of regulation and utilities' investments made under the regulatory compact. Although regulated utilities face common financing principles and constraints, the unique risks and operations of each utility results in a wide variation of capital structures.

In many respects, the nature of regulation determines the nature of utility assets, and how they are financed. In exchange for the obligation to serve, equity investors expect utilities to have a reasonable opportunity to earn a fair return on prudent investments over the life of the investments. It is the nature of regulation, therefore, that enables utilities to finance large, essentially irreversible, investments that are recovered over decades. Moreover, because the obligation to serve must be fulfilled regardless of capital market conditions, utility capital structures (and the financial strength they support) are established to ensure capital access not only during normal markets, but when markets are constrained as well. When markets are

constrained, only those utilities with sufficient financial strength can attract capital at reasonable terms to customers' benefit. That financial strength provides those utilities with critical financing flexibility. Relying more heavily on debt, as Mr. Lawton proposes, increases the risk of refinancing maturing obligations during less accommodating market environments at likely higher costs. Financing flexibility, therefore, has a cost. As Moody's explains:

> Liquidity and access to financing are of particular importance in this sector. Utility assets can often have a very long useful life – 30, 40 or even 60 years is not uncommon, as well as high price tags…Utilities are among the largest debt issuers in the corporate universe and typically require consistent access to the capital markets to assure adequate sources of funding and to maintain financial flexibility.[38]

The requirement to access the capital markets in all market conditions contrasts with the financial needs of other entities without the legal obligation to serve. Because of that obligation, the financial flexibility required to access to both long-term capital and short-term liquidity is critical for utilities' ability to continually attract capital. In other words, unregulated companies may adjust the timing and amount of major capital expenditures to align with economic cycles and defer decisions and investments to better match market conditions, whereas utilities have limited options to do so. Ensuring the financial strength required to access capital because of reduced spending flexibility, therefore, is critical not only to utilities and their shareholders, but to customers as well.

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[38] Moody's Investor Service, Rating Methodology: Regulated Electric and Gas Utilities, at 25 (June 23, 2017).

Q. Are there recent examples within the proxy group that demonstrate the importance of a strong balance sheet and financial profile in order to maintain access to capital?

A. Yes, there are. In February of 2021, Winter Storm Uri hit Texas and the midwestern U.S., knocking out electric power to millions of customers and constraining natural gas supplies, which pushed customer demand and natural gas commodity costs to record highs. Because of their obligation to serve, natural gas utilities cannot delay or defer purchasing natural gas, as customers rely on natural gas to heat their homes. Consequently, as Moody's noted, the surge in natural gas commodity costs "strained liquidity for utilities in Texas, Oklahoma, Kansas, and neighboring states."[39] Two of the proxy companies, Atmos Energy Corporation and ONE Gas, Inc., each reported more than $2 billion in additional natural gas commodity costs attributed to the storm.[40] However, each were able to issue more than $2 billion in debt at low costs[41] which may not have been possible but for their A-rated credit ratings,[42] strong balance sheets, and expectation for constructive regulatory treatment in recovering the natural

[39] S&P Capital IQ Pro, "Gas utilities 'most severely affected' by winter storm prices, Moody's says," March 8, 2021.
[40] S&P Capital IQ Pro, "Gas utilities 'most severely affected' by winter storm prices, Moody's says," March 8, 2021.
[41] S&P Capital IQ Pro, "Atmos Energy completes senior notes offering," March 9, 2021; "One Gas to pay $2.2B for gas purchases, secures $2.5B term loan facility," February 22, 2021.
[42] Nonetheless, both companies were downgraded. S&P downgraded Atmos Energy Corporation from A to A- on February 22, 2021. S&P downgraded ONE Gas Inc. two notches from A to BBB+ on February 23, 2021.

gas commodity costs.[43] In this situation, Atmos Energy Corporation's and ONE Gas's customers benefited from these companies' strong balance sheets, each of which had approximately 58 percent to 60 percent equity in their regulated operating company capital structures as of December 31, 2020 (*see* DEU Exhibit 2.08).

Adverse events can happen unpredictably (*see, e.g.*, Winter Storm Uri and COVID-19), and it is important that utilities maintain a strong financial profile that enables them to access capital when and as needed in all market environments.

Lastly, the examples of Atmos Energy and ONE Gas, Inc. raise another problem with Mr. Lawton's and Mr. Walters' analyses: their conclusion regarding the appropriateness of the proxy group average holding company equity ratio is skewed by relying only data from 2021. As discussed in my Direct Testimony, it is important to review capital structures over several periods rather than a point in time to avoid misleading conclusions drawn from temporary or abnormal data.[44] In other words, the proxy group average equity ratio in 2021 in Mr. Lawton's and Mr. Walters' exhibits[45] is skewed by the fact that two of the six proxy companies uncharacteristically took on significant debt in order to maintain safe and reliable service in an emergency. By focusing only on 2021 and not reviewing capital structures over a longer period, Mr. Walters and Mr. Lawton mistakenly draw the

[43] *See, e.g.*, S&P Capital IQ Pro, "Gas utilities face multibillion-dollar financing needs after storm price surge," February 22, 2021.
[44] Direct Testimony of Jennifer E. Nelson, at 66.
[45] *See* FEA Exhibit 1.02 and Exhibit OCS 3.5.

conclusion that it is reasonable to set DEU's 2023 test period capital structure based on abnormal data in 2021. I disagree with that conclusion and find it particularly unreasonable given the significant changes in the market since then.

Q. What are your concerns with Mr. Lawton's and Mr. Walters' comparisons to the capital structures in place for the proxy group at the consolidated holding company level as a measure of the appropriate capital structure for DEU?[46]

A. Mr. Lawton's and Mr. Walters' analyses are apples-to-oranges comparisons. Because capital at the consolidated holding company level may finance unregulated operations, comparisons to the parent company capital structure may lead to flawed and misleading conclusions. The rates in this proceeding will be set for the Utah regulated natural gas operations for DEU, an operating subsidiary of Dominion Energy, Inc. As explained above, regulated utilities' obligation to serve presents a unique set of constraints that affect regulated utilities' financing practices relative to unregulated operations, reducing financing flexibility that is critical for utilities.

Comparing the data in Exhibit OCS 3.5, FEA Exhibit 1.02, and Exhibit DEU 2.08 (and updated in Exhibit DEU 2.17R), it is clear that the consolidated holding companies are financed differently than their regulated natural gas operating subsidiaries. The reason is because the capital at the holding company level finances

[46] Direct Testimony of Daniel J. Lawton, at 57, Exhibit OCS 3.5; Direct Testimony & Exhibits of Christopher C. Walters, at 25, 28 and FEA Exhibit 1.02.

a variety of business segments (both regulated and unregulated) each with different risk profiles. For example, several of the proxy group holding companies also have electric or water utility operations, which would be contained within the consolidated capital structures, and have a different risk profile than natural gas operations. For these reasons, the proper comparison of the Company's capital structure is to the capital structures that finance the proxy companies' *regulated natural gas* operations.

Q. Mr. Lawton and Mr. Walters review the annual average authorized equity ratio over recent years to support their capital structure recommendation.[47] Is the Company's requested equity ratio consistent with authorized equity ratios during that time?

A. Yes, it is. I note that the average annual authorized ROE values in Mr. Lawton's Table 16 include authorized equity ratios from jurisdictions that include non-investor supplied capital (*e.g.*, deferred income taxes)[48] as well short-term debt in the ratemaking capital structure. Because RRA's authorized equity ratios are reported as a percentage of *total* capital, equity ratios from jurisdictions that include short-term debt and non-investor supplied capital in the ratemaking capital structure are lower than and not comparable to DEU's capital structure that includes only long-term investor supplied capital.[49] As shown in Figure 9 below, the Company's requested

[47] Direct Testimony & Exhibits of Christopher C. Walters, at 6-7; Direct Testimony of Daniel J. Lawton, at 55-56.
[48] Specifically, Arkansas, Florida, Indiana, and Michigan.
[49] Direct Testimony & Exhibits of Christopher C. Walters, at 6.

equity ratio is within the range of annual authorized equity ratios over that same period (*see also* DEU Exhibit 2.18R).

Figure 9: Range of Authorized Equity Ratios 2017 to 2022[50]

Year	Range
2017	42.90% - 55.70%
2018	48.00% - 56.06%
2019	48.00% - 60.18%
2020	48.00% - 60.12%
2021	46.26% - 59.88%
2022	47.00% - 54.50%

Q. Is Mr. Lawton's 20-basis point downward adjustment based on his review of DEU's proposed capital structure correct?

A. No, it is not. Mr. Lawton's "financial risk" adjustment is incorrect because it is based on the approximate average proxy group holding company equity ratio in 2021 (51 percent). However, as explained above, that analysis does not accurately reflect the financing practices of regulated natural gas utility companies. Additionally, Mr. Lawson's 2021 average equity ratio is skewed by substantial debt issuances of certain of the proxy companies in the wake of Winter Storm Uri.

My capital structure analysis presented in DEU Exhibit 2.08 (and updated in DEU Exhibit 2.17R), however, calculates the capital structures in place at the proxy

[50] Source: Regulatory Research Associates. 2022 includes rate cases completed through August 31, 2022; *see also* DEU Exhibit 2.18R. Excludes rate cases from jurisdictions that include non-investor supplied capital in the ratemaking capital structure.

565 companies' *regulated* natural gas utility operations; therefore, it provides an apples-
566 to-apples comparison of DEU's financial risk relative to the proxy group. As shown
567 in DEU Exhibit 2.08 and DEU Exhibit 2.17R, the Company's requested equity ratio
568 of 53.21 percent is approximately *400 basis points below* the proxy group regulated
569 natural gas utility average and median equity ratios over the last three years. Properly
570 applying Mr. Lawton's financial risk adjustment of 10.7 basis points for every 100-
571 basis point increase in capital structure debt percentages, therefore, would result in an
572 *upward* financial risk adjustment of approximately 42.80 basis points or more, not a
573 20-basis point decrease as Mr. Lawton suggests.

574 **Q. What are your conclusions regarding DEU's requested capital structure?**

575 A. There simply is no basis to conclude that the Company's actual equity ratio of 53.21
576 percent deviates substantially from sound utility practice and an imputed hypothetical
577 structure is warranted. As discussed above:

578 • The use of DEU's actual capital structure is consistent with the
579 Commission's precedent, as well as financial and regulatory practice;

580 • DEU's requested capital structure reflects its specific financing
581 requirements and risk profile and enables it to maintain its financial
582 strength, which translates into favorable access to capital for the benefit of
583 customers;

584 • The Company's requested capital structure is reasonable compared to the
585 range of equity ratios for the regulated natural gas operating companies

held by the proxy group as well as to authorized equity ratios for natural gas utilities in other jurisdictions; and

- Using a properly structured analysis, DEU's requested capital structure is *more* leveraged than the capital structures that finance the regulated natural gas operations within the proxy group, and therefore contains *more* financial risk, not less.

For these reasons, DEU's requested capital structure is reasonable and appropriate and should be approved by the Commission. The Commission should reject Mr. Lawton's recommendation to impute a hypothetical capital structure for ratemaking purposes. Lastly the Commission should reject Mr. Lawton's and Mr. Walters' recommendations to reduce the authorized ROE if the Company's requested capital structure is approved.

V. RESPONSE TO DIVISION WITNESS MR. COLEMAN

Q. What is Division witness Mr. Coleman's recommendation in this proceeding with respect to the Company's Cost of Capital?

A. Mr. Coleman recommends an overall Cost of Capital of 6.82 percent, which reflects the Company's requested capital structure and cost of long-term debt, and a Cost of

Equity recommendation of 9.30 percent,[51] within a range of 8.93 percent to 9.73 percent.

Q. Is Mr. Coleman's Cost of Equity recommendation of 9.30 percent established through his ROE analytical model results?

A. No. Mr. Coleman's 9.30 percent ROE recommendation is well above three of his four model results (*see* Figure 10 below), which suggests he does not find that his results produce reasonable estimates of the Company's Cost of Equity. The only model result that is even close to his 9.30 percent recommendation is his Constant Growth DCF result using projected growth rates (9.40 percent). However, given Mr. Coleman's objection to forecasted growth rates,[52] it's not clear that he gave this result any weight. Without any evidence from his analytical ROE model results, Mr. Coleman is left to compare his 9.30 percent ROE recommendation to the approximate average authorized ROE for natural gas utilities between January and June 2022 as the only support for his recommendation.[53] As I demonstrate later, correcting the inaccuracies in Mr. Coleman's analyses produces results that are more reasonable and consistent with my recommended ROE range.

[51] Direct Testimony of Casey J. Coleman, at 4.
[52] Direct Testimony of Casey J. Coleman, at 21-22.
[53] Direct Testimony of Casey J. Coleman, at 54.

Figure 10: Summary of Mr. Coleman's ROE Model Results and Recommendation

ROE Methodology	Mean ROE Estimate
Constant Growth DCF (historical growth)	8.25%
Constant Growth DCF (projected growth)	9.40%
CAPM	5.87% - 6.77%
Risk Premium	7.77% - 7.98%
Overall ROE Recommendation	**9.30%**

Although returns authorized by other regulatory commissions are relevant information considered by investors, as explained earlier in my Rebuttal Testimony, they must be considered within the proper context to be useful. Moreover, past authorized ROEs are less useful when market conditions that exist during the current proceeding differ substantially from those that existed when past ROEs were determined, as is the case here. Nonetheless, I appreciate that Mr. Coleman recognizes his ROE model results are far removed from returns available to other natural gas utilities and are therefore unreasonable.

Q. Before responding to Mr. Coleman's analyses and positions, what are your initial observations regarding Mr. Coleman's testimony, his analyses, and the conclusions he draws from them?

A. Aside from the fact that Mr. Coleman's model results do not appear to support his 9.30 percent ROE recommendation, his testimony and analyses contain inaccuracies, and, at times, are contradictory to his positions and conclusions. As such, it is difficult to reconcile his testimony with his analyses and conclusions.

Q. Mr. Coleman expresses significant concern regarding the accuracy of inputs and the use of projected data.[54] Do you have any thoughts for the Commission to consider with respect to projected data and the accuracy of model inputs?

A. Yes, I do. As explained earlier and in my Direct Testimony, the Cost of Equity estimation process is, by nature, an inexact science. Unlike the costs of debt, the Cost of Equity is not observable and therefore must be estimated. Because it must be estimated, it requires reasoned judgment and a technical understanding of each of the theories and assumptions underlying the financial models and how they are influenced by economic and financial market conditions. While each of the models are based on sound financial and economic theories, they are subject to assumptions and constraints that may be more or less relevant depending on the market environment at the time of the analysis. That is, they are only models, and, therefore, reflect simplified approximations of investor behavior. Whether an analyst's inputs are based on historical data or projected data, both are estimates, and neither are likely to be exactly accurate. Moreover, because the Cost of Equity is forward-looking, applying historical data to the models assumes that the historical data is a reasonable estimate for that input in the future. In other words, the use of historical data is simply another forecast. In some circumstances, assuming historical data will continue in the future may be a reasonable assumption; in other circumstances it is not.

[54] Direct Testimony of Casey J. Coleman, at 21-22.

Further, I am not aware of any studies that have conclusively determined that historical data produces ROE estimates that are any more "accurate" in the long run than those using projected data. In fact, I, and other ROE experts (including Mr. Lawton in this proceeding), caution against relying solely on historical data, as past performance does not always predict future performance, as the saying goes. Nonetheless, my analyses consider both historical and projected data where appropriate, as doing so provides a more robust evaluation of the Cost of Equity. Relying on only historical data, or on only one source of data, renders the analysis more susceptible to any inherent biases or anomalies, exacerbating Mr. Coleman's concerns.

In the end, accuracy can only be determined in hindsight; yet, accuracy in hindsight is largely irrelevant to the determination of forward-looking investor return requirements. As the FERC has concluded, the Cost of Equity depends on what investors expect, not on whether their expectations turn out to be true.[55] Even if it were relevant, the outcome of whether expectations turn out to be true in hindsight is reflected in investors' expectations going forward. In other words, as historical data becomes available to investors, investors adjust their expectations accordingly. In the

[55] *See*, 147 FERC ¶ 61,234, Docket No. EL11-66-001, Opinion No. 531 Order on Initial Decision, at para 88 (June 19, 2014).

long run, markets are quite efficient and actual observed outcomes will converge with investor expectations.[56]

I appreciate and understand the Commission has the difficult task of sorting through the different inputs and analyses presented by the ROE witnesses to determine the appropriate ROE for DEU. The determination of the Cost of Equity is complex and requires reasoned judgment and a technical understanding of the assumptions and theories underlying each financial model. However, in my opinion, the Commission should not be overly burdened with whether the model inputs are accurate in hindsight. The more important task for the Commission is to determine whether the "end result"[57] is just and reasonable, and meets the *Hope* and *Bluefield* comparable risk, capital attraction, and financial integrity standards in the current market environment. In my opinion, the Opposing ROE witnesses' ROE recommendations do not meet those standards.

A. Proxy Group Composition

Q. What is the Proxy Group Mr. Coleman uses in this proceeding?

A. Mr. Coleman's proxy group consists of nine publicly traded natural gas utilities that includes the six companies in my proxy group, as well as Chesapeake Utilities, South Jersey Industries, and Southwest Gas Holdings.

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[56] *See, e.g.,* Roger A. Morin, Ph.D., New Regulatory Finance, at 157 (2006).
[57] *Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 591, 602 (1944).

Q. Do you agree with the three additional companies Mr. Coleman included in his proxy group?

A. No, I do not. First, I disagree with the inclusion of South Jersey Industries and Southwest Gas Holdings. Mr. Coleman recognizes that both companies have been involved in merger activity in 2022, but he dismisses the potential adverse effects that merger activity may have on the market data for these companies because "many of the models are using historical information to determine the appropriate Cost of Capital".[58] Consequently, he concludes it is appropriate to include these companies in the proxy group.

With respect to Chesapeake Utilities, Mr. Coleman notes that *Value Line* reported that 67.40 percent of Chesapeake Utilities' revenues were from "regulated utilities", and therefore it meets my 60.00 percent threshold and should be included in the proxy group.[59] I have two issues with Mr. Coleman's position. First, my screening criterion is based on *regulated operating income*, not regulated revenue, as Mr. Coleman incorrectly states. Second, my screening criteria threshold focuses specifically on *regulated natural gas* operations, not total regulated utility operations. Chesapeake Utilities has regulated electric operations as part of its regulated energy business segment, which reflects approximately 20 percent of its regulated revenue.[60]

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[58] Direct Testimony of Casey J. Coleman, at 33.
[59] Direct Testimony of Casey J. Coleman, at 33.
[60] Source: Chesapeake Utilities Corporation 2021 SEC Form 10-K, pages 75-76.

Excluding the 20 percent of regulated electric revenue, from the 67.40 percent regulated revenue indicates that only approximately 47.40 percent of Chesapeake Utilities' regulated revenue is from natural gas operations. On both these points, Chesapeake Utilities does not meet my screening criterion.

Q. Do you agree with Mr. Coleman that, because some of the historical data applied in the models may precede the merger activity by South Jersey Industries and Southwest Gas Holdings, it is appropriate to include these companies?

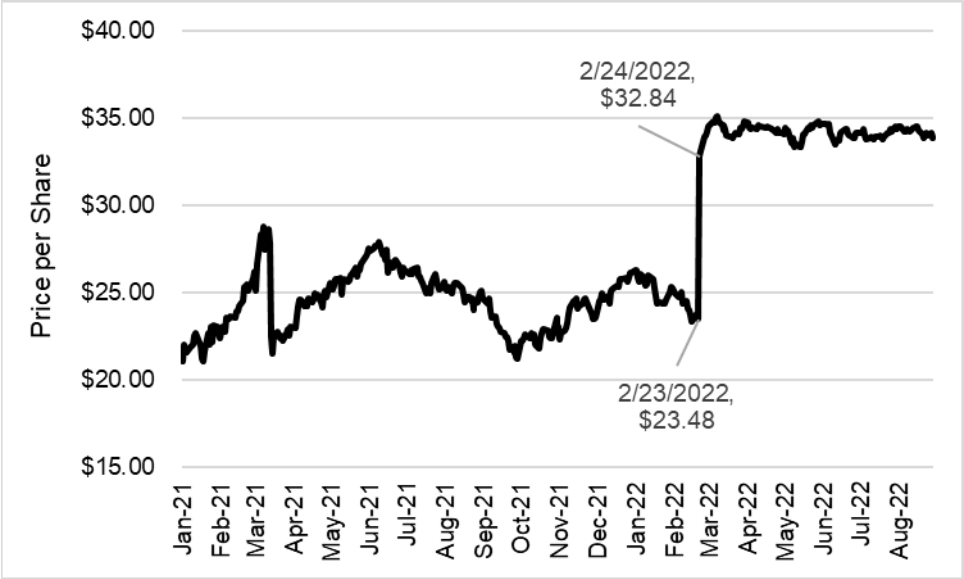
A. No. The primary concern is that merger activity may materially affect these companies' stock prices and investors' expectations regarding growth in an abnormal manner. This abnormal market data would primarily affect the DCF model and to a lesser extent the CAPM model through the Beta coefficient. Mr. Coleman relies on average stock prices between June 3, 2022 and July 18, 2022 in his DCF model. None of Mr. Coleman's stock price data for these two companies precedes the merger announcement of these two companies, as he asserts.[61] In other words, all the stock prices for these two companies applied in Mr. Coleman's DCF model are potentially influenced by abnormal activity, biasing his DCF results for these companies.

For example, as shown in Figure 11 below, South Jersey Industries' stock price increased significantly (nearly 40 percent) after the announcement of its acquisition

[61] South Jersey Industries announced its acquisition by JP Morgan's Infrastructure Investment Fund ("IIF") on February 24, 2022 and that acquisition is still pending. Southwest Gas announced its intention to sell its unregulated Centuri Group business on March 1, 2022. That transaction is also pending.

by IIF on February 24, 2022, and has remained abnormally elevated, including during the time of Mr. Coleman's DCF study period.

Figure 11: South Jersey Industries Stock Price (2021-2022)



Abnormally high stock prices result in an abnormally low dividend yields in the DCF model, rendering Mr. Coleman's DCF estimate for South Jersey Industries biased and unreliable. By including South Jersey Industries in his proxy group, Mr. Coleman is recommending that the Commission determine DEU's ROE based on biased and abnormal market data. I disagree with that position.

Q. Can other ROE models be affected by abnormal stock price data?

A. Yes, but likely to a lesser extent than the DCF model. Beta coefficients are calculated using stock prices, and, therefore, the CAPM results could be affected by abnormal stock price data. The direction and magnitude of the effect on the Beta coefficient

738 depends on the relative volatility and correlation of a company's stock price
739 movements with the broad market.

740 Most sources I am aware of that publish Beta coefficient data use market data
741 over a period of two to five years in their calculations. *Value Line* (whose Beta
742 coefficients are relied on by all the ROE witnesses in this proceeding), for example,
743 calculates its Beta coefficients using weekly returns over a period of five years (*i.e.*,
744 260 data observations). Short, abnormal blips in stock prices will have relatively little
745 influence on Beta coefficient calculations that include five years of data. However,
746 the more data observations that include abnormal market data, the higher the potential
747 for abnormal Beta coefficients. Even though the CAPM model is likely less affected
748 by abnormal market data, in my opinion, it is prudent to simply remove companies
749 with significant merger activity or financial events to avoid the potential of biasing the
750 ROE estimates.

751 **Q. What are your conclusions regarding the proxy group composition?**

752 A. I continue to believe my proxy group is reasonably comparable (although not
753 identical) to DEU and continue to apply my updated ROE analyses to the same proxy
754 group. With respect to any of my analyses in response to Mr. Coleman's analyses,
755 however, I apply them to his proxy group of nine companies despite my criticisms
756 noted above.

B. Application of the Discounted Cash Flow Analysis

Q. Please summarize Mr. Coleman's DCF analyses and results.

A. Mr. Coleman develops two Constant Growth DCF analyses and applies them to his proxy group of nine publicly traded natural gas utilities. He calculates the dividend yield for both approaches using (1) the annual dividend per share from *Value Line* and (2) the average stock price for the 30-trading days ended July 18, 2022 for each of his proxy companies. Although he does not explicitly state so in his direct testimony, his first Constant Growth DCF analysis appears to use five-year *historical* earnings and dividend growth rates from *Value Line* as the long-term growth rate component. His second Constant Growth DCF analysis uses *Value Line's* five-year *projected* dividend growth rates and the average *projected* earnings growth rates from Zacks, Yahoo!, and *Value Line* for each proxy company. Based on a Commission order from 20 years ago, Mr. Coleman applies a 75 percent weight to the earnings growth rates and a 25 percent weight to the dividend growth rates in calculating his ultimate DCF-based ROE estimates. Mr. Coleman's mean and median DCF estimates range from 7.52 percent to 9.40 percent as summarized in Figure 12 below.

Figure 12: Mr. Coleman's DCF Results, As Filed[62]

DCF Range	DCF-based ROE Estimate
Constant Growth DCF (historical growth rates)	
5.05% - 11.13%	Mean: 8.25%
	Median: 7.52%
Constant Growth DCF (projected growth rates)	
8.75% - 10.12%	Mean: 9.40%
	Median: 9.30%

Q. What areas of disagreement do you have with Mr. Coleman's DCF analyses?

A. I disagree with Mr. Coleman's objection with projected growth rates and the use of dividend growth rates in the DCF analysis.

Q. Why is it inappropriate to rely on historical growth rates in the DCF model?

A. As explained earlier, the Cost of Equity is forward-looking and the growth rate component reflects the long-term annual growth rate *expected* in perpetuity.[63] As such, investors' expected growth rates are the most appropriate for use in the DCF model. While I agree that historical growth likely factors into investors' expectations of future growth, in my opinion, it is unreasonable and unnecessary to give specific weight to historical growth rates because they are likely already reflected in analysts' expectations. As noted earlier, applying historical growth rates as the expected growth component in the DCF model assumes these historical growth rates will persist in

[62] DPU Exhibit 2.03.
[63] Direct Testimony of Jennifer E. Nelson, at 19.

perpetuity. As Mr. Lawton acknowledges,[64] past performance is not necessarily an indicator of future performance. Therefore, placing any weight on historical growth rates gives undue weight to historical growth estimates.

As explained earlier, Mr. Coleman's concern regarding the accuracy of projected growth rates is misplaced. He has provided no evidence that 5-year historical growth rates are any more accurate than projected growth rates in the long run. To the contrary, several academic studies demonstrate that analysts' projections better predict stock values than do historical growth rates.[65] Moreover, to the extent historical data may be useful, academics and practitioners advise using historical data over very long time periods to avoid biases susceptible to shorter periods of data.[66] Five-year or even ten-year historical growth rates are more affected by data that may reflect abnormal growth periods. For example, it would not have been reasonable to rely on five-year historical growth rates in 2013, when the prior five years reflected a period during which the U.S. experienced one of the biggest economic recessions it had seen in over 70 years. Relying on that data would assume those depressed market conditions going forward in perpetuity and would certainly not be a reasonable reflection of investors' expectations going forward.

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[64] Direct Testimony of Daniel J. Lawton, at 45.
[65] Direct Testimony of Jennifer E. Nelson, at 21.
[66] *See e.g.,* Duff & Phelps, 2022 SBBI Yearbook, at 201-202; Roger A. Morin, Ph.D., New Regulatory Finance, at 156-157 (2006).

Q. What is your concern with relying on dividend growth rates in the DCF model?

A. As explained in my Direct Testimony, over the long term, dividend growth can only be sustained by earnings growth.[67] Additionally, *Value Line* is the only source I am aware of that publishes dividend growth rate projections. The fact that dividend growth rate projections are not widely reported by other sources further supports the conclusion that earnings growth is the most meaningful measure of growth among the investment community. In other words, if investors relied heavily on projections of dividend growth, more sources would offer that data.

Further, because *Value Line* is the only source of dividend growth rates, it increases the likelihood of bias or anomalies influencing the analysis, exacerbating Mr. Coleman's concern with "accuracy." In fact, Mr. Coleman's DCF analysis illustrates this problem. First, *Value Line* did not report a five-year historical dividend growth rate for NiSource, Inc., so Mr. Coleman had to use another estimate. Second, Mr. Coleman observes that *Value Line*'s dividend growth rates for Northwest Natural Holding company were "outliers," so he excluded them from his analysis. These problems are less of a concern when there are multiple estimates of growth from various sources as is the case with projected earnings growth rates.

[67] Direct Testimony of Jennifer E. Nelson, at 21.

Q. Please explain further why analysts' projected earnings growth rates are the most appropriate measure of growth in the DCF analysis.

A. The appropriate growth rate applied in the DCF model is investors' growth expectation embodied in the valuation of the firm (*i.e.*, stock price appreciation). As noted earlier and explained in my Direct Testimony, academic research has shown that analysts' consensus earnings forecasts are better at predicting the valuation of common stocks.[68] That includes the study by Myron Gordon, *et.al*, cited by Mr. Walters which found that analysts' earnings growth forecasts better predicted returns for public utility stocks than did historical earnings growth, historical dividend growth, and sustainable (or retention) growth rates.[69] Additionally, academic studies suggest that investors base their investment decisions on analysts' expectations of growth in earnings.[70] I am not aware of any similar findings regarding other measures of growth including dividend, book value, or sustainable growth estimates.

Lastly, when providing guidance to investors regarding the total return targets in their investor presentations, companies define the total return as the dividend yield

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[68] Direct Testimony of Jennifer E. Nelson, at 21.
[69] David Gordon, Myron Gordon, and Lawrence Gould, *Choice Among Methods of Estimating Share Yield*, The Journal of Portfolio Management, Spring 1989 (filed as Mr. Walters' "CCW Confidential WP 14")
[70] *See*, *e.g.*, Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts Growth Forecasts,* Financial Management, Summer 1992, at 65; and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management, Spring 1988, at 81. Please note that while the original study was published in 1988, it was updated in 2004 under the direction of Dr. Vander Weide. The results of that updated study are consistent with Vander Weide and Carleton's original conclusions.

plus *earnings* growth, not dividend, book value, or sustainable growth estimates.[71] This demonstrates that companies recognize investors are most concerned with earnings growth when making investment decisions.

Q. Do you have any additional concerns with Mr. Coleman's DCF analyses?

A. Yes, I do. I reviewed Mr. Coleman's workpapers and found several inconsistencies with his DCF model inputs. First, I reviewed Mr. Coleman's *Value Line* data supposedly from May 27, 2022 against *Value Line's* individual company reports issued on May 27, 2022, and found many data points do not match the *Value Line* reports. In all but one instance, the growth rates he applied were lower than those reported by *Value Line* on May 27, 2022, as shown in Figure 13 below.

Figure 13: *Value Line* Earnings and Dividend Growth Rates[72]

		5-Year EPS Growth		Proj EPS Growth		5-Year Dividend Growth		Proj Dividend Growth	
		Mr. Coleman, As Filed	VL Report 5/27/22	Mr. Coleman, As Filed	VL Report 5/27/22	Mr. Coleman, As Filed	VL Report 5/27/22	Mr. Coleman, As Filed	VL Report 5/27/22
Atmos Energy	ATO	8.50%	8.50%	7.50%	7.50%	8.00%	8.00%	7.00%	7.00%
Chesapeake Utilities	CPK	9.00%	***9.50%***	8.00%	***7.50%***	7.50%	***8.50%***	8.00%	***8.50%***
New Jersey Resources	NJR	2.50%	2.50%	4.50%	***5.00%***	6.50%	6.50%	5.00%	5.00%
NiSource Inc.	NI	4.00%	4.00%	9.00%	***9.50%***	4.50%	***NA***	4.50%	4.50%
Northwest Natural	NWN	2.50%	2.50%	5.50%	***6.50%***	0.50%	0.50%	0.50%	0.50%
ONE Gas, Inc.	OGS	6.00%	***9.50%***	6.00%	***6.50%***	6.50%	***13.50%***	6.50%	6.50%
South Jersey Inds.	SJI	0.50%	0.50%	10.00%	***10.50%***	3.50%	3.50%	3.50%	***4.00%***
Southwest Gas	SWX	4.50%	4.50%	8.00%	***10.00%***	7.00%	7.00%	5.00%	***5.50%***
Spire Inc.	SR	2.50%	2.50%	9.00%	9.00%	6.00%	6.00%	5.00%	5.00%

[71] *See e.g.,* ALLETE Inc., March 16, 2021, Investor Presentation, at 14; Alliant Energy, June 1, 2021, Investor Presentation, at 3; American Electric Power Company, Inc., August 12, 2021, Investor Presentation at 7; Duke Energy Corporation, May 10, 2021, Earnings Review and Business Update, at 13; Xcel Energy, September 10, 2021, Investor Presentation, at 2.

[72] DPU Exhibit 2.03; *Value Line* Reports dated May 27, 2022 filed as Confidential DEU Exhibit 2.19R.

The highlighted boxes in Figure 13 denote the *Value Line* growth rates from the May 27, 2022 company reports that do not match the values Mr. Coleman applied. Further, as noted earlier, *Value Line* did not report a five-year historical dividend growth rate for NiSource, Inc., so Mr. Coleman instead used a growth rate of 4.50 percent, which appears to be *Value Line's* projected dividend growth rate for NiSource, contradicting his criticism with projected growth rates.

Additionally, Mr. Coleman notes that *Value Line's* 0.50 percent dividend growth rates for Northwest Natural Holding Company were outliers, so he excluded that company's results from his DCF analysis. However, he does not exclude South Jersey Industries' DCF result from his DCF analysis using historical growth rates, even though it had 0.50 percent historical EPS growth rate.

Lastly, Mr. Coleman's projected EPS growth rate includes a negative growth rate from Zacks for Northwest Natural Holding Company. However, since he excludes Northwest Natural Holding Company from his ultimate analysis, this does not affect his proxy group mean DCF results.

Q. What would the results of Mr. Coleman's DCF analyses be if you corrected these calculations?

A. As shown in Exhibit DEU 2.20R and Figure 14 below, correcting Mr. Coleman's calculations increase his proxy group mean results from 8.25 percent and 9.40 percent, to 9.46 percent and 9.56 percent, respectively. As Figure 14 below also shows, Mr.

867 Coleman's corrected DCF results using only projected EPS growth rates (which is the
868 most appropriate approach), support my recommended ROE range.

869 **Figure 14: Mr. Coleman's Corrected DCF Results[73]**

DCF Range	DCF-based ROE Estimate
Constant Growth DCF (historical growth rates)	
7.00% - 14.02%	Mean: 9.46%
	Median: 8.16%
Constant Growth DCF (projected growth rates)	
8.88% - 10.26%	Mean: 9.56%
	Median: 9.62%
Constant Growth DCF (projected EPS growth rates)	
8.39% - 10.92%	Mean: 9.83%
	Median: 10.08%

870

871 **Q. What are Mr. Coleman's criticisms of your DCF analyses?**

872 A. Mr. Coleman lists the following concerns with my DCF analyses:

873 • My DCF analyses rely on projected growth rates;

874 • My DCF analyses do not follow the Commission's precedent of applying 75
875 percent weight to earnings growth and 25 percent weight to dividend growth; and

[73] DEU Exhibit 2.20R. The corrected mean and median historical growth DCF results excludes the results from Northwest Natural Holding Company and South Jersey Industries. The corrected mean and median projected growth DCF results excludes Northwest Natural Holding Company. The corrected DCF results using only projected EPS growth rates exclude the negative growth rate from Zacks for Northwest Natural Holding Company.

- The use of an adjusted dividend yield is inappropriate and increases the potential for "inaccuracies."[74]

I explained above why the use of historical growth rates is inappropriate in the DCF model and why analysts' earnings growth projections are the better predictor of stock prices contained in the DCF model. I respond to the remaining criticism below.

Q. What is your response to the position that you did not follow the Commission's growth rate weighting precedent?

A. I have two responses. First, the order cited by Mr. Coleman is from 2002, *i.e.,* twenty years ago. In preparing my Direct Testimony, I reviewed the two most recent Commission orders from litigated rate cases[75] and neither commented on the 75 percent/25 percent weighting convention.

Second, I respectfully disagree with the position that it is necessary and consistent with the theory underlying the DCF model to give weight to dividend growth rates in the long-term growth rate assumed in the DCF analysis. Mr. Coleman asserts that the weighting convention "considers the fact that while the model is theoretically about dividends and not earnings, it also reflects that dividend growth is related to earnings growth."[76] The Constant Growth DCF theory assumes that an

[74] Direct Testimony of Casey J. Coleman, at 23.
[75] Docket No. 20-035-04, Redacted Order (December 30, 2020); Docket No. 19-057-02, Report and Order (February 25, 2020).
[76] Direct Testimony of Casey J. Coleman, at 22.

893 investor buys a stock for an expected total return rate, which is derived from cash
894 flows received in the form of dividends (*i.e.*, the dividend yield) plus appreciation in
895 market price (*i.e.,* the expected growth rate). As explained earlier, stock price
896 appreciation is related to investors' expected growth in *earnings*, not *dividends*.
897 Therefore, I disagree with Mr. Coleman's position that the DCF model is
898 "theoretically about dividends and not earnings". Furthermore, expected growth in
899 dividends is already captured through the expected dividend yield. There is no need
900 to give additional weight to dividend growth in the long-term growth rate. Doing so
901 is inconsistent with the academic literature that demonstrates that stock price
902 appreciation is related to earnings growth, and not dividend growth. For these reasons,
903 Mr. Coleman's concerns are misplaced and my DCF analyses are consistent with the
904 academic and financial theory underlying the DCF model.

905 **Q. What is your response to Mr. Coleman's concern with your adjusted dividend**
906 **yield?**

907 A. Mr. Coleman's concern is perplexing because he also adjusts his dividend yield,
908 consistent with the DCF formula shown below in Equation [1]:

909 A. $$k = \frac{D_0\ (1+g)}{P} + g \quad [1]$$

910 Mr. Coleman applies this formula to convert his current dividend yield into an
911 expected dividend yield by multiplying his current dividend yield (D_0) by 1 + the
912 growth rate, g. However, I have adjusted my dividend yield by only half (50 percent)

of the growth rate, a more conservative adjustment (*i.e.*, 1 + 0.5*g*). It's unclear why Mr. Coleman objects to an adjustment that he also made. As explained in my Direct Testimony, my "half-growth rate" adjustment ensures that the expected dividend yield is, on average, representative of the coming 12-month period. Moreover, because it is a more conservative adjustment than the "full growth rate" adjustment Mr. Coleman applies, it mitigates Mr. Coleman's concern regarding "inaccurate" projected growth rates, notwithstanding the fact that his concerns regarding "accuracy" are misplaced and overstated in the first place.

C. Application of the CAPM Analysis

Q. Please summarize Mr. Coleman's CAPM analyses and results.

A. Mr. Coleman develops six CAPM estimates using three estimates of the Beta coefficient, two estimates of the risk-free rate, and two estimates of the Market Risk Premium, summarized in Figure 15 below. His average CAPM results range from 5.87 percent to 6.77 percent.

927 **Figure 15: Mr. Coleman's CAPM Results, As Filed[77]**

	Beta Coefficient	Risk-Free Rate	Market Risk Premium	CAPM ROE
Kroll Risk-Free Rate and Market Risk Premium				
Average *Value Line* Beta	0.872	3.50%	5.50%	8.30%
Average Zacks Beta	0.452	3.50%	5.50%	5.99%
Average Yahoo Finance Beta	0.457	3.50%	5.50%	6.01%
Average				**6.77%**
2.86% Risk-Free Rate and Damodaran Market Risk Premium				
Average *Value Line* Beta	0.872	2.86%	5.07%	7.28%
Average Zacks Beta	0.452	2.86%	5.07%	5.15%
Average Yahoo Finance Beta	0.457	2.86%	5.07%	5.18%
Average				**5.87%**

928 **Q. Please summarize the areas in which you disagree with Mr. Coleman's CAPM**
929 **analysis.**

930 A. As a principal matter, ROE estimates of 8.30 percent, or lower, are far below any
931 reasonable measure of the Company's Cost of Equity. As such, I agree with Mr.
932 Coleman's apparent decision to not give much weight on his CAPM results in
933 determining his 9.30 percent ROE recommendation.[78] That aside, my primary
934 disagreements are with certain of his Beta coefficients and his Market Risk Premium
935 estimates.

[77] DPU Exhibit 2.05.
[78] Direct Testimony of Casey J. Coleman, at 51.

Q. What are your concerns with Mr. Coleman's Beta coefficients?

A. Mr. Coleman applies Beta coefficient estimates from three sources for each of his proxy companies: (1) *Value Line*, (2) Zacks, and (3) Yahoo! Finance. I also use *Value Line* Beta coefficients, and therefore, do not take exception to them. I disagree, however, with the use of raw Beta coefficients, such as those from Zacks and Yahoo! Finance.

As explained in my Direct Testimony, *Value Line* adjusts the "raw" Beta coefficients to reflect the tendency of the Beta coefficient to regress toward the market mean of 1.00. Mr. Coleman observes that Zacks' and Yahoo! Finance's Beta coefficients are unadjusted (or raw) Betas coefficients.[79] Because Beta coefficients regress toward the market mean of 1.00, the use of raw Beta coefficients understates the Beta coefficients for companies that, like utilities, have Beta coefficients less than 1.00. Therefore, raw Beta coefficients are fundamentally not comparable to adjusted Beta coefficients like *Value Line's*. Developing an ROE estimate by averaging the three is an apples-to-oranges analysis and only serves to bias his ROE estimates downward. His selected Beta coefficients are a significant driver (along with his unduly low Market Risk Premium estimates) of his unreasonably low CAPM results.

Additionally, Mr. Coleman has not explained how Zacks and Yahoo! Finance calculate the Beta coefficients, including (1) the holding period over which they are

[79] Direct Testimony of Casey J. Coleman, at 35.

calculated (two years, five years, etc.), the assumed return period (weekly, monthly, etc.), or the market index applied as the benchmark (the New York Stock Exchange, the S&P 500, etc.). Without knowing these important assumptions, it is difficult to conclude whether these Beta coefficients are the result of reasonable assumptions and therefore will produce reasonable, meaningful results.

Lastly, in my experience, the vast majority of ROE witnesses representing a range of stakeholders in utility rate cases use adjusted Beta coefficients. I am not aware of any regulatory commission that has concluded that raw Beta coefficients are reasonable for the use of determining the appropriate ROE for regulated utilities. I recommend the Commission disregard Mr. Coleman's unadjusted Beta coefficients.

Q. Please now discuss your concerns with Mr. Coleman's Market Risk Premium estimates.

A. Mr. Coleman applies two estimates of the Market Risk Premium. The first is a 5.50 percent Market Risk Premium from Kroll (formerly Duff & Phelps). The second estimate of 5.07 percent is from NYU Stern School of Business professor Dr. Aswath Damodaran's Implied Equity Risk Premium model.[80] As discussed below, neither is a reasonable estimate of the Market Risk Premium for determining DEU's Cost of Equity.

[80] Direct Testimony of Casey J. Coleman, at 35-36.

Q. Turning first to Dr. Damodaran's Market Risk Premium estimates, what are your concerns with Mr. Coleman's reliance on that model?

A. Dr. Damodaran's Implied Equity Risk Premium model is fairly complex. In my opinion, any analyst who applies Dr. Damodaran's estimates should understand all the inputs and assumptions into his model to vet the reasonableness of those assumptions before relying substantially on the outputs of that model. As the Commission has noted, "[t]he quality of any financial model results depend primarily on the quality of inputs."[81] Mr. Coleman did not describe the inputs and assumptions contained within Dr. Damodaran's Market Risk Premium estimates he relied on; however, my simplified understanding of Dr. Damodaran's model is that it applies a multi-stage DCF analysis for the S&P 500 Index in which the first stage of growth relies on an estimate of analysts' earnings growth rates for the first five years, and a terminal stage of growth equal to the 10-year Treasury bond yield for years six through perpetuity. I also understand that Dr. Damodaran assumes the 10-year Treasury bond yield as the risk-free rate, which is also equal to the discount rate. The assumed terminal growth rate is an especially critical input because the large majority of the cash flows that are discounted depend substantially on it. In my opinion, Dr. Damodaran's assumptions are not reasonable or consistent with the Cost of Equity analyses that I see typically applied in utility regulatory proceedings. In this proceeding for example, the

[81] Docket No. 19-057-02, Report and Order, at 7 (February 20, 2020).

witnesses have assumed a risk-free rate using the 20- or 30-year Treasury bond yield, not the 10-year Treasury bond yield. As explained below, the Market Risk Premium and risk-free rate should be developed in relation to each other. Calculating a Market Risk Premium using one term of Treasury bond yields as the risk-free rate and combining it with a different term of Treasury bond yields is internally inconsistent. These concerns should not be construed to mean I am criticizing Dr. Damodaran's model as an academic exercise; rather I simply do not believe Dr. Damodaran's Implied Equity Risk Premium model is useful for utility ratemaking purposes given its underlying assumptions.

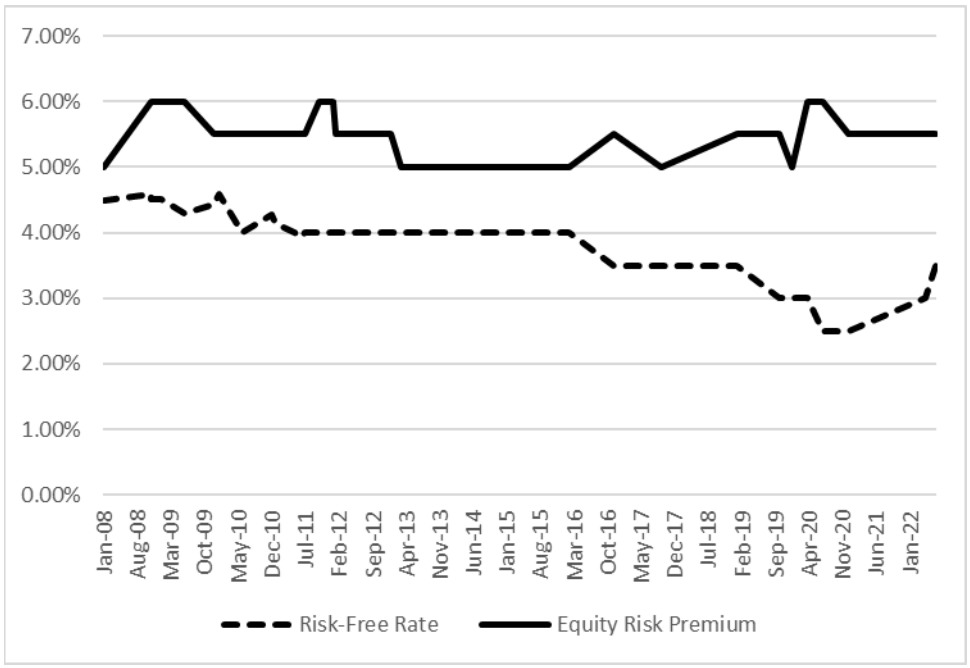
Q. What are your concerns with the use of Kroll's 5.50 percent Market Risk Premium?

A. My primary concern is that it is not clear that Kroll develops its Market Risk Premium in relation to its normalized risk-free rate. The Market Risk Premium is calculated as the difference between the expected market return and risk-free rate; therefore, it is a function of the expected market return and risk-free rate at a point in time. Consequently, the Market Risk Premium and risk-free rate are not independent of each other, they are interdependent. In fact, academic studies have shown that the two are inversely related.[82] As the risk-free rate decreases, the Market Risk Premium increases and vice versa.

[82] *See* Direct Testimony of Jennifer E. Nelson, at 40.

However, as shown in Figure 16 below, there is no clear relationship between Kroll's recommended Equity Risk Premium and risk-free rate. Whereas academic studies indicate that the two lines should move in opposite directions, Figure 16 shows they do not.

Figure 16: Kroll Recommended Equity Risk Premium and Risk-Free Rate (2008-2022)[83]



The conclusion that there is no clear relationship between the two variables is supported by statistical analysis. To assess whether there is a relationship, I ran a linear regression in which Kroll's Equity Risk Premium was the dependent variable and the risk-free rate was the independent variable. The R-square was 0.09 percent,

[83] Source: Kroll Cost of Capital Navigator.

which indicates that Kroll's risk-free rate explains only 0.09 percent of the variation in the Equity Risk Premium. This runs counter to the fundamental fact that the Market Risk Premium is a function of the risk-free rate, as noted earlier. Moreover, the slope coefficient is positive which signifies that the two are positively related (*i.e.*, move in the same direction) and not inversely related (*i.e.*, move in opposite directions), again contrary to academic literature. However, the slope coefficient was not statistically significant, which means we can't have any confidence in the statistical results. This is not to suggest that Kroll is not a valid or credible source of data; simply, the usefulness of their Equity Risk Premium recommendation is questionable given it does not comport with academic and financial theory.

Q. Mr. Coleman also refers to Market Risk Premium estimates from financial textbooks in the range of three to six percent.[84] What is your response?

A. Here again, without knowing the risk-free rates and market return data on which those Market Risk Premia are based (*i.e.*, the historical data period used and how they were calculated), it is difficult to determine the usefulness of those estimates. For example, Mr. Coleman cites to an estimated Market Risk Premium of 5.3 percent to 5.7 percent since 2011 reported by Statista. However, the arithmetic average annual Market Risk

[84] Direct Testimony of Casey J. Coleman, at 39.

Premium reported by Kroll between 2011 and 2021 was 13.18 percent, well above Statista's estimates and the Market Risk Premia applied in my CAPM analyses.[85]

To the extent that these estimates are based on geometric (or compound) average returns and not arithmetic average returns, their estimates are of little value in estimating forward-looking investor return requirements. That is because geometric returns are backward looking and equate a beginning value to an ending value. Therefore, they are most commonly used to compare the historical (*i.e.*, past) return performance of individual securities or portfolios over a period of time. They are not, however, to be used to estimate an expected return in the *future*. Because future returns are uncertain and volatile, the arithmetic average is an unbiased estimate of a portfolio's expected future return and, therefore, takes into account uncertainty or volatility. Many financial textbooks and investor publications advise against the use of geometric averages as a basis for a forward-looking estimate of expected returns in the CAPM.[86] Therefore, without knowing the basis of the market risk premia estimates Mr. Coleman cites, it is difficult to determine their usefulness.

[85] Source: Kroll, 2022 SBBI Yearbook, Appendix A-1 and A-7.
[86] *See, e.g.,* Roger A. Morin, Ph.D., New Regulatory Finance, at 133-138 (2006); Kroll, 2022 SBBI Yearbook, at 201.

Q. Mr. Coleman is concerned with the accuracy of the inputs applied to the ROE analytical models. Has Mr. Coleman considered the accuracy of his Market Risk Premia estimates?

A. It does not appear so. Mr. Coleman repeatedly expresses concern about the "accuracy" of my model inputs; however, he does not consider whether his Market Risk Premia estimates have been accurate. As shown in Figure 17 below, Dr. Damodaran's annual implied equity risk premium has been far removed from actual observed market risk premia over the last twelve years.

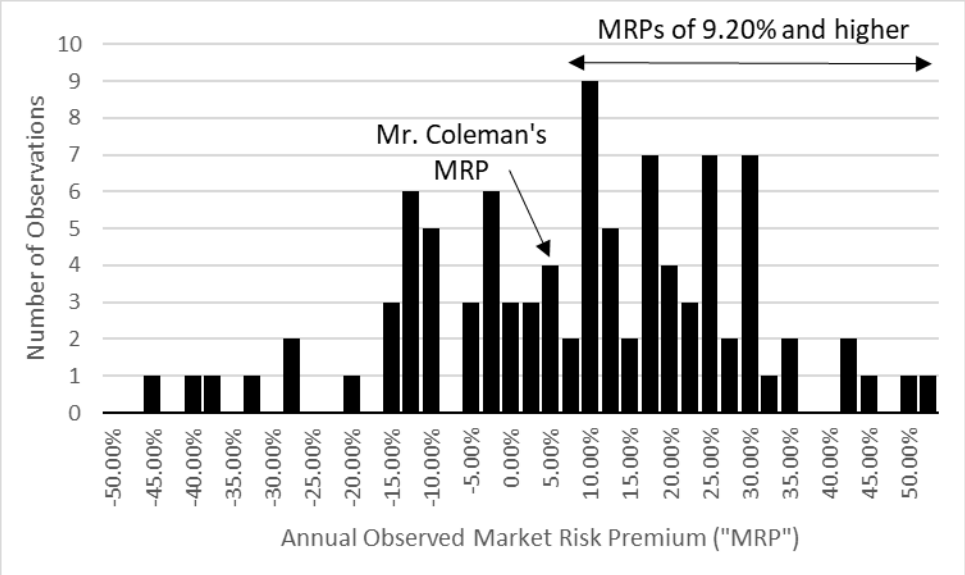
Figure 17: Dr. Damodaran's Annual Implied Equity Risk Premium vs. Observed Market Risk Premium[87]

Year	Dr. Damodaran's Implied Equity Risk Premium	Actual Market Risk Premium
2010	5.20%	10.81%
2011	6.01%	-1.71%
2012	5.78%	13.54%
2013	4.96%	29.51%
2014	5.78%	10.28%
2015	6.12%	-1.09%
2016	5.69%	9.66%
2017	5.08%	19.16%
2018	5.96%	-7.20%
2019	5.20%	28.94%
2020	4.72%	16.87%
2021	4.24%	26.98%
Average	**5.40%**	**12.98%**

[87]Sources: https://pages.stern.nyu.edu/~adamodar/New_Home_Page/home.htm; Kroll, 2022 SBBI Yearbook, Appendix A-1 and A-7.

To assess the frequency with which my and Mr. Coleman's Market Risk Premium estimates have occurred, I subtracted the annual income return on long-term government bonds (*i.e.*, the risk-free rate) from the annual total return on large capital stocks for the last 96 years (1926-2021) reported by Kroll (the source of one of Mr. Coleman's Market Risk Premium estimates) to calculate the annual observed Market Risk Premium. I then developed a histogram to count the number of years the annual Market Risk Premium fell within specific ranges. As shown in Figure 18 below, the Market Risk Premia in the range of Mr. Coleman's estimates have occurred very infrequently over the last 96 years, whereas Market Risk Premia of 9.20 percent (the lowest of my estimates) and higher have occurred in 48 of 96 years (*i.e.,* half the time). In other words, my Market Risk Premia are highly consistent with historical observations.

Figure 18: Frequency Distribution of Observed Market Risk Premium (1926-2021)[88]



No one can predict with accuracy what the long-term Market Risk Premia will be in the future; however, looking to the last nearly 100 years, we can see that that Market Risk Premia in the range of my estimates (and higher) are common occurrences, and therefore are not unreasonable. By contrast, Mr. Coleman has provided no evidence with respect to the frequency and consistency of his estimates with historical observed Market Risk Premia.

Q. Do you have any other concerns with Mr. Coleman's CAPM analysis?

A. Yes, I do. In his CAPM analysis using Dr. Damodaran's Market Risk Premium estimate of 5.07 percent, he applies a risk-free rate of 2.86 percent to develop CAPM

[88] Source: Kroll, 2022 SBBI Yearbook, Appendix A-1, A-7. *See* Exhibit DEU 2.21R.

estimates ranging from 5.15 percent to 7.28 percent. Nowhere in his testimony does Mr. Coleman explain the source of his 2.86 percent risk-free rate and how it was developed. Without any support for this risk-free rate, there is no evidence to support its reasonableness. Yields on long-term Treasury bonds have been consistently above 2.86 percent for some time now and demonstrate Mr. Coleman's estimate of the risk-free rate is unreasonable and out of date (*see e.g.*, Figure 5 above).

Q. What are Mr. Coleman's concerns with your CAPM analyses?

A. Mr. Coleman disagrees with my Market Risk Premium estimates and my use of a projected risk-free rate.

Q. Turning first to the use of a projected risk-free rate, what is your response to Mr. Coleman's criticism of projected risk-free rates?

A. First, projected interest rates more closely align with the Company's future test year than do historical interest rates. For that reason, it is reasonable to consider projected interest rates – and other forecasted data – in the Cost of Equity models.

Additionally, as explained earlier in my Rebuttal Testimony, Mr. Coleman's objection to projected data – including projected risk-free rates – because they are "inaccurate" is misplaced and overstated. Although he attempts to suggest otherwise, Mr. Coleman's "normalized" Risk-Free Rate of 3.50 percent from Kroll is simply another forecast. Moreover, as Mr. Coleman notes, Kroll advises using the spot yield on the 20-year Treasury bond yield "[i]f the prevailing yield as of the valuation date

is higher than our recommended U.S. Normalized risk-free rate of 3.5%".[89] As of August 31, 2022 the spot yield on the 20-year Treasury bond yield was 3.53 percent, rising to 3.79 percent on September 16.[90] This is consistent with (and slightly above) my 3.66 percent projected risk-free rate updated in DEU Exhibit 2.15R. Therefore Mr. Coleman's objection is without merit. Nonetheless, I have presented my CAPM analyses using both a historical 30-day average and a projected risk-free rate.

Q. Mr. Coleman notes that the Federal Reserve did not accurately predict in 2020 that it would raise rates in 2022 as support for his position that projected interest rates are inaccurate.[91] What is your response?

A. Mr. Coleman's position is contradictory to other positions taken in his testimony. On the one hand, he correctly observes rising interest rates would "impact a regulated utility in the cost of debt it must pay for capital additions" and "filter through the various financial models the DPU has used to determine the appropriate cost of capital for DEU."[92] However, when it comes to actually reflecting those higher interest rates in the models to estimate DEU's Cost of Equity, he objects to using projections of rising interest rates and instead recommends using a "normalized" risk-free rate or historical rates.[93]

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[89] Direct Testimony of Casey J. Coleman, at 17.
[90] Federal Reserve Bank of St. Louis, FRED Database https://fred.stlouisfed.org/series/DGS20
[91] Direct Testimony of Casey J. Coleman, at 38.
[92] Direct Testimony of Casey J. Coleman, at 20.
[93] Direct Testimony of Casey J. Coleman, at 38.

Moreover, it's odd that Mr. Coleman uses the example of the Federal Reserve in 2020 not expecting the highest inflation in 40 years a year and a half to two years in the future, requiring them to raise interest rates at the fastest pace since 2006 to support his position as to why the use of projected interest rates are inappropriate. As noted earlier, as more historical data becomes available, forecasts are adjusted accordingly. Interest rates have been on the rise since mid-2020 and the Commission's order in the Company's last rate case, and interest rate forecasts have risen correspondingly[94] and are expected to remain higher in the future as the Federal Reserve has clearly expressed its intention to fight high inflation.

To ignore evidence of higher interest rates and inflation denies DEU a fair opportunity to earn its Cost of Capital to the detriment of customers. As Mr. Coleman correctly observes, if the Company has difficulty raising capital to finance its capital additions, it could jeopardize those capital expenditures needed to serve customers.[95] As concluded in the *Hope* and *Bluefield* decisions, a just and reasonable return is one that enables a utility to attract capital. If the Commission were to demonstrate a consistent pattern of authorizing returns below the Company's Cost of Equity, it would violate the capital attraction standard and increase the Company's risk profile, resulting in higher costs of both debt and equity to customers. By recommending the Commission ignore investors' expectations – upon which the forward-looking Cost of

[94] *See e.g.*, Mr. Walters' Table CCW-4 and Table CCW-5 at pages 17-18 of Mr. Walters' Direct Testimony.
[95] Direct Testimony of Casey J. Coleman, at 47.

Equity is fundamentally based – Mr. Coleman's recommended ROE would likely result in higher costs of debt and equity.

Q. Please respond to Mr. Coleman's criticism of your Market Risk Premium.

A. Mr. Coleman's understanding of my Market Risk Premium calculation is inaccurate and needs to be corrected. At pages 36-37 of his direct testimony, Mr. Coleman states that I use the expected market return estimates instead of the Market Risk Premium in the CAPM analyses. He is wrong. My CAPM estimates are calculated using the correct formula, which is noted in Footnote [4] of DEU Exhibit 2.05:

Risk-Free Rate + Beta (Expected Market Return – Risk-Free Rate) [2]

Further, Figure 9 of my Direct Testimony clearly presents my Market Risk Premium Estimates, which range from 9.20 percent to 12.85 percent. I did not calculate my CAPM estimates using only the total market return estimates; therefore, his criticism is without merit and should be rejected.

Q. Please summarize your expected market return estimates for the Commission.

A. As explained in my Direct Testimony, I developed two estimates of the expected market return. The first applies the Constant Growth DCF model to the companies in the S&P 500 Index. As is my usual practice, I developed two estimates using earnings growth rates from Bloomberg and *Value Line*. In my first CAPM analysis, I relied on the Bloomberg-derived expected market return estimate because it was more conservative than the *Value Line*-derived estimate. In my second market return

estimate, I applied the long-term historical arithmetic average total return on the S&P 500 between 1926 and 2021 of 12.33 percent. As I explained in my Direct Testimony, I recognized that the DCF-based estimates from Bloomberg and *Value Line* were above the long-term average return.[96] Therefore, a reasonable assumption may be that, over the long-term, the market return will revert to its long-term average in the future. As explained earlier and in my Direct Testimony, the use of historical data in a forward-looking Cost of Equity determination is simply another forecast because it assumes the historical data will continue in the future.

Q. What is your response to Mr. Coleman's position that your Market Risk Premium "does not appear to use a generally accepted methodology"[97]?

A. Mr. Coleman is incorrect. With respect to my DCF-based approaches to estimating the expected market return, the use of the DCF model to develop the Cost of Equity is a generally accepted methodology and Mr. Coleman himself states he gave the most weight to the DCF model.[98] It is unclear why the DCF model as applied to utility companies is appropriate but not as applied to the broad market. Industry and financial textbooks also present the use of the DCF model as a reasonable method to developing the expected market return.[99] A peer reviewed study by Harris and Marston published in the journal Financial Management cited in my Direct Testimony supports the use

[96] Direct Testimony of Jennifer E. Nelson at 32.
[97] Direct Testimony of Casey J. Coleman, at 23.
[98] Direct Testimony of Casey J. Coleman, at 52.
[99] *See, e.g.*, Roger A. Morin, Ph.D., New Regulatory Finance, at 159-160 (2006).

of the DCF model in developing the Market Risk Premium.[100] Additionally, as explained earlier, Dr. Damodaran applies a variant of the DCF model to estimate his Implied Equity Risk Premium, which Mr. Coleman appears to believe is a reasonable approach.

With respect to the use of the long-term historical average return, given that Mr. Coleman appears overly concerned about the accuracy of projected data, it is unclear why he objects to my approach. Nonetheless, my approach is consistent with guidance from financial experts and the investment community. Dr. Morin, an expert in regulatory finance, observes the following regarding the use of historical market return estimates in his textbook (emphasis added):

> Expected returns are not directly observable. As a result, **realized returns are frequently used as a proxy for expected returns**. This is based on the assumption that arbitrage will result in deviations between expected returns and realized returns ("surprises") that are unpredictable and are zero-mean, that is, will cancel out, in which case realized returns provide an unbiased estimate of what returns had been expected for that period.
>
> ***
>
> To estimate the [Market Risk Premium], **one should rely on returns realized over long time periods** rather than returns over more recent time periods because realized returns can be substantially different prospective returns anticipated by investors, especially when measured over short time periods. But **over very long periods, investor expectations coincide with realizations**; otherwise, investors would never invest any money. **A risk premium study should consider the longest possible period for which data are available**…Moreover the

[100] Harris and Marston, Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts, Financial Management (Summer 1992).

> use of the entire study period in estimating the appropriate market risk premium minimizes subjective judgment and encompasses many diverse regimes of inflation, interest rate cycles, and economic cycles.[101]

To summarize, the following conclusions can be made from Dr. Morin's discussion on the use of historical realized returns to develop the Market Risk Premium:

- Realized (*i.e.*, historical) returns may be used as a proxy for expected returns;
- When using historical returns to estimate the Market Risk Premium, one should rely on data over long time periods; and
- A risk premium study that considers the longest possible study period for which data is available minimizes subjective judgment and encompasses many diverse periods of inflation, interest rate cycles, and economic cycles.

Additionally, Dr. Morin's guidance is consistent with Kroll's guidance:

> The estimate of the equity risk premium depends on the length of the data series studied. A proper estimate of the equity risk premium requires a data series long enough to give a reliable average without being unduly influenced by very good and very poor short-term returns. When calculated using a long data series, the historical equity risk premium is relatively stable. Furthermore, because an average of the realized equity risk premium is quite volatile when calculated using a short history, using a long series makes it less likely that the analyst can justify any number he or she wants.[102]

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[101] Roger A. Morin, Ph.D., New Regulatory Finance, at 156-157 (2006).
[102] Duff & Phelps, 2022 SBBI Yearbook, at 201-202.

Consequently, my Market Risk Premium estimates based on the long-term average historical market return over the last 96 years (encompassing the entire study period from Kroll, an established and well-known source that Mr. Coleman also relies on) is consistent with investor practice and guidance. It minimizes subjective judgment, one of Mr. Coleman's apparent concerns.

In the end, I have presented two CAPM approaches, one based on forward-looking data, and another on historical data to provide the Commission with a more robust view of the range of CAPM-based ROE estimates, which is a reasonable and prudent approach backed by investor practice.

Q. What is your response to Mr. Coleman's position that your Market Risk Premia "over-estimate"[103] the Market Risk Premium?

A. I disagree. First, Mr. Coleman's criticism is based on his mistaken position that I used the total market return estimates as my Market Risk Premia.[104] I did not. Nonetheless, for the reasons explained above, Mr. Coleman's Market Risk Premium estimates are unduly low and based on unreasonable assumptions that are inappropriate to the Cost of Equity estimation process as applied for utility ratemaking purposes. Further, as discussed earlier and illustrated in Figure 18 above, his estimates are far removed from

[103] Direct Testimony of Casey J. Coleman, at 23.
[104] Direct Testimony of Casey J. Coleman, at 36-37.

actual, realized Market Risk Premia observed over the last 96 years, whereas my estimates are highly consistent with historical observations.

Q. What is your response to Mr. Coleman's criticisms of your Empirical CAPM analysis?

A. Mr. Coleman asserts that my ECAPM results are flawed because they are based on the issues he mistakenly perceives in my CAPM analysis.[105] As explained above, Mr. Coleman's understanding of my Market Risk Premium and my CAPM analysis are the result of his inaccurate misunderstanding of my calculations, which I have clarified and corrected. Therefore, his criticism is the fault of his mistaken understanding and should be dismissed.

Q. What corrections do you suggest for Mr. Coleman's CAPM analysis?

A. First, I recommend the Commission only rely on his *Value Line* Beta coefficients. Second, although I do not agree that it is necessary to use a "normalized" risk-free rate, because his risk-free rate is comparable to my risk-free rates, I do not object to his 3.50 percent risk-free rate.[106] His 2.86 percent risk-free rate should be rejected, however, as he provides no support or evidence for this value.

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[105] Direct Testimony of Casey J. Coleman, at 43.

[106] As noted earlier, Kroll's 3.50 percent "normalized" risk-free rate should be considered a conservative estimate because, as Mr. Coleman notes, Kroll's guidance is to use the spot 20-year Treasury bond yield when it is above 3.50 percent, which it currently is.

Lastly, because Mr. Coleman appears concerned with the use of forecasted data (which I disagree is a concern), I have adjusted Mr. Coleman's Market Risk Premium to use the long-term historical average market return, which as noted above is consistent with investor and financial practice and minimizes subjective judgment. As a second and more conservative approach, I have also considered the use of the long-term arithmetic average Market Risk Premium from Kroll (7.46 percent), although I have reservations with its use as discussed in my response to Mr. Lawton. That reservation notwithstanding, it produces a conservative CAPM ROE estimate of 10.01 percent when combined with his *Value Line* Beta coefficients and 3.50 percent risk-free rate. Figure 19: Mr. Coleman's Corrected CAPM Results below summarizes my corrections to Mr. Coleman's CAPM analyses.

Figure 19: Mr. Coleman's Corrected CAPM Results

	***Value Line* Beta Coefficient**	**Risk-Free Rate**	**Market Risk Premium**	**CAPM ROE**
Long-term historical average market return of 12.33% (1926-2021)	0.872	3.50%	8.83%	11.20%
Long-term historical average Market Risk Premium (1926-2021)	0.872	3.50%	7.46%	10.01%
Average				**10.60%**

D. Application of the Risk Premium Analysis

Q. Please summarize Mr. Coleman's Risk Premium analysis and results.

A. Mr. Coleman developed Risk Premium-based ROE estimates of 7.98 percent and 7.55 percent. First, he develops two estimates of the market return: (1) a 9.00 percent market return estimate that is the sum of Kroll's risk-free rate (3.50 percent) and Market Risk Premium estimate (5.50 percent); and (2) an 8.57 percent market return estimate based on the sum of Kroll's 3.50 percent risk-free rate and the 5.07 percent Market Risk Premium estimate from Dr. Damodaran. From those market return estimates he subtracts Moody's Baa Corporate Bond yield of 5.27 percent to develop risk premium estimates of 3.73 percent and 3.30 percent. To those risk premium estimates he adds DEU's 4.25 percent cost of debt to develop risk premium estimates of 7.98 percent and 7.55 percent.

Q. Do you have any concerns with Mr. Coleman's Risk Premium analysis?

A. Yes, I do. My primary concern is the mismatch in bond securities applied in his analysis. Mr. Coleman states that he used Moody's Baa Corporate Bond yield because DEU's parent Dominion Energy, Inc. is rated BBB+ by S&P and Baa1 by Moody's. However, DEU is rated A3 by Moody's and A- by Fitch.[107] Because Mr. Coleman applied DEU's cost of debt to the risk premium, he should use the security with the same rating level to calculate his risk premium, that is Moody's A-rated bond yield.

[107] Mr. Walters notes at page 23 of his direct testimony that DEU's standalone credit profile from S&P is "a-".

By using a bond yield tied to DEU's parent credit rating, his analysis is internally inconsistent, which results in a risk premium that is biased downward.

Q. What is your response to Mr. Coleman's position that the Risk Premium analysis should be given the least weight of his models?[108]

A. I agree that Mr. Coleman's Risk Premium results as filed should be given no weight as they are far too low to be a reasonable estimate of the Company's Cost of Equity. However, his position that the Risk Premium model is less reliable or credible because "with so many variables and assumptions, it is difficult to feel entirely confident that the model is providing accurate results"[109] makes little sense. Other than the bond yields, his analysis uses the same variables as his CAPM analysis. Moody's bond yields are market-based data that are easily observable and verifiable, and DEU's debt cost can be measured with reasonable accuracy, so there is sufficient confidence in the bond yields that he used. If Mr. Coleman believes that his risk-free rate and Market Risk Premium estimates used to develop his total market return estimates are unreliable and not credible, his criticism of the Risk Premium model contradicts the use of those inputs in his CAPM analysis. Either way, neither of his CAPM and Risk Premium estimates are credible estimates of the Company's Cost of Equity.

[108] Direct Testimony of Casey J. Coleman, at 51.
[109] Direct Testimony of Casey J. Coleman, at 52.

Q. What is your response to Mr. Coleman's criticism of your Bond Yield Plus Risk Premium analysis?[110]

A. Mr. Coleman disagrees with the use of projected Treasury bond yields in the Bond Yield Plus Risk Premium analysis. For the reasons explained earlier, Mr. Coleman's objections to projected data and Treasury bond yields are misplaced. Further, my projected bond yield is highly consistent with his "normalized" risk-free rate. Therefore, my Bond Yield Plus Risk Premium results are reasonable.

Q. What corrections do you suggest for Mr. Coleman's Risk Premium analysis?

A. First, to correct the internal inconsistency with the bond yields Mr. Coleman used, I applied the 30-day average yield on Moody's A-rated Utility Bond yields as of August 31, 2022 of 4.74 percent, instead of his Baa-rated corporate bond yield. Using his 9.00 percent market return[111] increases his Risk-premium ROE result from 7.98 percent to 8.51 percent. Because his 9.00 percent market return is well below the long-term average historical market return, I also developed a second analysis using the long-term average historical market return of 12.33 percent, which produced an ROE estimate of 11.84 percent. Averaging these two results together produces a mean Risk Premium ROE estimate of 10.17 percent shown in Figure 20 below.

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[110] Direct Testimony of Casey J. Coleman, at 51.

[111] Please note that my use of Mr. Coleman's 9.00 percent market return estimate from Kroll does not indicate my acceptance of that estimate. Nonetheless, I have used it to illustrate the effect of his Risk Premium result had he correctly used an A-rated utility bond yield.

Figure 20: Mr. Coleman's Corrected Risk Premium ROE Results

	Market Return	A-rated Utility Bond Yield	Risk Premium	DEU Cost of Debt	CAPM ROE
Kroll Market Return	9.00%	4.74%	4.26%	4.25%	8.51%
Long-term historical average market return (1926-2021)	12.33%	4.74%	7.59%	4.25%	11.84%
Average	**10.67%**	**4.74%**	**5.92%**	**4.25%**	**10.17%**

E. Summary of Mr. Coleman's Corrected ROE Results

Q. Please summarize Mr. Coleman's corrected ROE analyses with the adjustments you recommend.

A. As shown in Figure 21 below, reasonable corrections to Mr. Coleman's ROE analyses produce mean ROE results in the range of 9.46 percent to 10.60 percent, which largely overlaps my recommended range of 9.60 percent to 10.75 percent. The average of the corrected results is 9.93 percent, which is above the median of 9.83 percent, but below the midpoint of 10.03 percent.

Figure 21: Summary of Mr. Coleman's Corrected ROE Results

ROE Methodology	Mean ROE Estimate
Constant Growth DCF (historical growth)	9.46%
Constant Growth DCF (projected growth)	9.56%
Constant Growth DCF (projected EPS growth rates)	9.83%
CAPM	10.60%
Risk Premium	10.17%
Average of Mean ROE Estimates	**9.93%**
Median of Mean ROE Estimates	**9.83%**
Midpoint of Mean ROE Estimates	**10.03%**

F. Risk Factors and Other Considerations

Q. Mr. Coleman asserts that to accept your ROE recommendation "one must conclude that DEU is a higher risk than the other subsidiaries of Dominion Energy and riskier than a comparable group of regulated natural gas utilities."[112] What is your response to Mr. Coleman on that point?

A. Mr. Coleman is comparing my recommendation that reflects the current higher interest rate and inflationary capital market environment to ROEs authorized under an entirely different market environment. As explained earlier, while authorized ROEs can provide a broad benchmark of returns available to other utilities, they must be considered within the context of the market environments in which they were authorized. Mr. Coleman correctly observes that a change in the ROE indicates that

[112] Direct Testimony of Casey J. Coleman, at 12.

either (1) market conditions have significantly changed or (2) DEU's risks have increased since the last general rate case.[113] My ROE recommendation is supported by my model results, which reflect a market environment of increasing capital costs.

Although Mr. Coleman agrees that current economic conditions will have an impact on the entire market, he dismisses much of the effects concluding that they will have little effect on DEU.[114] As demonstrated in Section III above, inflation and capital costs have continued to rise since the filing of my Direct Testimony, and volatility has remained elevated compared to levels experienced during the Company's last rate case. Even if DEU's relative business risk has not changed since its last rate case, market conditions have significantly changed, increasing the cost of capital. That point is not in dispute.

Q. Mr. Coleman discusses the Company's ratemaking mechanisms and the regulatory environment in which DEU operates concluding that those factors do "not merit a risk premium to the ROE of DEU".[115] Do you agree?

A. I agree with Mr. Coleman's observation that the Company's ratemaking mechanisms are similar to those available to its peers and therefore it has comparable regulatory risk when concluding that "this list of comparable regulatory mechanisms

[113] Direct Testimony of Casey J. Coleman, at 10.
[114] Direct Testimony of Casey J. Coleman, at 15-20.
[115] Direct Testimony of Casey J. Coleman, at 50.

demonstrates that many of these recovery mechanisms are becoming the industry standard."[116]

When describing the Utah regulatory environment, Mr. Coleman observes that RRA ranks Utah as "Average / 2."[117] However, he omits the fact that shortly after the Commission's decision in DEU's last rate case, RRA reduced Utah's ranking from Average / 1 to Average / 2. In making that change, RRA noted:

> "[I]n the only recent ROE determination issued by the PSC, the commission granted a below industry average equity return to Questar Gas in a fully litigated base rate proceeding. The PSC also chose to phase-in a relatively modest rate increase in that rate case. On a more constructive note, the use of test years in base rate proceedings that contain projected data is commonplace… Based on the foregoing information, particularly the recent rate decision for Questar Gas, RRA is lowering the rating of Utah regulation to Average/2 from Average/1."[118]

While RRA considers the Utah regulatory environment to be "a relatively balanced regulatory climate",[119] it is clear that the Commission's decisions, including its decision in the Company's last rate case, directly affect the perceptions of the investment community. While I agree with the conclusion that DEU's regulatory risk is comparable to its peers, it is critical that the supportiveness of the Utah regulatory environment be maintained, and any further degradation be avoided. The authorized ROE and capital structure are important signals regarding the supportiveness of the

[116] Direct Testimony of Casey J. Coleman, at 49.
[117] Direct Testimony of Casey J. Coleman, at 49.
[118] RRA Commission Profiles updated March 25, 2020.
[119] RRA Commission Profiles updated March 25, 2020.

regulatory environment. As explained in my Direct Testimony and as Moody's has noted, the Company's capital expenditure plan is significant, and DEU is more reliant on external capital than its peers. As such the Company will require efficient access to the capital markets as it executes its capital spending program. A constructive and supportive outcome in this case will directly affect the Company's ability to access the capital it needs to provide safe and reliable service on reasonable terms to the benefit of customers.

VI. RESPONSE TO OCS WITNESS MR. LAWTON

Q. Please summarize Mr. Lawton's recommendation regarding the Company's Cost of Equity.

A. Mr. Lawton recommends an ROE of 9.20 percent, which is based on the average of the midpoints of his two DCF analyses (8.99 percent and 9.46 percent).[120] Mr. Lawton also performs a CAPM, ECAPM, and Risk Premium analyses. However, in relying exclusively on his DCF results, he gives no weight to the results of those models. Figure 22: Mr. Lawton's ROE Analytical Results, As Filed below summarizes the results of Mr. Lawton's ROE analytical models, which he has applied to the companies in my proxy group.

[120] Direct Testimony of Daniel J. Lawton, at 53.

Figure 22: Mr. Lawton's ROE Analytical Results, As Filed[121]

Model	Range	Midpoint
Constant Growth DCF	8.73% - 9.24%	8.99%
Two-Stage DCF	9.40% - 9.51%	9.46%
CAPM	8.18% - 8.39%	8.29%
ECAPM	8.50% - 8.65%	8.58%
Equity Bond Risk Premium	9.70% - 9.73%	9.72%
Average	8.90% - 9.10%	9.01%

A. Application of the Discounted Cash Flow Analysis

Q. Please summarize Mr. Lawton's DCF analyses and results.

A. Mr. Lawton performs a Constant Growth DCF analysis and a Two-Stage DCF analysis. In his Constant Growth DCF analysis, he calculates the dividend yield of each proxy company using the annualized dividend as of August 1, 2022 and the average stock price for the months of May, June, and July 2022. For the growth rate component, Mr. Lawton relies on the average of (1) the average projected EPS growth rate from *Value Line*, Zacks, and Yahoo! Finance; and (2) his estimate of "sustainable growth" for each proxy company.

Mr. Lawton's Two-Stage DCF analysis calculate annual cash flows over two stages. He uses the growth in annual dividends per share ("DPS") using DPS estimates from *Value Line* for the first stage (years one through five). The second stage (years six through 150) uses the average projected EPS growth rate from *Value Line*, Zacks,

[121] Direct Testimony of Daniel J. Lawton, at 53.

and Yahoo! Finance. The estimated ROE for each proxy company is then calculated by using the Internal Rate of Return ("IRR") formula that discounts back all future cash flows.

Q. Are there areas with which you agree with Mr. Lawton's DCF analyses?

A. Yes. Although Mr. Lawton reviews historical growth rates from *Value Line*, I agree that it is inappropriate to rely on historical growth rates in the DCF analysis.[122]

Q. What are your primary areas of concern with Mr. Lawton's DCF analyses?

A. I have two areas of concern. First, I disagree with his use of sustainable growth rates. Second, his Two-Stage DCF results are biased downward by calculating cash flows received at the end of the year rather than the middle of the year.

Q. Why do you disagree with the use of sustainable growth rates in the DCF model?

A. As explained in my response to Mr. Coleman above, analyst EPS growth rates are the most appropriate estimate of long-term growth in the DCF model. That conclusion is supported by academic studies that have found that analysts' projected EPS growth rates better predict stock returns than do other measures of growth, including sustainable growth rates.

[122] Direct Testimony of Daniel J. Lawton, at 45.

Further, the underlying premise of the "retention growth" calculation is that future earnings increase as the retention ratio[123] (*i.e.*, the portion of earnings not paid out in dividends) increases. However, that premise has been proven wrong. A 2003 study by Arnott and Asness found that, over the course of 130 years of data, future earnings growth is associated with high, rather than low, dividend payout ratios. Since the payout ratio is the inverse of the retention ratio, Arnot and Asness's study indicates that future earnings growth is negatively related to the retention ratio. In other words, there is a *negative*, not a *positive* relationship between earnings growth rates and the retention ratio. Because the underlying premise of the sustainable growth model does not hold, sustainable growth rates should not be relied on in the DCF model.

Q. Please explain your concern with Mr. Lawton's Two-Stage DCF analysis.

A. Mr. Lawton's Two-Stage DCF results are biased downward because they assume dividends are received at year end. Fundamental to the DCF method, is the principle that cash flow has time value.[124] Because utility dividends are paid on a quarterly basis, assuming all dividends are received at year-end (rather than over the course of the year) defers the timing of those cash flows and reduces the DCF result. A

[123] The retention ratio (b) = (1- the dividend payout ratio).

[124] For example, The Chartered Financial Analyst ("CFA") Institute's program curriculum notes: "Money has time value in that individuals value a given amount of money more highly the earlier it is received. Therefore, a smaller amount of money now may be equivalent in value to a larger amount received at a future date. The time value of money as a topic of investment mathematics deals with equivalence relationships between cash flows with different dates. Mastery of time value of money concepts and techniques is essential for investment analysts." 2011 CFA Curriculum Level I, Volume 1, at 255-256.

reasonable method of reflecting the timing of quarterly dividend payments is to assume cash flows are received in the middle of each year (*i.e.*, the "mid-year convention"). This is consistent with the half-year dividend growth rate adjustment that Mr. Lawton and I use in our Constant Growth DCF analyses. As Duff & Phelps notes:

> Common practice in business valuation is to assume that the net cash flows are received on average continuously throughout the year (approximately equivalent to receiving the net cash flows in the middle of the year), in which case the present value factor is generally based on a mid-year convention (e.g., (1+k)0.5).[125]

DEU Exhibit 2.22R illustrates the effect of assuming cash flows are paid at year end. Using Mr. Lawton's Exhibit OCS 3.9, I adjusted the dividend timing to reflect the mid-year convention. This small change increases Mr. Lawton's mean Two-Stage DCF results by approximately 16 basis points, from a mean and median of 9.40 percent and 9.51 percent, respectively, to 9.55 percent and 9.68 percent, respectively. Because Mr. Lawton assumes this adjustment in his Constant Growth DCF analysis (by adjusting the current dividend yield by half the growth rate), he should apply the same adjustment in his Two-Stage DCF analysis for consistency.

[125] Duff & Phelps, 2016 Valuation Handbook, Guide to Cost of Capital, at 1-4.

Q. What would Mr. Lawton's DCF results be if his analyses were corrected for the problems you observe?

A. As shown in Figure 23 below, properly excluding sustainable growth rates from Mr. Lawton's Constant Growth DCF analysis and reflecting the mid-year convention in his Two-Stage DCF analysis increases the range of his DCF results from 8.73 percent to 9.51 percent to 9.40 percent to 9.68 percent. The midpoints of his DCF analyses increase to 9.46 percent and 9.62 percent. The low end of my recommended ROE range (9.60 percent) falls within the range of the results with these reasonable adjustments.

Figure 23: Mr. Lawton's Corrected DCF Results[126]

Model	**Mean**	**Median**	**Midpoint**
Constant Growth DCF	9.53%	9.40%	9.46%
Two-Stage DCF	9.55%	9.68%	9.62%
Average			**9.54%**

B. Application of the CAPM and ECAPM Analyses

Q. Please summarize Mr. Lawton's CAPM analyses and results.

A. Mr. Lawton performs a CAPM and ECAPM analysis to his proxy group, which produces midpoint ROE estimates of 8.29 percent to 8.58 percent. His analyses apply a historical risk-free rate of 3.14 percent based on the average 30-year Treasury bond yield in May, June, and July 2022; Beta coefficients from *Value Line*; and a Market

[126] DEU Exhibit 2.22R and DEU Exhibit 2.23R.

Risk Premium of 6.30 percent calculated as the difference in the long-term historical arithmetic average total returns for large company stocks (12.30 percent) and total return long-term government bonds (6.00 percent).[127]

As a preliminary matter, I agree with Mr. Lawton's use of the 30-year Treasury bond yield as the risk-free rate and his use of *Value Line* Beta coefficients. I also agree that the ECAPM approach is a reasonable and appropriate method to estimate DEU's Cost of Equity. As discussed below, however, I disagree with his failure to consider a projected risk-free rate and with his 6.30 percent Market Risk Premium estimate. Although it appears that Mr. Lawton did not rely on his CAPM and ECAPM results in his ultimate 9.20 percent ROE recommendation, as shown below, modest adjustments to his analyses produce more reasonable results.

Q. Why is it appropriate to consider a projected risk-free rate in the CAPM and ECAPM analyses?

A. As noted in my response to Mr. Coleman, estimating the Cost of Equity is a forward-looking exercise, which is based on investor expectations. Mr. Lawton acknowledges that assuming historical trends continue to hold in the future may be "a suspect assumption."[128] Given the Federal Reserve's clearly stated intention to raise interest rates to head off inflation, it is reasonable to expect higher interest rates in the near-

[127] Direct Testimony of Daniel J. Lawton, at 50.
[128] Direct Testimony of Daniel J. Lawton, at 45.

term. By relying exclusively on historical risk-free rates, Mr. Lawton understates the Cost of Equity.

Q. What are your concerns with Mr. Lawton's 6.30 percent historical Market Risk Premium estimate?

A. As noted earlier, Mr. Lawton's 6.30 percent Market Risk Premium is the difference in the historical arithmetic average annual total return on large company stocks (12.30 percent) and historical arithmetic average annual *total* return on long-term government bonds (6.00 percent) reported by Kroll between 1926 and 2021. I have two concerns with that approach: (1) Mr. Lawton's 6.30 percent Market Risk Premium relies on the *total* return on long-term Government bonds and (2) his Market Risk Premium is not calculated in relation to his risk-free rate and, therefore, does not consider the inverse relationship between the Market Risk Premium and the level of interest rates.

Q. Why is the use of the total return on long-term government bonds in the calculation of the historical average Market Risk Premium incorrect?

A. The appropriate return for the risk-free rate that should be applied in the Market Risk Premium calculation is the *income* return on long-term bonds, not the total return. As Kroll (the source of Mr. Lawton's data) explains, the total return on a security is composed of three components: (1) the income return; (2) capital gains (or losses if the value of the security falls); and (3) reinvestment return.

> Another point to keep in mind when calculating the equity risk premium is that **the income return on the appropriate-horizon**

> **Treasury security, rather than the total return, is used in the calculation**. The total return comprises three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow, or in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. **The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return**.[129]

The income return is generally defined as the coupon, or interest rate on the security, which does not change over the life of the security. In contrast, the value of the security rises or falls as interest rates change, resulting in uncertain capital gains. As such, the income return is the only "riskless" component of the total return. The long-term historical average Market Risk Premium correctly using the long-term historical arithmetic average *income* return is 7.46 percent, 116 basis points higher than Mr. Lawton's 6.30 percent Market Risk Premium estimate.

Q. Is Kroll's long-term historical average Market Risk Premium of 7.46 percent an appropriate estimate of the expected Market Risk Premium?

A. No, not in the current market environment. The Market Risk Premium represents the additional return required by equity investors to assume the risks of owning the "market portfolio" of equity relative to long-term Treasury securities. As with other

[129] Kroll, 2022 SBBI Yearbook, at 200-201.

elements of Cost of Equity analyses, the Market Risk Premium is meant to be a forward-looking parameter. Relying on a Market Risk Premium calculated using historical returns for both the market and the government bond may produce results that are inconsistent with investor sentiment and current conditions in capital markets, especially if the risk-free rate assumed in the CAPM analysis is different than the risk-free captured in the historical average Market Risk Premium. The fundamental analytical issue in applying the CAPM is to ensure that all three components of the model (*i.e.*, the risk-free rate, Beta coefficient, and the Market Risk Premium) are consistent with market conditions and investor expectations. As Morningstar observes:

> It is important to note that the expected equity risk premium, as it is used in discount rates and cost of capital analysis, is a forward-looking concept. That is, the equity risk premium that is used in the discount rate should be reflective of what investors think the risk premium will be going forward.[130]

Longstanding financial research has shown the Market Risk Premium to vary over time and with market conditions. French, Schwert, and Stambaugh, for example, found the Market Risk Premium to be positively related to predictable market volatility.[131] Using forward-looking measures of the expected market return, Harris and Marston found "…strong evidence…that market risk premia change over time

[130] Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 53.
[131] *See,* Kenneth R. French, G. William Schwert, Robert F. Stambaugh, *Expected Stock Returns and Volatility*, Journal of Financial Economics 19 (1987), at 27.

and, as a result, use of a constant historical average risk premium is not likely to mirror changes in investor return requirements."[132] Among their findings is that the Market Risk Premium is inversely related to Government bond yields. That is, as interest rates fall, the Market Risk Premium increases. Financial researchers therefore have found the Market Risk Premium to be time-varying, and a function of economic parameters including interest rates.[133]

As explained in my response to Mr. Coleman, the Market Risk Premium is a function of the risk-free rate at a point in time. The long-term average risk-free rate (*i.e.*, the income return on long-term government bonds discussed earlier) assumed in the long-term historical average Market Risk Premium of 7.46 percent is 4.87 percent,[134] well above the current and projected risk-free rates assumed by the ROE witnesses in this proceeding. Because there is an inverse relationship between the Market Risk Premium and government bond yields, and Treasury bond yields are well *below* the long-term average, it is reasonable and consistent with financial theory to expect the Market Risk Premium to be well *above* the long-term average. As such, I do not believe it is appropriate to combine the long-term historical average Market Risk Premium with current or projected Treasury bond yields in the CAPM model,

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[132] Robert S. Harris, Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts,* Financial Management, Summer 1992, at 69.
[133] As explained in my Direct Testimony at 38-39, there is a similar negative relationship between interest rates and the Equity Risk Premium in the Bond Yield Plus Risk Premium analysis.
[134] *See* DEU Exhibit 2.21R.

unless the risk-free rate assumed in the CAPM is consistent with the long-term historical average risk-free rate.

If Mr. Lawton believes it is reasonable to assume that the long-term historical average data is a reasonable expectation of the future, then he should subtract his risk-free rate from the long-term historical arithmetic average total return on the market to calculate the Market Risk Premium. This would produce a Market Risk Premium of 9.19 percent,[135] which would more appropriately reflect the inverse relationship between the Market Risk Premium and the risk-free rate in the current market.

Q. Does Mr. Lawton agree this inverse relationship exists?

A. Yes, he does. At page 23 of his Direct Testimony, Mr. Lawton observes that "the risk premium (equity return – debt return) … grows as capital costs decline."

Q. Do you have any concerns with Mr. Lawton's "more current" Market Risk Premium estimate of 6.30 percent?[136]

A. Yes, I do. Mr. Lawton calculates his "more current" Market Risk Premium as the difference between the average of the mean and median expected return for the proxy group reported by *Value Line* (9.44 percent) and his risk-free rate of 3.14 percent. As a preliminary matter, 9.44 percent is <u>not</u> the average of the mean and median expected return on the proxy group reported by *Value Line*. It is the mean and median expected

[135] 9.19% = 12.33% - 3.14%
[136] Direct Testimony of Daniel J. Lawton, at 51.

return for only five of the six companies. As Mr. Lawton's Exhibit OCS 3.5 shows, 9.44 percent is the average of his mean and median *adjusted* proxy group return in Column K that excludes the result for NiSource Inc. based on Mr. Lawton's subjective outlier thresholds. *Value Line*'s actual mean and median projected equity return for the complete proxy group is 10.39 percent and 9.42 percent, respectively. The average of these values is 9.91 percent. However, this calculation mistake is not the biggest problem with Mr. Lawton's "more current" Market Risk Premium estimate. The more critical error is that his approach substitutes his proxy group equity return estimate as an estimate of the expected market return. Given that the proxy group's Beta coefficients are less than 1.00 (the Beta coefficient of the market), assuming the two are equal is a critical error in logic and effectively double counts the risk-adjusted Market Risk Premium applied in his CAPM analyses.

Q. Please explain how Mr. Lawton's "more current" Market Risk Premium approach double counts the risk adjustment for the proxy group in the CAPM.

A. Recall the CAPM formula shown in Equation [3] below:

$$K = R_f + \beta\,(R_m - R_f) \qquad [3]$$

where:

K = the required market ROE;

β = the Beta coefficient;

R_f = the risk-free rate of return; and

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

In the CAPM formula, the Beta coefficient is applied to the Market Risk Premium (*Rm – Rf*) to produce a "risk-adjusted" risk premium for the subject company or proxy group. However, Mr. Lawton's original (though incorrect) 9.44 percent expected return for the proxy group is not the value for the market return (*Rm)*; it is the value for *K* in Equation [3]. Rearranging the terms in Equation [3], we can solve for the implied market return, *Rm*, as shown in Equation [4]:

$$R_m = \frac{(K - R_f)}{\beta} + R_f \qquad [4]$$

Plugging in Mr. Lawton's original 9.44 percent expected return for the proxy group (*K*) risk-free rate of 3.14 percent and the average of his proxy group mean and median Beta coefficients (0.82), produces an implied expected market return of 10.85 percent. The corresponding Market Risk Premium would be 7.71 percent, 141 basis points above Mr. Lawton's 6.30 percent estimate. We can verify the accuracy of this calculation by multiplying the Beta coefficient of 0.82 percent to the 7.71 percent Market Risk Premium, which results in a "risk-adjusted" Market Risk Premium of 6.30 percent. In other words, Mr. Lawton's 6.30 percent "more current" Market Risk Premium is already risk adjusted and applying it again in the CAPM formula double counts the risk adjustment. Using the correct expected return for the complete proxy group from *Value Line* of 9.91 percent in the example above produces an implied expected market return of 11.42 percent and a Market Risk Premium of 8.28 percent.

Q. What is your response to Mr. Lawton's position that your expected market return is "overstated" because the analysis violates basic DCF assumptions?[137]

A. Mr. Lawton is incorrect and appears to misunderstand the analysis. Mr. Lawton asserts that in 93 instances the analysis "violates" the basic DCF assumption that the discount rate (ROE) should be greater than the growth rate.[138] However, reviewing my DEU Exhibit 2.04 (for both the Bloomberg analysis and the Value Line analysis) shows that for every company in the S&P 500, the growth rate in Column [5] is less than the DCF result in Column [6]. It is the sum of the weighted DCF result for each of the S&P 500 companies that produces the expected market return. The market required return is not the discount rate for each of the companies in the S&P 500.

As explained in my response to Mr. Walters, at any time, the market as a whole includes companies with high and low returns, both above and below the expected return on the market. Adjusting the individual company returns that Mr. Lawton views as unreasonable substitutes his subjective opinion for investors and biases the analysis. Mr. Lawton's criticisms are in error and should be rejected.

[137] Direct Testimony of Daniel J. Lawton, at 67-68.
[138] Direct Testimony of Daniel J. Lawton, at 67.

Q. Do you have any comments regarding Mr. Lawton's ECAPM analysis?

A. The same issues I identified in his CAPM analysis appear in his ECAPM analysis. Therefore, my criticisms and corrections to his analyses apply to his ECAPM analysis as well.

Q. What would Mr. Lawton's CAPM and ECAPM results be with your suggested corrections?

A. I recommend a several adjustments to Mr. Lawton's CAPM and ECAPM analyses. First, I recommend he also consider a projected 30-year Treasury bond yield. Therefore, I have developed a set of analyses using both his 3.14 percent risk-free rate and my projected 30-year Treasury bond yield from *Blue Chip Financial Forecasts* of 3.66 percent. I also make several suggested corrections to his Market Risk Premium estimate as explained above. Those values range from 7.46 percent to 9.19 percent. Applying the various permutations of these inputs with his *Value Line* Beta coefficients produce a matrix of the following CAPM and ECAPM results ranging from 9.23 percent to 11.14 percent shown in Figure 24 and Figure 25 below (see also DEU Exhibit 2.24R). The average of the corrected CAPM results is 10.05 percent and the average of the corrected ECAPM result is 10.43 percent.

Figure 24: Mr. Lawton's Corrected CAPM Results[139]

Risk-Free Rate (*Rf*)	MRP 1 (7.46%)	MRP 2 (8.28%)	MRP 3 (9.19%)	MRP 4 (8.67%)
Current *Rf*: 3.14%	9.23%	9.91%	10.65%	
Projected *Rf*: 3.66%	9.75%			10.74%
Average	10.05%			

Figure 25: Mr. Lawton's Corrected ECAPM Results[140]

Risk-Free Rate (*Rf*)	MRP 1 (7.46%)	MRP 2 (8.28%)	MRP 3 (9.19%)	MRP 4 (8.67%)
Current *Rf*: 3.14%	9.57%	10.28%	11.07%	
Projected *Rf*: 3.66%	10.09%			11.14%
Average	10.43%			

C. Application of the Risk Premium Analysis

Q. Please summarize Mr. Lawton's Bond Yield Equity Risk Premium analysis and results.

A. Mr. Lawton's Bond Yield Equity Risk Premium analysis calculates the Equity Risk Premium as the difference in the average annual authorized ROE for natural gas utilities and the annual average 30-year Treasury bond yield from 1981 to 2021. He then performs a linear regression to determine the relationship of the change in the Equity Risk Premium for each 1.00 percent change in the 30-year Treasury bond yield.

[139] DEU Exhibit 2.24R. Results shown are the average of the proxy group mean and median.
[140] DEU Exhibit 2.24R. Results shown are the average of the proxy group mean and median.

Mr. Lawton's Bond Yield Equity Risk Premium analysis applies a historical three-month average 30-year Treasury bond yield of 3.14 percent for the months of May, June, and July 2022 and a spot yield of 3.20 percent as of August 19, 2022 to produce ROE estimates of 9.73 percent to 9.70 percent.[141]

Q. Does Mr. Lawton's Bond Yield Equity Risk Premium analysis consider projected bond yields?

A. No, it does not.

Q. Did you correct Mr. Lawton's Bond Yield Equity Risk Premium analysis to apply projected treasury bond yields?

A. Yes, I did. To develop a forward-looking Bond Yield Equity Risk Premium estimate, I applied *Blue Chip's* projected 30-year Treasury bond yield of 3.66 percent that I applied in my adjustments to Mr. Lawton's CAPM analyses. Applying this projected Treasury bond yield produces a forward-looking ROE estimate of 10.00 percent.[142]

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[141] Direct Testimony of Daniel J. Lawton, at 48-49; Exhibit OCS 3.11.

[142] 3.66% + (-0.4239) x (3.66% - 6.08%) + 5.31% = 10.00%. *See* Exhibit OCS 3.11 for Mr. Lawton's Risk Premium calculation.

Q. What is your response to Mr. Lawton's position that your Bond Yield Plus Risk Premium analysis is "not consistent with reasonable expectations and financial theory"?[143]

A. Mr. Lawton fails to understand that the relationship between the Equity Risk Premium and the 30-year Treasury bond yield is modeled as a semi-log relationship, and not a linear relationship. As Mr. Lawton agrees, the Cost of Equity and Treasury yields do not necessarily move in lockstep.[144] Further, as explained in my Direct Testimony, decreases in Treasury bond yields do not always indicate a reduction in the investor-required return. During volatile markets, the decline in Treasury yields reflects an increase in risk aversion and, therefore, an increase in required equity returns as investors favor the relative security of lower risk government bonds.[145] Very low interest rates in recent years have occurred during severe market crises (*e.g.*, the Great Recession and the COVID-19 pandemic); therefore, it is reasonable to expect the equity risk premium to be exponentially higher during times of market crisis as investors require higher returns to compensate them for greater risk during volatile markets. Consequently, I disagree with Mr. Lawton that interest rates and the Cost of Equity always move in the same direction.

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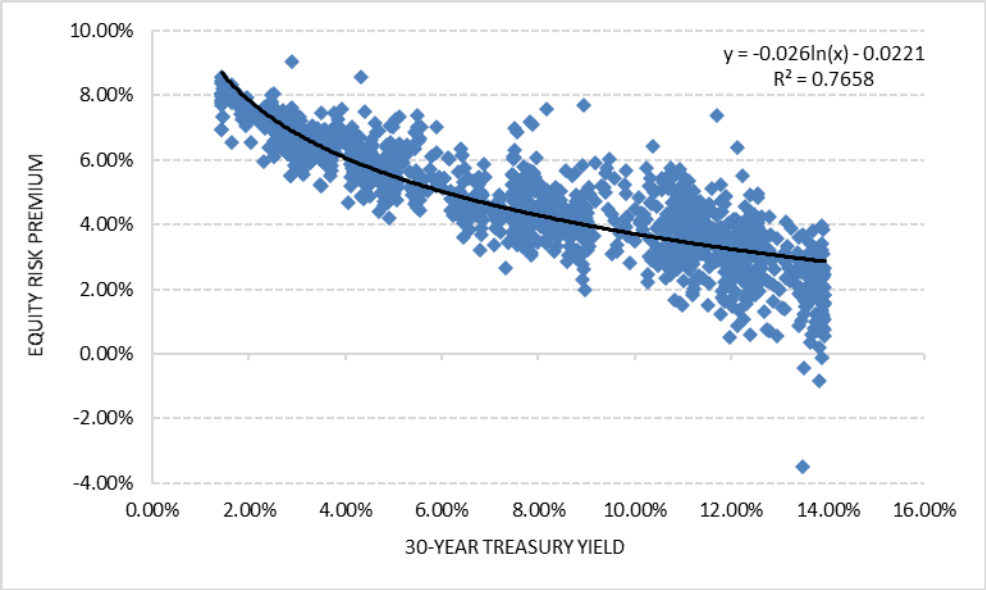
[143] Direct Testimony of Daniel J. Lawton, at 69.
[144] Direct Testimony of Daniel J. Lawton, at 22.
[145] Direct Testimony of Jennifer E. Nelson, at 51.

As shown in Figure 26 below, at the extreme low end of the interest rate spectrum, the relationship between interest rates and authorized returns is not linear, it is asymptotic.

Figure 26: Equity Risk Premium and 30-Year Treasury Yield[146]



Therefore, the semi-log regression analysis more appropriately describes the relationship between interest rates and returns than does a linear regression under crisis-induced, abnormally low interest rate environments. As such, Mr. Lawton's concerns are misplaced.

[146] Source: Exhibit JEN-2.16R. Data as of August 31, 2022.

D. Summary of Mr. Lawton's Corrected ROE Results

Q. Please summarize Mr. Lawton's corrected ROE analyses with the adjustments you recommend.

A. As shown in Figure 27 below, modest corrections to Mr. Lawton's ROE analyses produce mean ROE results in the range of 9.46 percent to 10.43 percent, which overlaps my recommended range of 9.60 percent to 10.75 percent. The average of the corrected results is 9.88 percent (*see* Figure 27 below).

Figure 27: Mr. Lawton's Corrected ROE Analytical Results

Model	**Range**	**Average**
Constant Growth DCF	9.40% -9.53%	9.46%
Two-Stage DCF	9.55% - 9.68%	9.62%
CAPM	9.23% - 10.74%	10.05%
ECAPM	9.57% - 11.14%	10.43%
Equity Bond Risk Premium	9.70% - 10.00%	9.81%
Average		**9.88%**

E. Financial Integrity

Q. Please summarize Mr. Lawton's assessment of his ROE and capital structure recommendations as they affect measures of DEU's financial integrity.

A. Mr. Lawton evaluates the reasonableness of his ROE and capital structure recommendations by calculating *pro forma* ratios, including Cash Flow from Operations ("CFO") to Debt, CFO less Dividends to Debt, and Total Debt to

Capital.[147] Mr. Lawton calculates those ratios based on DEU's retail cost of service for the test year to determine whether his recommended ROEs and capital structure will provide "sufficient financial metrics for the Company."[148] Based on his *pro forma* analyses, Mr. Lawton concludes his recommendations "will not cause DEU's financial integrity to diminish.[149] It is difficult to reconcile how a material reduction in the Company's current authorized ROE and capital structure would not diminish the Company's financial profile.

Q. Does Mr. Lawton's analysis provide any basis for the conclusions he draws?

A. No, it does not. Mr. Lawton's analysis compares his calculated *pro forma* metrics based on the Company's proposed cost of service and his recommendation; however, he provides no benchmark or basis to evaluate whether the financial metrics his analysis produces are "sufficient". For example, in its most recent credit opinion, Moody's noted its rating for DEU is based on an assumed CFO less Dividends to Debt ratio of 13 percent to 15 percent, and a Debt to Capitalization ratio of 40 percent to 45 percent.[150] However, Exhibit OCS 3.12 shows Mr. Lawton's proposal produces ratios below Moody's thresholds, at 12.41 percent and 49.00 percent for CFO less Dividends to Debt and Debt to Capital, respectively. As discussed below, Mr. Lawton's analysis

[147] Direct Testimony of Daniel J. Lawton, at 62-63; Exhibit OCS 3.12.
[148] Direct Testimony of Daniel J. Lawton, at 62.
[149] Direct Testimony of Daniel J. Lawton, at 63.
[150] Moody's Investors Service, Questar Gas Company: Update to Credit Analysis, at 6 (November 30, 2021).

is an oversimplified and partial analysis that does not accurately reflect the credit ratings agencies' ratings determination process.

Q. Please explain why Mr. Lawton's financial integrity analysis is not reflective of the credit ratings determination process applied by the credit rating agencies.

A. Mr. Lawton's financial integrity analysis is an oversimplified view that fails to take into consideration the many quantitative and qualitative factors considered by the credit rating agencies. Although credit rating agencies review cash flow and leverage metrics in their credit determinations, the actual assessment of those metrics is far more complex than Mr. Lawton's analysis suggests. Cash Flow/Leverage considerations are one element of a broad set of criteria.[151] Unlike Mr. Lawton's *pro forma* analyses, the rating agencies' assessment does not look to a single period or assume static relationships among variables. S&P for example reviews credit ratios "on a time series basis with a clear forward-looking bias."[152] Further, the ratios depend on "base case" projections considering "current and near-term economic conditions, industry assumptions, and financial policies."[153] Consequently, to the extent Mr. Lawton's metrics are tied to credit metrics benchmarks of the credit agencies, relying on *pro forma* credit metrics to assess the credit implications of any

[151] Standard & Poor's Ratings Services, *Corporate Methodology*, at 5 (November 19, 2013).
[152] Standard & Poor's Ratings Services, *Corporate Methodology*, at 33 (November 19, 2013).
[153] Standard & Poor's Ratings Services, *Corporate Methodology*, at 33 (November 19, 2013).

specific ROE and equity ratio is a partial analysis that may lead to incorrect conclusions.

Q. What is your conclusion regarding Mr. Lawton's financial integrity analysis?

A. Mr. Lawton's financial integrity analysis does not demonstrate his ROE and capital structure recommendation are "sufficient" to support its current credit profile. As noted above, the predictability and stability in Utah's regulatory environment is weighed heavily by investors and the ratings agencies. It is critical that their perceptions of the regulatory environment are not further degraded. I do not believe that Mr. Lawton's recommendations would be perceived as supportive.

VII. RESPONSE TO FEA WITNESS MR. WALTERS

Q. Please summarize Mr. Walters' recommendation regarding the Company's Cost of Equity.

A. Mr. Walters recommends an ROE of 9.40 percent, the midpoint of his 9.00 percent to 9.80 percent recommended range.[154] Mr. Walters sets his recommendation by reference to: (1) his Constant Growth and Multi-Stage DCF models (with median and average results ranging from 7.99 percent to 9.31 percent);[155] (2) his Risk Premium study (ranging from 9.27 percent to 10.42 percent);[156] and (3) his CAPM analyses

[154] Direct Testimony and Exhibits of Christopher C. Walters, at 3, 60.
[155] Direct Testimony and Exhibits of Christopher C. Walters, at 42, Table CCW-8.
[156] Direct Testimony and Exhibits of Christopher C. Walters, at 48, Table CCW-9.

(ranging from 6.71 percent to 10.97 percent).[157] The low end of his recommended range is set by reference to his DCF-based ROE recommendation (9.00 percent), and the high end set by reference to his Risk Premium-based ROE recommendation (9.80 percent).[158]

Q. What are the principal analytical areas in which you disagree with Mr. Walters' ROE analyses?

A. The principal areas in which I disagree with Mr. Walters include: (1) certain inputs and assumptions applied in his DCF analyses; (2) the assumptions and methods underlying his Risk Premium analyses; and (3) his application of the CAPM.

A. Application of the Discounted Cash Flow Model Analyses

Q. Please summarize Mr. Walters' DCF analyses.

A. Mr. Walters uses two DCF models, a constant growth DCF model (using both analysts' projected earnings growth and sustainable growth rates) and a Multi-Stage DCF ("MSDCF") model. In both analyses, he applies stock price data for the 13-week period ending July 8, 2022. For his long-term growth rate component in his Analysts' Growth Constant Growth DCF model, he uses three- to five-year projected earnings growth rates from Zacks, S&P Global Market Intelligence ("MI"), and Yahoo! Finance. His Sustainable Growth Constant Growth applies an estimate of projected

[157] Direct Testimony and Exhibits of Christopher C. Walters, at 59, Table CCW-11.
[158] Direct Testimony & Exhibits of Christopher C. Walters, at 60, Table CCW-12.

retention growth from *Value Line* similar to Mr. Lawton's approach described earlier. Mr. Walters uses *Blue Chip Financial Forecasts* for the terminal growth rate in his MSDCF analysis. Using these inputs, he derives DCF-based ROE estimates ranging from 9.02 percent to 9.31 percent for his Constant Growth DCF models, and between 7.99 percent and 8.19 percent for his MSDCF model.[159] From these results, Mr. Walters concludes that a reasonable DCF-based ROE estimate is 9.00 percent.[160]

Q. Do you have any general comments about Mr. Walters' DCF-based estimate of 9.00 percent?

A. Yes, I do. Mr. Walters' 9.00 percent DCF-based estimate (which forms the bottom end of his recommended range and accounts for 50 percent of his ultimate 9.40 percent recommendation) is approximately equal to the mean and median results of each of his three approaches shown in his Table CCW-8. ROE estimates of 7.99 percent and 8.19 percent are far removed from any reasonable estimate of DEU's ROE and do not meet any of the *Hope* and *Bluefield* standards for a fair return and should be given no weight.

Q. Are there aspects of the DCF analysis with which you and Mr. Walters agree?

A. Yes. I agree with Mr. Walters' position that analysts' projected EPS growth rates are the best predictor of future stock returns.[161] As explained in my response to Mr.

[159] Direct Testimony & Exhibits of Christopher C. Walters, at 42.
[160] Direct Testimony & Exhibits of Christopher C. Walters, at 42.
[161] Direct Testimony & Exhibits of Christopher C. Walters, at 31.

Coleman, this conclusion is supported by academic literature, including the 1989 Gordon study cited by Mr. Walters. Accordingly, analysts' projected EPS growth rates are the most appropriate for use in the DCF model. Therefore, my primary disagreements are with Mr. Walters' Sustainable Growth DCF and MSDCF analyses.

Q. Do you agree with Mr. Walters' position that the growth rates applied in the DCF model are limited by forecasted Gross Domestic Product ("GDP") growth?[162]

A. No, I do not. Mr. Walters' MSDCF analysis is premised on the assumption that analysts' projected EPS growth rates are "unsustainable" because a utility stock cannot grow at a faster pace than the growth in the overall economy.[163] Therefore, he concludes that the projected GDP growth rate is the maximum long-term sustainable growth rate, which he applies as the terminal growth rate in his MSDCF analysis. As discussed below, the premise of Mr. Walters' MSDCF analysis does not hold, rendering the analysis and its results unsupported.

Using electricity sales as a proxy for utility sales, Mr. Walters' MSDCF analysis is based on his presumption that utility growth is linked to sales growth as utilities invest capital to meet demand, which depends ultimately on economic growth.[164] While this assumption may have been true decades ago, it does not currently hold as utilities are investing more capital in non-revenue producing

[162] Direct Testimony & Exhibits of Christopher C. Walters, at 32-33.
[163] Direct Testimony & Exhibits of Christopher C. Walters, at 35-37.
[164] Direct Testimony & Exhibits of Christopher C. Walters, at 37-38.

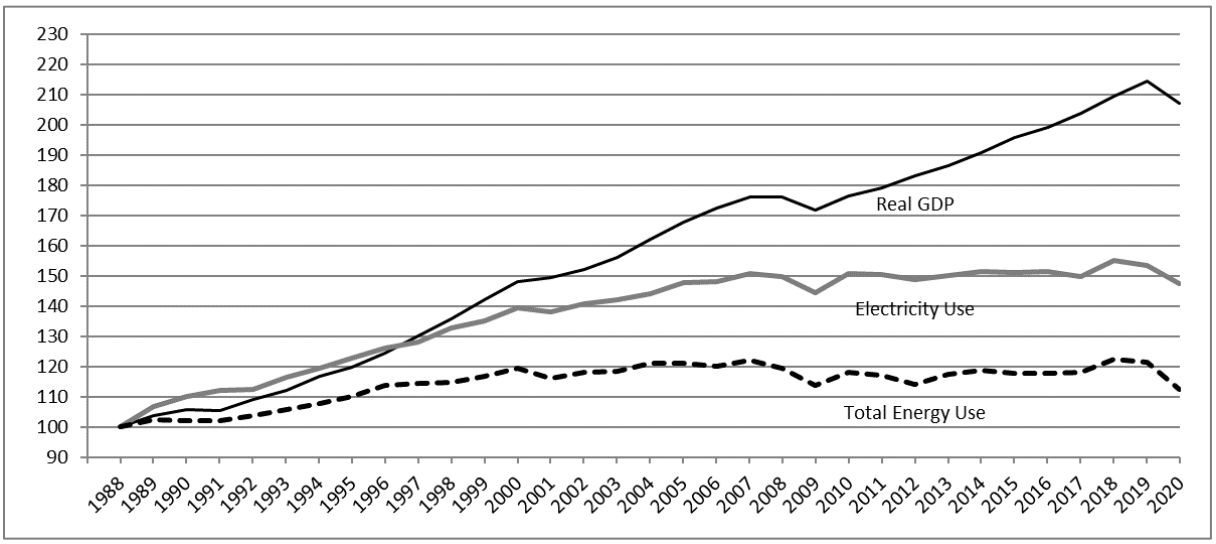
investment, such as infrastructure replacement and grid modernization. These non-revenue producing investments generally do not increase customer growth or sales. As the U.S. Energy Information Administration ("EIA") noted in a recent article:

> Distribution spending has outpaced growth in both the number of electric customers and in retail electricity sales because much of the increased distribution spending in the last 20 years has been on projects that are not directly related to customer growth or increased sales. These investments are not driven by an increase in the number of customers or sales. These projects include replacing aging equipment, modernizing and upgrading maintenance and billing technology, and fortifying distribution structures against weather-related damage.[165]

These statements hold true for natural gas utilities as well because capital expenditures for gas utilities substantially include infrastructure replacement investments to upgrade and replace old distribution mains and services, which do not increase sales. Furthermore, states are placing more emphasis on energy efficiency and conservation programs, which have resulted in flat or declining sales. Mr. Walters' Exhibit FEA 1.08 supports the EIA's finding that over approximately the last 20 years, electricity sales and total energy use have *not* been linked to U.S. economic growth, contradicting the premise of his Multi-Stage DCF analysis. In fact, Mr. Walters' Exhibit FEA 1.08 shows electricity sales has been flat since approximately 2006, while real GDP has climbed (reproduced as Figure 28 below).

[165] U.S. Energy Information Administration, "Major Utilities' spending on the electric distribution system continues to increase," *Today in Energy*, May 27, 2021. https://www.eia.gov/todayinenergy/detail.php?id=48136

Figure 28: Exhibit FEA 1.08 - Electricity Sales and Real GDP (1988 – 2020)



The fact is, utilities' earnings growth is linked to rate base growth. Since non-revenue producing investments have been significant drivers of rate base growth over the last 20 years, the link between utility earnings and sales has decoupled. Consequently, Mr. Walters' Multi-Stage DCF estimates should be rejected as his own data does not support the premise underlying his terminal growth rate that utility growth is linked to sales and is limited by GDP growth.

Q. Is there additional evidence to support the position that utility growth is not limited by GDP growth?

A. Yes. GDP is the sum of all private industry and government output in the United States, and the GDP growth rate is an approximate average of the value of those industries. As such, some sectors will grow faster than the average, and some will grow slower. As shown in DEU Exhibit 2.25R, since 1947, the utility sector as a

component of GDP has grown at a faster compound average annual rate (6.54 percent) than the overall GDP growth rate (6.30 percent). Consequently, I disagree with the premise that GDP growth is an upper limit on an individual utility company's growth or the utility sector's growth expectations. Notably, the EPS growth rate projections included in my and the Opposing Witnesses' DCF analyses are below the long-term historical compound annual GDP growth rate for the utility sector. From that perspective, the projected EPS growth rates in our respective Constant Growth DCF analyses are not excessive.

Q. What are your concerns with Mr. Walters' sustainable growth DCF analysis and results?

A. As explained in response to Mr. Lawton, the premise behind the sustainable growth (or retention growth) model does not hold. Additionally, the 1989 study by Myron Gordon cited by Mr. Walters indicates that sustainable growth rates more poorly predict future stock returns relative to analysts' projected earnings growth rates. Therefore, the DCF results produced by those growth rates are unsupported, including by Mr. Walters' own evidence.

Q. Mr. Walters criticizes your Quarterly Growth DCF analysis asserting it "overstates" the fair rate of return.[166] What is your response?

A. Mr. Walters is incorrect. Mr. Walters' position appears to be that the return earned from quarterly compounding of dividends is separate and incremental to investors' required return and that "the return available to investors from reinvesting dividends is not a cost to the utility."[167] However, since dividends are paid quarterly, investors unquestionably consider the cash flow effects of such quarterly payments when determining their required returns.

The Quarterly Growth DCF model simply is a refinement of the Constant Growth DCF model relied upon by the ROE witnesses in this proceeding. As noted in my Direct Testimony, rather than assuming annual cash flows, the model incorporates investors' expectations of quarterly dividends, reinvested at the investor-required ROE.[168] In that regard, the Quarterly DCF model is not fundamentally different than the annual form of the model (on which Mr. Walters relies); both assume that cash flows are reinvested at the required rate of return. The only difference, then, relates to the timing of the cash flows.

Since utilities pay dividends on a quarterly basis, it is more precise and consistent with the DCF model's fundamental structure to use the Quarterly DCF

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[166] Direct Testimony & Exhibits of Christopher C. Walters, at 65-66.
[167] Direct Testimony & Exhibits of Christopher C. Walters, at 65.
[168] Direct Testimony of Jennifer E. Nelson, at 24-25.

model to estimate the market-required Cost of Equity.[169] The stock prices paid by investors (an input in both the Constant Growth and Quarterly Growth DCF models) assume the quarterly timing of dividend payments; therefore, a proper DCF-based Cost of Equity estimate must also reflect the actual timing of quarterly dividends. As Dr. Roger Morin explains:

> Clearly, given that dividends are paid quarterly and that the observed stock price reflects the quarterly nature of dividend payments, the market-required return must recognize quarterly compounding, for the investor receives dividend checks and reinvests the proceeds on a quarterly schedule... The annual DCF model inherently understates the investors' true return because it assumes all cash flows received by investors are paid annually.[170]

As explained in my Direct Testimony, although the half-year dividend growth adjustment applied in the Constant Growth DCF analysis is meant to approximate the payment of quarterly dividends; it is a conservative, simplifying assumption that does not fully reflect the quarterly receipt and reinvestment of dividends.[171] As such, it underestimates the Cost of Equity for quarterly dividend paying companies such as utilities. In other words, the Quarterly Growth DCF model does not add an "incremental" cost as Mr. Walters suggests; it is a more precise estimate of the investor-required return Cost of Equity. As such, Mr. Walters' position is incorrect and should be rejected.

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[169] Direct Testimony of Jennifer E. Nelson, at 24-25.
[170] Roger A. Morin, Ph.D., New Regulatory Finance, Public Utility Reports, Inc., at 344 (2006).
[171] Direct Testimony of Jennifer E. Nelson, at 24.

Q. What is your recommendation regarding Mr. Walters' DCF estimates?

A. The underlying premises of Mr. Walters' Constant Growth DCF analysis using sustainable growth rates and his MSDCF analysis do not hold and are unsupported by the evidence and academic studies. Therefore, I recommend that the Commission give no weight to these results.

B. Application of the Risk Premium Method

Q. Please briefly describe Mr. Walters' Risk Premium analyses.

A. Mr. Walters develops two Risk Premium based approaches. He first defines the Risk Premium as the difference between the average annual authorized equity returns for electric utilities and a measure of long-term bond yields for each year between 1986 and 2022.[172] Mr. Walters' first approach to estimating the Risk Premium looks to the 30-year Treasury yield, and his second approach considers A-rated utility bond yields.[173] In developing his risk premium estimates, he reviews risk premiums over five-year and ten-year rolling averages. Based on this review, Mr. Walters concludes that risk premium estimates "between the 50th and 75th percentile of the rolling five-year average risk premiums" are "appropriate in the current market", which produces risk premiums ranging from 5.68 percent to 6.44 percent for his analysis using Treasury bond yields.[174] Combining this range of risk premium estimates with a

[172] Direct Testimony & Exhibits of Christopher C. Walters, at 43.
[173] Direct Testimony & Exhibits of Christopher C. Walters, at 43.
[174] Direct Testimony & Exhibits of Christopher C. Walters, at 47.

projected 30-year Treasury bond yield of 3.80 percent from *Blue Chip Financial Forecasts,* produces ROE estimates of 9.48 percent to 10.24 percent. Using the same approach with his utility bond yield analysis, Mr. Walters calculates that the third quartile of the utility bond yield risk premium ranges from 4.24 percent to 5.33 percent.[175] Combining this range of risk premium estimates with the 13-week average utility A-rated and Baa-rated utility bond yields as of July 8, 2022, Mr. Walters calculates ROE estimates of 9.27 percent to 10.07 percent using A-rated utility bond yields and 9.62 percent to 10.42 percent using Baa-rated utility bond yields.[176]

Q. Do you have any concerns with Mr. Walters' Risk Premium analyses?

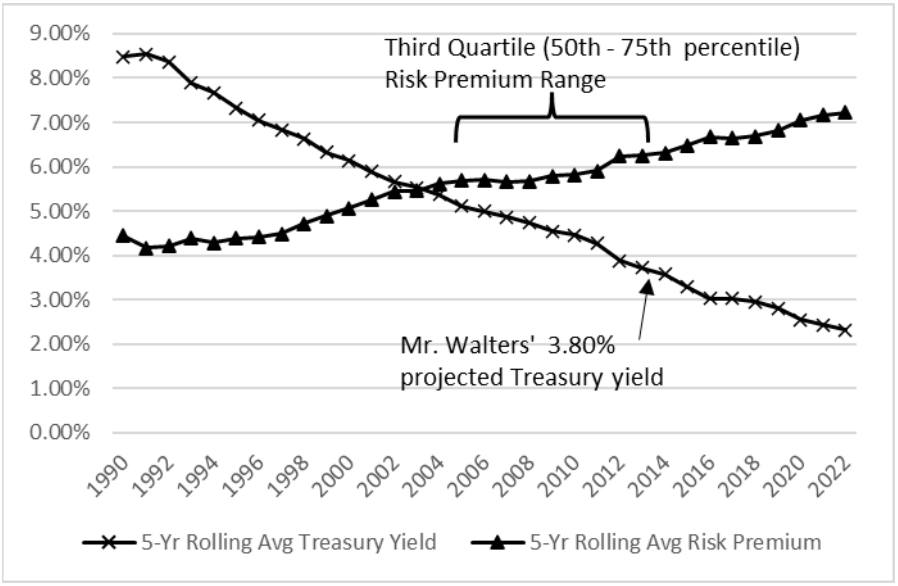
A. Yes, I have two concerns with his analyses. First, Mr. Walters' method understates the required risk premium in the current market because it fails to adequately reflect the inverse relationship between the Equity Risk Premium and bond yields. Second, he does not apply projected utility bond yields even though he applies a projected 30-year Treasury bond yield. Because the Cost of Equity is forward-looking, Mr. Walters should have also considered projected utility bond yields in the Risk Premium analysis.

[175] Direct Testimony & Exhibits of Christopher C. Walters, at 47.
[176] Direct Testimony & Exhibits of Christopher C. Walters, at 47.

Q. Please elaborate how Mr. Walters' risk premium analysis fails to fully reflect the inverse relationship between his risk premium and bond yields.

A. As shown in Figure 29 below, which demonstrates a clear inverse relationship between the risk premium and bond yields, Mr. Walters' "Third Quartile" risk premium range understates the appropriate risk premium with his projected 30-year Treasury bond yield of 3.80 percent. As such the low end of his Risk Premium ROE estimates are biased downward.

Figure 29: Mr. Walters Treasury Yield-Based Risk Premium Analysis[177]



In other words, Mr. Walters' 3.80 percent projected 30-year Treasury bond yield reflects approximately the 30th percentile of his historical Treasury bond yield data. Therefore, the 70th percentile (*i.e.*, 100% - 30%) of his risk premium range more

[177] FEA Exhibit 1.11; five-year rolling averages.

accurately reflects the inverse relationship shown in Figure 29 above. The same is true for his analysis using utility bond yields. His A-rated and Baa-rated utility bond yields of 4.74 percent and 5.09 percent are in the 25th to 29th percentile of his historical utility bond yields. As such, the low end of his risk premium estimates (*i.e.,* between the 50th and 70th percentile) understate the Cost of Equity. If Mr. Walters believes the 50th percentile of his risk premium estimates is appropriate, then he should also use the 50th percentile of his bond yields to calculate the ROE.

Q. Have you updated Mr. Walters' Risk Premium analysis to incorporate projected A-rated and Baa-rated utility bond yields?

A. Yes, I have. *Blue Chip Financial Forecasts* dated July 1, 2022 (the source of Mr. Walters' 3.80 percent projected Treasury yield) publishes average near-term projected Aaa-rated and Baa-rated Corporate bond yields of 5.10 percent and 6.20 percent, respectively.[178] Applying Mr. Walters' 2022 utility to Corporate A/Aaa and Baa spreads of 0.45 percent, and -0.02 percent,[179] respectively, to the *Blue Chip Financial Forecast* estimates results in a projected A-rated utility bond yield of 5.55 percent, and a projected Baa-rated utility bond yield of 6.18 percent.[180] I note that the projected bond yields of 5.55 percent and 6.18 percent reflect the 32nd and 48th percentile of his

[178] Source: Blue Chip Financial Forecasts, Vol. 41, No. 7, July 1, 2022, at 2.
[179] *See* FEA Exhibit 1.13.
[180] Projected A-rated utility bond yield: 5.55% = 5.10% + 0.45%; projected Baa-rated utility bond yield: 6.18% = 6.20% - 0.02%.

historical utility bond yields and therefore are within the inverse of the percentile range of his utility bond yield risk premium estimates.

Q. What would Mr. Walters' Risk Premium-based ROE results be if his analysis was corrected to use projected utility bond yields and the correct Risk Premium estimates that align with his bond yields?

A. Although Mr. Walters' Risk Premium-based ROE recommendation is consistent with my Bond Yield Plus Risk Premium ROE estimates, the low end of his Risk Premium ROE results reflect assumptions that bias his results downward. Therefore, I recommend several adjustments to Mr. Walters' Risk Premium analyses to correct certain deficiencies, as explained above. First, because his projected Treasury bond yield and current utility bond yields are in the 25th to 30th percentile of his historical bond yields, they should only be combined with the high end (75th percentile) of his risk premium estimates (6.44 percent for his Treasury bond yield analysis and 5.33 percent for his utility bond yield analysis). Second, I also calculated projected utility bond yield estimates using Mr. Walters' data and conservatively applied those to the low end (50th percentile) of his utility bond yield risk premium estimates (4.24 percent). As shown in Figure 30 those adjustments produce a range of updated ROE estimates of 9.79 percent to 10.42 percent, as much as 62 basis points above his 9.80 percent Risk-Premium based ROE recommendation. The mean and median of the corrected results are 10.19 percent and 10.24 percent, respectively.

Figure 30: Mr. Walters' Corrected Risk Premium ROE Results

Risk Premium Model	Bond Yield	Risk Premium	ROE
Treasury Bond Yield	3.80%	6.44%	10.24%
Current A-Rated Utility	4.74%	5.33%	10.07%
Current Baa-Rated Utility	5.09%	5.33%	10.42%
Projected A-Rated Utility	5.55%	4.24%	9.79%
Projected Baa-Rated Utility	6.18%	4.24%	10.42%
		Mean	**10.19%**
		Median	**10.24%**

C. Application of the Capital Asset Pricing Model

Q. Please briefly summarize Mr. Walters' CAPM analysis and results.

A. Mr. Walters' CAPM analysis combines three estimates of the Market Risk Premium and three estimates of the Beta coefficient, along with his projected risk-free rate of 3.80 percent from *Blue Chip Financial Forecasts*, to calculate nine CAPM estimates, summarized in Figure 31 below.

Figure 31: Mr. Walters CAPM Results, As Filed[181]

Market Risk Premium Description	Current *Value Line* Beta (0.83)	Historical *Value Line* Beta (0.74)	S&P MI Beta (0.58)
Kroll (D&P) Normalized Method	8.08%	7.56%	6.71%
Risk Premium Method	10.55%	9.78%	8.53%
DCF Method	10.97%	10.15%	8.82%

[181] Direct Testimony & Exhibits of Christopher C. Walters, at 59, Table CCW-11; FEA Exhibit 1.16 page 1.

Based on his range of estimates, Mr. Walters concludes that a reasonable CAPM estimate is 9.40 percent.[182]

Q. What aspects of Mr. Walters' CAPM analyses do you agree with?

A. I agree with the use of *Value Line* Beta coefficients and the use of a projected 30-year Treasury yield as the risk-free rate. Additionally, although I believe *Value Line's* current Beta coefficients appropriately reflect the proxy group's higher risk in the current market environment, I have also considered a longer-term perspective of historical Beta coefficients. However, I disagree with Mr. Walters' Market Risk Premium estimates, and his use of MI Beta coefficients that use the Vasicek adjustment methodology. I also disagree with Mr. Walters' criticisms of the ECAPM analysis.

Q. Please summarize the Market Risk Premium estimates Mr. Walters applies in his CAPM analyses.

A. Mr. Walters' first CAPM analysis applies Kroll's 5.50 percent Market Risk Premium and 3.50 percent "normalized" risk-free rate (identical to Mr. Coleman's approach described earlier) with each of his three Beta coefficient estimates. His second approach calculates an expected market return by combining the historical average real market return of 9.20 percent over the 1926-2021 period as reported by Kroll,

[182] Direct Testimony & Exhibits of Christopher C. Walters, at 59.

combined with an expected inflation rate of 2.50 percent to calculate an expected market return of 11.93 percent. Subtracting his 3.80 percent projected risk-free rate results in a Market Risk Premium of 8.10 percent.[183]

Mr. Walters' third Market Risk Premium is similar to my forward-looking Constant Growth DCF-based approach that calculates the expected market return of the S&P 500 Index, however, he applies the FERC's methodology that excludes non-dividend paying companies and companies with growth rates less than zero or greater than 20.00 percent. He performs a second analysis using "all companies in the S&P 500 Index rather than just the dividend paying companies."[184] His analyses produce expected market returns of 12.29 percent for the analysis excluding non-dividend paying companies and 12.48 percent for the analysis including "all companies" Subtracting his 3.80 percent projected risk-free rate from these expected market return estimates results in Market Risk Premium estimates of 8.50 percent and 8.70 percent (rounded), with an average of 8.60 percent[185]

Q. What is your response regarding Kroll's 5.50 percent Market Risk Premium and "normalized" risk-free rate of 3.50 percent?

A. For the reasons explained in my response to Mr. Coleman, Kroll's estimates contradict financial theory and result in CAPM ROE estimates that are far removed from any

[183] Direct Testimony & Exhibits of Christopher C. Walters, at 53.
[184] Direct Testimony & Exhibits of Christopher C. Walters, at 54.
[185] Direct Testimony & Exhibits of Christopher C. Walters, at 54-55; FEA Exhibit 1.16, page 2.

reasonable estimate of DEU's Cost of Equity and should be rejected. However, it seems Mr. Walters agrees as it does not appear he gave the three CAPM estimates using Kroll's 9.00 percent market return (ranging from 6.71 percent to 8.08 percent) any weight in determining his 9.40 percent CAPM-based ROE estimate.

Q. What are your concerns with Mr. Walters' Market Risk Premium estimates using the DCF methodology?

A. I respectfully disagree with Mr. Walters' approach as it is internally consistent and does not fully reflect the expected market return as a whole.

The purpose of the analysis is to estimate the return investors expect for the *market as a whole*, including high and low-growth companies, not to estimate the aggregate return for companies that pay dividends or those that Mr. Walters believes have proper growth rates. At any point in time, the market as a whole includes companies that are both dividend and non-dividend paying, as well as those with negative and positive growth, even companies with very high or very low growth. Excluding companies because they are non-dividend paying, or because the expected growth rates do not meet arbitrary thresholds, results in an estimate of a *subset* of the market, not the market *as a whole*. A good analogy is an investment in a mutual fund or Exchange Traded Fund that track the S&P 500 Index. Every dollar invested in these funds is invested in *all* companies in the S&P 500 Index; the investor cannot not pick and choose only dividend-paying companies, or only companies with growth rates she deems "sustainable."

Further, excluding companies that are believed to be unreasonable creates an internal inconsistency in the CAPM. A fundamental assumption of the CAPM is that the required return is proportional to the risk of the investment. Under the CAPM, the Beta coefficient is the measure of risk, and is calculated by comparing the subject security's returns to the overall market returns. Because the Beta coefficient is calculated relative to the overall market (*e.g.*, the S&P 500 Index or the New York Stock Exchange), it is important that the expected market return also reflect the overall market. Therefore, it is inconsistent to combine Beta coefficients calculated relative to the entire market with a Market Risk Premium estimate calculated using only a subset of the market. Consequently, any credible estimate of the expected return on the market as a whole must include all companies.

Q. Please explain further why excluding non-dividend paying companies does not fully reflect the expected market return.

A. According to Mr. Walters' workpapers, there are 118 companies in the S&P 500 Index that do not currently pay dividends, including some of the largest companies in the index in terms of market capitalization. Alphabet Inc. (the parent of Google), Amazon, Boeing, Disney, Facebook, Ford Motor Company, General Motors, PayPal, Tesla, and Netflix are among the 118 companies that are excluded from the analysis for not paying dividends. Because the approach calculates a market capitalization-weighted estimate of the market return, excluding these companies removes approximately $11.9 trillion (approximately 30 percent) from the total market

capitalization, skewing the analysis. In my opinion, it is not reasonable exclude 30 percent of the market in calculating an expected market return that is meant to reflect the entire market.

Q. Does Mr. Walters' DCF methodology using "all companies" alleviate your concern?

A. No, it does not. Although Mr. Walters asserts that his second DCF approach includes "all companies", it only adds back the non-dividend paying companies. He still excludes companies with negative growth rates or growth rates greater than 20.00 percent, including Amazon, AT&T, Boeing, Chevron, Exxon Mobil, General Electric, Mastercard, Tesla, and several of the largest airline companies. In total, excluding companies whose growth rates do not meet arbitrary growth rate thresholds removes approximately $9.7 trillion (or approximately 25 percent) of the total market capitalization of the S&P 500 Index. As with the exclusion of non-dividend paying companies, I do not believe it is reasonable or appropriate to skew the expected market return estimate based on arbitrary growth rate thresholds.

Q. Mr. Walters suggests your expected market return is "inflated" because expected individual growth rates of certain companies exceed his measure of long-term sustainable growth.[186] What is your response?

A. I disagree. Determining whether a company's individual growth rate is "sustainable" highly subjective and introduces bias in the analysis. Mr. Walters' criticism focuses on individual company growth rates he deems as "too high"; however, he fails to acknowledge that my expected market return estimates also include growth rates that could be considered unsustainably low. The expected return on the market as calculated in DEU Exhibit 2.04 includes 44 growth rates equal to or lower than Mr. Walters' 2.50 percent inflation estimate (implying negative real growth). Twenty-seven of those are negative growth rates. That is, the analysis includes both high and low growth rates, and is not biased toward only high growth rates. In other words, by not attempting to evaluate the sustainability of each of the 500 individual companies' growth rate as Mr. Walters does, I do not introduce bias into my expected market return analysis. More importantly, and as noted earlier, a proper market return estimate must include all companies in the analysis to avoid internal inconsistencies.

[186] Direct Testimony & Exhibits of Christopher C. Walters, at 61.

Q. What is your response to Mr. Walters' reference to professional investor forecasts that indicate expected market returns range from 1.90 percent to 7.40 percent?[187]

A. I have several concerns with his references. First, Mr. Walters' 9.40 percent ROE estimate is entirely at odds with the data he presents. In this instance, Mr. Walters' refers to the market return forecasts summarized in Figure 32, below.

Figure 32: Summary of Mr. Walters' Market Return Forecast References[188]

Institution	Term (Yrs.)	Market Return Forecast
BlackRock Capital Management	30	7.40%
JP Morgan Asset Management	10 - 15	4.10%
Vanguard	10	2.30% – 4.30%
Research Affiliates	10	1.90% - 5.20%

According to these investment firms, the expected market return ranges from 1.90 percent to 7.40 percent for U.S. equities. Mr. Walters, however, estimates an ROE of 9.40 percent for a utility that is less risky than the overall market, as measured by the Beta coefficient. Consequently, if Mr. Walters believes these expected returns were meaningful measures of investor-required returns, his CAPM ROE recommendation would range between 2.70 percent and 6.79 percent. These estimates simply have no meaningful value in determining DEU's Cost of Equity.

[187] Direct Testimony & Exhibits of Christopher C. Walters, at 56.
[188] Direct Testimony & Exhibits of Christopher C. Walters, Table CCW-10, at 56.

Q. Please summarize the three Beta coefficient estimates Mr. Walters applies in his CAPM analysis.

A. Mr. Walters reviews the average adjusted Beta coefficient for his proxy group from three sources: (1) *Value Line's* current Beta coefficient (0.83), (2) *Value Line's* average historical Beta coefficient since Q3 2014 (0.74), and (3) average Vasicek-adjusted Beta coefficient from S&P Global Market Intelligence ("MI") (0.58). In Mr. Walters's view, *Value Line's* current Beta coefficients are "abnormally high and are unlikely to be sustained over the long-term" necessitating the use of the two alternative Beta coefficients.[189]

Q. What are your concerns with Mr. Walters' MI Beta coefficient estimates that apply the Vasicek adjustment rather than the Blume adjustment?

A. While I agree MI is a reliable source of utility financial and rate case data, I disagree with Mr. Walters' position that Beta coefficients calculated using the Vasicek adjustment are "superior" to those calculated using the Blume adjustment. Simply, the conclusion as to which approach is "superior" remains open to debate and there is no consensus on that issue. As Duff & Phelps explains, "[w]hether betas tend to move toward market averages or industry averages over time is an issue open to debate."[190] Moreover, if there was consensus in the financial community that the Vasicek

[189] Direct Testimony & Exhibits of Christopher C. Walters, at 51.
[190] Duff & Phelps 2020 Valuation Handbook, p. 5-9

adjustment methodology was "superior" to the Blume adjustment methodology, it would be more widely adopted by well-known investor data resources, such as *Value Line* and Bloomberg. However, that is not the case. In my experience, the vast majority of the Beta coefficients used in regulatory proceedings by ROE witnesses employ the Blume adjustment methodology.

Moreover, as discussed below, the Vasicek adjustment methodology is more susceptible subjective judgment than are the Beta coefficients independently reported by *Value Line* and Bloomberg that use the Blume adjustment methodology.

Q. What issues did your review of Mr. Walters' MI Beta coefficient workpaper raise?

A. As with any methodology of calculating the Beta coefficient, the reasonableness of the estimate depends greatly on the inputs and assumptions underlying the methodology. I reviewed Mr. Walters' MI Beta Coefficient workpaper[191] that contains the backup support from S&P's Beta Generator model and found two primary concerns. The first concern is that on the major holidays in which the stock market was closed (*e.g.*, Good Friday, Christmas, Independence Day), Mr. Walters' workpaper lists an "NA" for the proxy companies' stock prices but lists a stock price for the S&P 500 Index. This results in several data points over the five-year period in which the weekly return for the proxy companies is calculated as 0 percent, but a non-

[191] Mr. Walters' workpaper "CCW Confidential WP 16.xlsm".

zero weekly return is calculated for the S&P 500. Because the Beta coefficient is based on the relative standard deviation and correlation between the proxy company and the S&P 500, a weekly return of 0 percent for the subject company may skew the results downward. The current version of S&P's Beta Generator model[192] shows that it includes prices for the proxy companies on the holidays rather than "NA", allowing it to properly calculate weekly returns for those dates. As shown in Figure 33 below, the average Beta coefficients from MI applying the same inputs as Mr. Walters are approximately 12 basis points higher than his Beta coefficients as filed. While I believe the corrected MI Beta coefficients remain too low in the current market, they are closer to Mr. Walters' longer term historical Betas.

Figure 33: Corrected MI Beta Coefficients[193]

Proxy Company	Ticker	Mr. Walters' MI Beta (As Filed)	Corrected MI Beta (accessed 9/14/2022)
Atmos Energy Corporation	ATO	0.58	0.68
New Jersey Resources Corporation	NJR	0.61	0.72
NiSource Inc.	NI	0.60	0.73
Northwest Natural Holding Company	NWN	0.53	0.65
ONE Gas, Inc.	OGS	0.60	0.71
Spire Inc.	SR	0.59	0.69
Average		**0.58**	**0.70**

[192] Source: S&P Capital IQ Pro, downloaded September 14, 2022. It's possible that Mr. Walters is working with an older version of S&P's Beta Generator model.
[193] DEU Exhibit 2.26R.

The second issue relates to the sample group of comparable companies used in the Vasicek adjustment methodology. S&P's Beta Generator model allows the analyst to select any comparable group, up to nine companies. Mr. Walters included the six natural gas utilities in his and my proxy group. As S&P notes, the Vasicek adjustment "adjusts the raw beta via weights determined by the variance of the individual security versus the variance of a larger sample of comparable companies."[194] Because S&P's Beta generator model allows the analyst to select the sample group, the size and makeup of the chosen sample group is highly subjective and could substantially affect the results. In my opinion, S&P's Beta Generator model – and the Vasicek adjustment generally – is susceptible to debate over the proper size and selection of the comparable group used in the adjustment. Adjusted Beta coefficients from *Value Line* and Bloomberg, however, are independently reported and easily verifiable; therefore, they are not exposed to these criticisms.

Q. Please summarize Mr. Walters' concerns with your ECAPM analysis.

A. Mr. Walters' principal concern with my ECAPM analysis is the use of adjusted Beta coefficients such as those published by *Value Line* and Bloomberg.[195]

[194] Direct Testimony & Exhibits of Christopher C. Walters, at 52.
[195] Direct Testimony & Exhibits of Christopher C. Walters, at 71-74.

Q. Does academic research support the use of adjusted Beta coefficients in the ECAPM?

A. Yes, it does. For background, the Blume adjustment corrects raw Beta coefficients to reflect their general regression tendency to converge toward 1.00 over time, *i.e.*, over successive calculations. As explained in my Rebuttal Testimony, the Security Market Line described by the CAPM formula is not as steeply sloped as predicted, an effect not addressed by the "Blume" adjustment.[196] As Dr. Morin states:

> Some have argued that the use of the ECAPM is inconsistent with the use of adjusted betas, such as those supplied by Value Line and Bloomberg. This is because the reason for using the ECAPM is to allow for the tendency of betas to regress toward the mean value of 1.00 over time, and, since Value Line betas are already adjusted for such trend, an ECAPM analysis results in double-counting. This argument is erroneous. Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. The ECAPM and the use of adjusted betas comprised two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary. [197]

In a 2011 study by Stéphane Chrétien and Frank Coggins, the authors studied the CAPM's ability to estimate the risk premium for the utility industry in particular

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[196] *See*, Direct Testimony of Jennifer E. Nelson, at 27. The Security Market Line is represented in Figure 7.
[197] Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 191. (emphasis added)

subgroups of utilities, including a group of U.S. natural gas utilities.[198] The study considered the traditional CAPM approach, the Fama-French three-factor model, and a model similar to the ECAPM. In the study, the ECAPM relied on adjusted Beta coefficients similar to the approach applied by *Value Line*. As Chrétien and Coggins found, the ECAPM significantly outperformed the traditional CAPM model at predicting the observed risk premium for the various utility subgroups. Their model showed that the CAPM underestimated the risk premium for U.S. natural gas distribution utilities by as much as 7.39 percent and was statistically significant.

Consequently, Mr. Walters' criticisms of the ECAPM are without merit and should be rejected.

Q. Mr. Walters points to an Order from the Illinois Commerce Commission to suggest that the ECAPM is not an accepted methodology.[199] Is the ECAPM an accepted methodology?

A. Yes, it is. First, I note that Mr. Lawton also performs an ECAPM analyses in this proceeding. Further, I am aware that the ECAPM (sometimes referred to as the "Zero Beta CAPM") has been accepted by regulatory commissions in Alaska, Maryland, Mississippi, New York, and North Carolina.[200] Additionally, I am aware the ECAPM

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[198] Stéphane Chrétien and Frank Coggins, *Cost of Equity for Energy Utilities: Beyond The CAPM*, Energy Studies Review, Vol. 18, No. 2 (2011).
[199] Direct Testimony & Exhibits of Christopher C. Walters, at 74.
[200] *See,* Regulatory Commission of Alaska, Docket No. P-97-4, Order No. 151, at 146; Maryland Public Service

has been presented by state regulatory commission staff in Maryland, Nevada, and by the Department of Commerce in Minnesota.[201] Consequently, I believe the ECAPM is an accepted approach and should be considered by the Commission.

Q. What would Mr. Walters' CAPM-based ROE results be with the adjustments you recommend?

A. As discussed above, I suggest the following adjustments to Mr. Walters' CAPM analyses. First, Mr. Walters' CAPM results using Kroll's "normalized" Market Risk Premium and risk-free rate should be rejected. Second, although I disagree with the use of Vasicek-adjusted Beta coefficients, Mr. Walters' corrected proxy group average adjusted Beta coefficients from S&P's Beta Generator model is 0.70. Lastly, although Mr. Walters' DCF-based expected market return produces CAPM results within my recommended ROE range (with his corrected MI Beta coefficient), I also recommend his DCF-based expected market return be adjusted to include all companies, including

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Commission, Case No. 9311, Order No. 85724, at 105; Mississippi Public Service Commission, Docket No. 01-UN-0548, *Notice of Intent of Mississippi Power Company to Change Rates for Electric Service in its Certificated Areas in the Twenty-Three Counties of Southeast Mississippi*, Final Order, December 3, 2001, at 19; New York Public Service Commission, Case 16-G-0058, P*roceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of KeySpan Gas East Corporation d/b/a National Grid for Gas Service*, Order Adopting Terms of Joint Proposal and Establishing Gas Rate Plans, December 16, 2016, at 32; *In the Matter of Application of Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina for Adjustment of Rates and Charges Applicable to Electric Service in North Carolina*, Docket No. E-22, Sub 562 Order Accepting Public Staff Stipulation in Part, Accepting CIGFUR Stipulation, Deciding Contested Issues, and Granting Partial Rate Increase, February 24, 2020, at 40.

[201] *See,* Maryland Public Service Commission, Case No. 9311, Order No. 85724, at 88; Minnesota Public Utilities Commission, MPUC Docket No. G011/GR-15-736, *Findings of Fact, Conclusions of Law, and Recommendation*, August 19, 2016, at 29; Public Utilities Commission of Nevada, Docket No. 12-02019, Second Modified Final Order, at 36.

non-dividend paying companies, and all growth rates. Correcting these deficiencies produces CAPM-based ROE results ranging from 9.45 percent to 12.72 percent, summarized in Figure 34 below. Mr. Walters' mean and median CAPM-based ROE results with my adjustments are 10.71 percent and 10.55 percent, respectively; with an average of 10.63 percent.

Figure 34: Mr. Walters CAPM Results[202]

Market Risk Premium Description	**Current *Value Line* Beta (0.83)**	**Historical *Value Line* Beta (0.74)**	**S&P MI Beta (0.70)**
Risk Premium Derived	10.55%	9.78%	9.45%
FERC S&P 500 DCF Method (as filed)	10.97%	10.15%	9.80%
S&P 500 DCF Method – ALL companies	12.72%	11.70%	11.26%
Mean	**10.71%**		
Median	**10.55%**		
Average of Mean and Median	**10.63%**		

D. Summary of Mr. Walters' Corrected ROE Results

Q. Please summarize Mr. Walters' corrected ROE analyses with the adjustments you recommend.

A. As shown in Figure 35 below, sensible adjustments to Mr. Walters' ROE analyses produce ROE results ranging 9.23 percent to 10.63 percent, as much as 120 basis points above his 9.40 percent recommendation.

[202] DEU Exhibit 2.27R.

Figure 35: Summary of Mr. Walters' Corrected ROE Results

ROE Methodology	Range	Average of Mean and Median ROE Estimate
Constant Growth DCF (Analysts' Growth)	9.14% - 9.31%	9.23%
Risk Premium	9.79% - 10.42%	10.22%
CAPM	9.45% - 12.72%	10.63%
Mean	**10.02%**	
Median	**10.22%**	
Average of Mean and Median	**10.12%**	

VIII. SUMMARY OF UPDATED ROE ANALYTICAL RESULTS

Q. Have you updated the ROE and capital structure analyses contained in your Direct Testimony?

A. Yes. I have updated the Constant Growth DCF, Quarterly Growth DCF, CAPM, ECAPM, Bond Yield Risk Premium, and capital structure analyses based on data through August 31, 2022, and applied them to the same proxy group of companies filed in my Direct Testimony. Because the Bloomberg and Value Line DCF-based expected market return estimates are closer to the long-term average historical market return and both are below the expected market return estimates filed in my Direct Testimony, I have reverted to my usual practice of averaging the two together to calculate the expected market return. Figure 36 below summarizes my updated results.

Figure 36: Updated ROE Results[203]

Constant Growth DCF	**Low**	**Mean**	**High**
30-Day Average	8.50%	9.53%	10.76%
90-Day Average	8.52%	9.55%	10.79%
180-Day Average	8.62%	9.66%	10.85%
Quarterly Growth DCF	**Low**	**Mean**	**High**
30-Day Average	8.69%	9.75%	11.01%
90-Day Average	8.71%	9.77%	11.03%
180-Day Average	8.82%	9.89%	11.11%
CAPM		**Current 30-Year Treasury Yield (3.11%)**	**Projected 30-Year Treasury Yield (3.66%)**
Long-Term Historical Average Market Return and 10-year Beta Coefficients			
Proxy Group Average		10.29%	10.41%
Proxy Group Median		10.30%	10.42%
DCF-based Expected Market Return and Value Line Beta Coefficients			
Proxy Group Average		11.51%	11.60%
Proxy Group Median		11.18%	11.29%
Empirical CAPM		**Current 30-Year Treasury Yield (3.11%)**	**Projected 30-Year Treasury Yield (3.66%)**
Long-Term Historical Average Market Return and 10-year Beta Coefficients			
Proxy Group Average		10.80%	10.89%
Proxy Group Median		10.81%	10.90%
DCF-based Expected Market Return and Value Line Beta Coefficients			
Proxy Group Average		11.93%	12.00%
Proxy Group Median		11.68%	11.76%
Bond Yield Plus Risk Premium			
Current 30-Year Treasury Yield (3.11%)		9.75%	
Projected 30-Year Treasury Yield (3.66%)		9.88%	

As shown in Figure 36 above, my recommended ROE range of 9.60 percent to 10.75 percent remains supported by the updated results. The low end of my range is supported by the mean DCF and Bond Yield Plus Risk Premium results and the high end of my range is supported by the high end of the DCF results and the CAPM and ECAPM results. My recommended ROE of 10.30 percent is consistent with the average of all results shown in Figure 36 above (10.36 percent), and is below the median of 10.59 percent. With respect to the Company's capital structure, as DEU Exhibit 2.17R shows, the Company's capital structure remains consistent with, yet more leveraged than, the proxy group on average, further supporting an increase in the authorized ROE.

IX. CONCLUSIONS

Q. What is your conclusion regarding the ROE, capital structure, and cost of debt for DEU?

A. Based on the analyses discussed throughout my Direct and Rebuttal Testimony, I continue to believe the reasonable range of ROE estimates is from 9.60 percent to 10.75 percent, and within that range, 10.30 percent is a reasonable and appropriate estimate of the Company's Cost of Equity. The results of my updated results shown in Figure 36 above, combined with my analyses of capital market data and the analyses

[203] DEU Exhibit 2.12R to DEU Exhibit 2.16R

presented in response to the Opposing Witnesses, continue to support the reasonableness of my range of ROE estimates and my recommendation.

As to the capital structure and cost of debt, a capital structure including 53.21 percent common equity and 46.79 percent long-term debt remains consistent with the capital structures in that fund the regulated natural gas operations of the proxy companies. Therefore, I conclude the capital structure and cost of debt are reasonable and should be approved.

Q. Does this conclude your Rebuttal Testimony?

A. Yes, it does.

Commonwealth of Massachusetts)

) ss.

County of Worcester)

I, Jennifer E. Nelson, being first duly sworn on oath, state that the answers in the foregoing written testimony are true and correct to the best of my knowledge, information, and belief. The exhibits attached to the testimony were prepared by me or under my direction and supervision, and they are true and correct to the best of my knowledge, information, and belief. Any exhibits not prepared by me or under my direction and supervision are true and correct copies of the documents they purport to be.

Jennifer E. Nelson

SUBSCRIBED AND SWORN TO this 20th day of September, 2022.

Notary Public

ANDREW S. NELSON
Notary Public
Commonwealth of Massachusetts
My Commission Expires
April 21, 2028