

STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Docket No. DG 23-067

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty
Distribution Service Rate Case
Cost of Capital

DIRECT TESTIMONY

OF

ANN E. BULKLEY

AND

CHRISTOPHER M. WALL

The Brattle Group

July 27, 2023



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I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your names and business addresses.

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

A. My name is Christopher M. Wall. I am a Senior Associate of The Brattle Group, located at One Beacon Street, Suite 2600, Boston, Massachusetts, 02108.

Q. On whose behalf are you submitting this direct testimony?

A. We are submitting this direct testimony before the New Hampshire Public Utilities Commission (“Commission”) on behalf of Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty (“Liberty EnergyNorth” or the “Company”).

Q. Ms. Bulkley, please describe your education and experience.

A. I hold a Bachelor’s degree in Economics and Finance from Simmons College and a Master’s degree in Economics from Boston University, with over 25 years of experience consulting to the energy industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. My resume and a listing of the testimony that I have filed in other proceedings are included in Attachment AEB/CMW-1.

1 **Q. Mr. Wall, please describe your education and experience.**

2 A. I hold a Bachelor's degree in Mathematics and Economics from Saint Peter's College,
3 where I graduated Summa Cum Laude, and a Master's degree in Economics from
4 Northeastern University. I have more than ten years of experience consulting in the
5 energy industry; I have been involved with a variety of projects, mostly involving cost of
6 capital, cost of service, demand forecasting, and rate design for natural gas, water, and
7 electric utilities in North America. Many of my assignments over the past few years have
8 focused on the determination of the cost of capital for ratemaking purposes. My resume
9 and a listing of the testimony I have filed in other proceedings are also included in
10 Attachment AEB/CMW-1.

11 **II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY**

12 **Q. Please describe the purpose of your direct testimony.**

13 A. The purpose of our direct testimony is to present evidence and provide a recommendation
14 regarding the appropriate return on equity ("ROE") to be used for ratemaking purposes
15 for the Company in this proceeding. Our testimony also reviews the appropriateness of
16 the Company's proposed capital structure, which is composed of 55.00 percent common
17 equity and 45.00 percent long-term debt.

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

19 A. Yes. Our analysis and recommendations are supported by the data presented in
20 Attachments AEB/CMW-2 through AEB/CMW-16, which have been prepared by us or
21 under our direction.

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

3 A. We have estimated the Company's cost of equity by applying several traditional
4 estimation methodologies to a proxy group of comparable utilities, including the
5 Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the
6 Empirical Capital Asset Pricing Model ("ECAPM"), and a Bond Yield Risk Premium
7 ("BYRP" or "Risk Premium"). Our recommendation also takes into consideration the
8 following factors: (1) the Company's capital expenditure requirements; (2) the regulatory
9 environment in which the Company operates; (3) the Company's automatic rate
10 adjustment mechanisms; (4) the Company's small size relative to the proxy group
11 companies;¹ (5) flotation costs; and (6) the Company's proposed capital structure as
12 compared to the capital structures of the proxy group companies. While we did not make
13 specific adjustments to our ROE recommendation for these factors, we did consider them
14 in the aggregate when determining where our recommended ROE falls within the range
15 of the analytical results.

16 **Q. How is the remainder of your direct testimony organized?**

17 A. The remainder of our direct testimony is organized as follows:

- 18
- Section III provides a summary of our analyses and conclusions.

¹ The selection and purpose of developing a group of comparable companies will be discussed in detail in Section VI of our Direct Testimony.

- Section IV reviews the regulatory guidelines pertinent to the development of the cost of capital.
- Section V discusses current and projected capital market conditions and the effect of those conditions on the Company's cost of equity.
- Section VI explains our selection of a proxy group of natural gas utilities.
- Section VII describes our analyses and the analytical basis for our recommendation of the appropriate ROE for Liberty EnergyNorth.
- Section VIII provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for Liberty EnergyNorth in this case.
- Section IX assesses the Company's proposed capital structure.
- Section X presents our conclusions and recommendations.

III. SUMMARY OF ANALYSES AND CONCLUSIONS

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

A. The key factors that we considered in our cost of equity analyses and recommended ROE for the Company in this proceeding are:

- The United States Supreme Court's *Hope* and *Bluefield* decisions² established the standards for determining a fair and reasonable authorized ROE for public

²*Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("*Hope*"); *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) ("*Bluefield*").

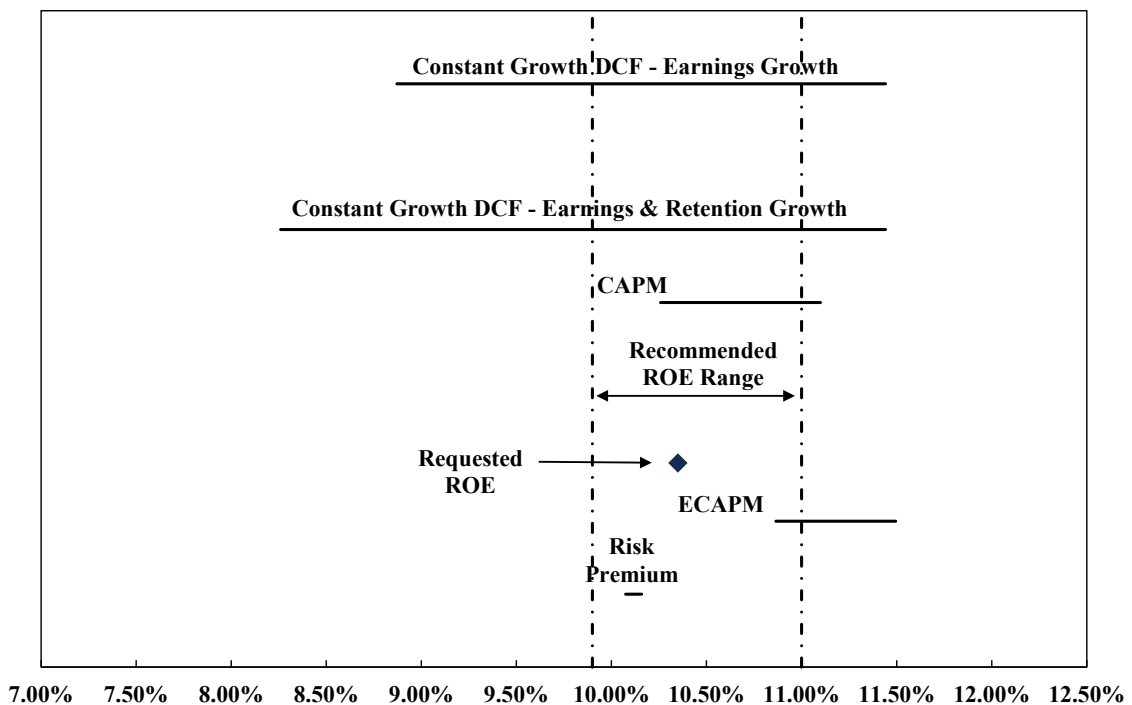
1 utilities, including consistency of the allowed return with the returns of other
2 businesses having similar risk, adequacy of the return to provide access to capital
3 and support credit quality, and the requirement that the result lead to just and
4 reasonable rates.

- 5 • The effect of current and prospective capital market conditions on the cost of
6 equity estimation models and on investors' return requirements.
- 7 • The results of several analytical approaches that provide estimates of the
8 Company's cost of equity. Because the Company's authorized ROE should be a
9 forward-looking estimate over the period during which the rates will be in effect,
10 these analyses rely on forward-looking inputs and assumptions (*e.g.*, projected
11 analyst growth rates in the DCF model, forecasted risk-free rate and market risk
12 premium in the CAPM analysis).
- 13 • Although the companies in our proxy group are generally comparable to Liberty
14 EnergyNorth, each company is unique, and no two companies have the exact
15 same business and financial risk profiles. Accordingly, we consider the
16 Company's regulatory, business, and financial risks relative to the proxy group of
17 comparable companies in determining where the Company's ROE should fall
18 within the reasonable range of analytical results to appropriately account for any
19 residual differences in risk.

Q. What are the results of the models that you have used to estimate the cost of equity for Liberty EnergyNorth?

A. Figure 1 summarizes the range of results produced by the DCF, CAPM, ECAPM, and Risk Premium analyses based on data through the end of June 2023.

Figure 1. Summary of Cost of Equity Analytical Results



As shown in Figure 1 (and in Attachment AEB/CMW-2), the range of results produced by the models used to estimate the cost of equity is wide. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results varies considerably across methodologies.

1 **Q. Are prospective capital market conditions expected to affect the results of the cost of**
2 **equity for the Company during the period in which the rates established in this**
3 **proceeding will be in effect?**

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

- 6 • Inflation is expected to persist over the near term, which increases the operating
7 risk of the utility during the period in which rates will be in effect.
- 8 • Long-term interest rates have increased substantially in the past year and are
9 expected to remain elevated at least over the next year in response to inflation.
- 10 • Since utility dividend yields are now less attractive than the risk-free rates of
11 government bonds, and interest rates are expected to remain near current levels
12 over the next year, it is likely that utility share prices will decline.
- 13 • Rating agencies have responded to the risks of the utility sector, with Moody's
14 Investors Service ("Moody's") most recently indicating its outlook for the
15 industry in 2023 is "negative," citing factors such as interest rates and inflation
16 that create pressure for customer affordability and prompt rate recovery.
- 17 • Similarly, equity analysts have noted the increased risk for the utility sector as a
18 result of rising interest rates and expect the sector to underperform over the near
19 term.
- 20 • Consequently, the results of the DCF model, which relies on current utility share
21 prices, are likely to understate the cost of equity during the period that the
22 Company's rates will be in effect.

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

3 **Q. What is your conclusion regarding the appropriate authorized ROE for Liberty**
4 **EnergyNorth in this proceeding?**

5 A. Considering the analytical results presented in Figure 1, current and prospective capital
6 market conditions, as well as the level of regulatory, business, and financial risk faced by
7 the Company's natural gas operations in New Hampshire relative to the proxy group, we
8 recommend a range from 9.90 percent to 11.00 percent for the Company's ROE, and
9 within that range, recommend an ROE of 10.35 percent.

10 **Q. Is Liberty EnergyNorth's requested capital structure reasonable and appropriate?**

11 A. Yes. The Company's proposed equity ratio of 55.00 percent is within the range of equity
12 ratios for the proxy group. Further, the Company's proposed equity ratio is reasonable
13 considering credit rating agencies' concerns regarding the negative effect on the cash
14 flows and credit metrics associated with increasing interest rates, inflation, and
15 commodity costs, and the pressure that those factors place on customer affordability and
16 utilities' prompt rate recovery.

17 **IV. REGULATORY PRINCIPLES**

18 **Q. Please describe the guiding principles to be used in establishing the cost of capital**
19 **for a regulated utility.**

20 A. The U.S. Supreme Court's precedent-setting *Hope* and *Bluefield* cases established the
21 standards for determining the fairness or reasonableness of a utility's authorized ROE.

1 Among the standards established by the Court in those cases are: (1) consistency with
2 other businesses having similar or comparable risks; (2) adequacy of the return to support
3 credit quality and access to capital; and (3) that the end result, as opposed to the
4 methodology employed, is the controlling factor in arriving at just and reasonable rates.³

5 **Q. Has the Commission provided similar guidance in establishing the appropriate**
6 **ROE?**

7 A. Yes, it has. In its decision in Docket No. DG 08-009, the Commission stated that it
8 adheres to the capital attraction standard discussed in *Hope* and *Bluefield* decisions.⁴
9 Additionally, the Commission noted that it is:

10 [B]ound to set a rate of return that falls within a zone of reasonableness,
11 neither so low to result in a confiscation of company property, nor so high
12 as to result in extortionate charges to customers. A rate falling within that
13 zone should, at a minimum, be sufficient to yield the cost of debt and equity
14 capital necessary to provide the assets required for the discharge of the
15 company's responsibility.⁵

16 This guidance is in accordance with our view that an allowed rate of return must be
17 sufficient to enable regulated companies, like Liberty EnergyNorth, the ability to attract
18 capital on reasonable terms.

³ *Bluefield*, 262 U.S. at 692-93; *Hope*, 320 U.S. at 603.

⁴ New Hampshire Public Utilities Commission, Docket No. DG 08-009, Order No. 24,972, May 29, 2009, at 54-55.

⁵ *Id.*, at 54. *See also*, Appeal of Conservation Law Foundation, 127 N.H. 606, 635 (1986).

1 **Q. Is fixing a fair rate of return just about protecting the utility’s interests?**

2 A. No. As the court noted in *Bluefield*, a proper rate of return not only assures “confidence
3 in the financial soundness of the utility and should be adequate, under efficient and
4 economical management, to maintain and support its credit [but also] enable[s the utility]
5 to raise the money necessary for the proper discharge of its public duties.”⁶ As the Court
6 went on to explain in *Hope*, “[t]he rate-making process ... involves balancing of the
7 investor and consumer interests.”⁷

8 **Q. Why is it important for a utility to be allowed the opportunity to earn an ROE that**
9 **is adequate to attract capital at reasonable terms?**

10 A. A return that is adequate to attract capital at reasonable terms enables the utility to
11 continue to provide safe, reliable natural gas service while maintaining its financial
12 integrity. That return should be commensurate with returns required by investors
13 elsewhere in the market for investments of comparable risk. If it is not, debt and equity
14 investors will seek alternative investment opportunities for which the expected return
15 reflects the perceived risks, thereby inhibiting the Company’s ability to attract capital at a
16 reasonable cost.

⁶ *Bluefield*, 262 U.S. at 679, 693.

⁷ *Hope*, 320 U.S. at 591, 603.

1 **Q. Is a utility's ability to attract capital also affected by the ROEs authorized for other**
2 **utilities?**

3 A. Yes. Utilities compete directly for capital with other investments of similar risk, which
4 include other utilities. Therefore, the ROE authorized for a utility sends an important
5 signal to investors regarding whether there is regulatory support for financial integrity,
6 dividends, growth, and fair compensation for business and financial risk. The cost of
7 capital represents an opportunity cost to investors. If higher returns are available for
8 other investments of comparable risk, over the same period, investors have an incentive
9 to direct their capital to those alternative investments. Thus, an ROE authorized for a
10 utility that is significantly below the authorized ROEs for other utilities can inhibit that
11 utility's ability to attract capital for investment.

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

14 A. Yes. The regulatory framework is one of the most important factors in debt and equity
15 investors' assessments of risk. Specifically, regarding debt investors, credit rating
16 agencies consider the authorized ROE and equity ratio for regulated utilities to be very
17 important for two reasons: (1) they help determine the cash flows and credit metrics of
18 the regulated utility; and (2) they indicate the degree of regulatory support for credit
19 quality in the jurisdiction. To the extent that the authorized returns in a jurisdiction are
20 lower than the returns that have been authorized more broadly, credit rating agencies will
21 consider this in the overall risk assessment of the regulatory jurisdiction in which the
22 company operates. Not only do credit ratings affect the overall cost of borrowing, but

1 they also act as a signal to equity investors about the risk of investing in the equity of a
2 company.

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

5 A. The ratemaking process is premised on the principle that, for investors and companies to
6 commit the capital needed to provide safe and reliable utility services, a utility must have
7 a reasonable opportunity to recover the return of, and the market-required return on, its
8 invested capital. Accordingly, the Commission's order in this proceeding should
9 establish rates that provide the Company with a reasonable opportunity to earn an ROE
10 that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure its
11 financial integrity; and (3) commensurate with returns on investments in enterprises with
12 similar risk. It is important for the ROE authorized in this proceeding to take into
13 consideration current and projected capital market conditions, as well as investors'
14 expectations and requirements for both risks and returns. Because utility operations are
15 capital-intensive, regulatory decisions should enable the utility to attract capital at
16 reasonable terms under a variety of economic and financial market conditions. Providing
17 the opportunity to earn a market-based cost of capital supports the financial integrity of
18 the Company, which is in the interest of both customers and shareholders.

1 **V. CAPITAL MARKET CONDITIONS**

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

3 A. The models used to estimate the cost of equity rely on market data that are specific either
4 to the proxy group, in the case of the DCF model, or to the expectations of market risk, in
5 the case of the CAPM. The results of the cost of equity estimation models can be
6 affected by prevailing market conditions at the time the analysis is performed. While the
7 ROE established in a rate proceeding is intended to be forward-looking, the analyst uses
8 current and projected market data, specifically stock prices, dividends, growth rates, and
9 interest rates, in the cost of equity estimation models to estimate the investor-required
10 return for the subject company.

11 As a result, it is important to consider the effect of the market conditions on these models
12 when determining an appropriate range for the ROE and the recommended ROE for
13 ratemaking purposes for a future period. If investors do not expect current market
14 conditions to be sustained in the future, it is possible that the cost of equity estimation
15 models will not provide an accurate estimate of investors' required return during that rate
16 period. Therefore, it is very important to consider projected market data to estimate the
17 return for that forward-looking period.

18 **Q. What factors are affecting the cost of equity for regulated utilities in the current and**
19 **prospective capital markets?**

20 A. The cost of equity for regulated utility companies is being affected by several factors in
21 the current and prospective capital markets, including: (1) changes in monetary policy;

1 (2) relatively high inflation; and (3) increased interest rates that are expected to remain
2 relatively high over the next few years. These factors affect the assumptions used in the
3 cost of equity estimation models.

4 **Q. What effect do current and prospective market conditions have on the cost of equity**
5 **for Liberty EnergyNorth?**

6 A. As is discussed in more detail in the remainder of this section, the combination of
7 persistently high inflation and the Federal Reserve's changes in monetary policy
8 contribute to an expectation of increased market risk and an increase in the cost of the
9 investor-required return. These factors must be considered in setting a forward-looking
10 ROE. Inflation has recently been at some of the highest levels seen in approximately 40
11 years, and while inflation has declined from these recent peaks, core inflation remains
12 relatively high. Interest rates, which have increased from the pandemic lows seen in
13 2020 in direct response to the Federal Reserve's monetary policy, are expected to remain
14 at near current levels over the next year. Since there is a strong historical inverse
15 correlation between interest rates (*i.e.*, yields on long-term government bonds) and the
16 share prices of utility stocks (*i.e.*, share prices of utility stocks typically fall when interest
17 rates rise and vice versa) and the yields on long-term government bonds currently exceed
18 the dividend yields of utilities when historically long-term government bond yields have
19 been lower than the dividend yields of utilities, it is reasonable to expect that utility
20 investors' required return is increasing. Therefore, as explained in further detail below,
21 cost of equity estimates based solely on current market conditions will understate the cost

1 of equity required by investors during the future period that the Company's rates
2 determined in this proceeding will be in effect.

3 **A. Inflationary Expectations in Current and Projected Capital Market**

4 **Conditions**

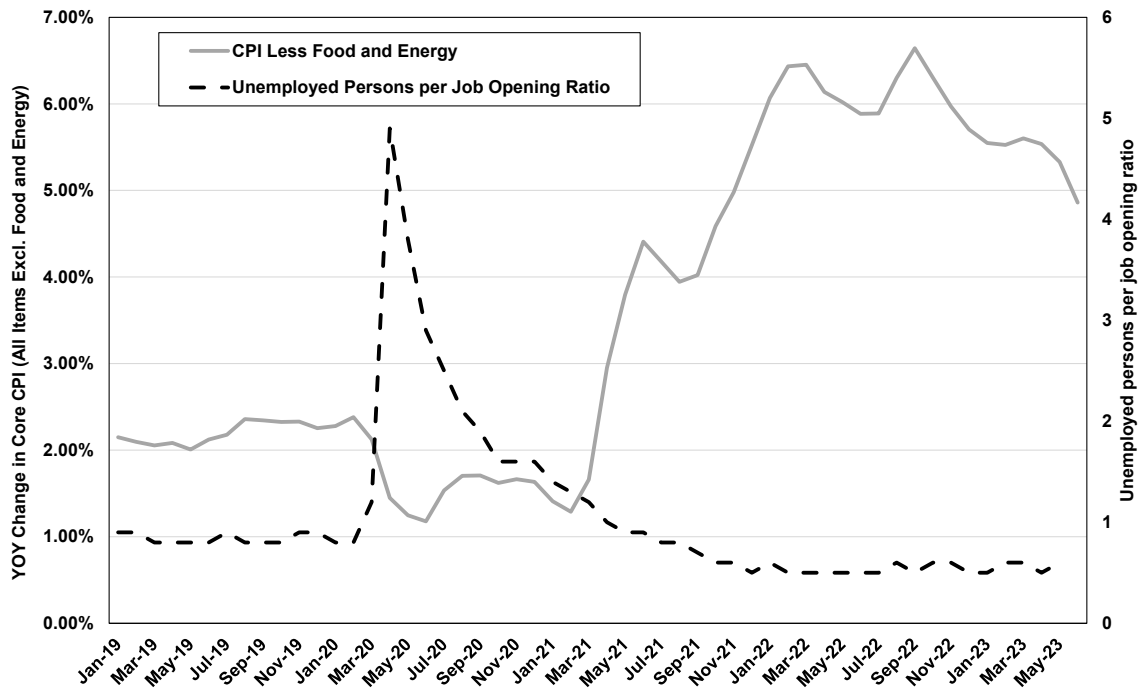
5 **Q. Has inflation increased significantly over the past year?**

6 A. Yes. Figure 2 presents the year-over-year ("YOY") change in core inflation as measured
7 by the Consumer Price Index ("CPI") excluding food and energy prices as published by
8 the Bureau of Labor Statistics. We considered core inflation because it is the preferred
9 inflation indicator of the Federal Reserve for determining the direction of monetary
10 policy. Core inflation is preferred by the Federal Reserve since it removes the effect of
11 food and energy prices, which can be highly volatile. As shown in Figure 2, core
12 inflation increased steadily beginning in early 2021, rising from 1.41 percent in January
13 2021 to a high of 6.64 percent in September 2022, which was the largest 12-month
14 increase since 1982. Since that time, while core inflation has declined in response to the
15 Federal Reserve's monetary policy, core inflation continues to remain above the Federal
16 Reserve's target level of 2.0 percent.

17 Finally, as shown in Figure 2, we also considered the ratio of unemployed persons per job
18 opening which is currently 0.6 and has been consistently below 1.0 since 2021 despite the
19 Federal Reserve's accelerated policy normalization. This metric indicates sustained
20 strength in the labor market. Given the Federal Reserve's dual mandate of maximum
21 employment and price stability, the continued increased levels of core inflation coupled

with the strength in the labor market has resulted in the Federal Reserve’s sustained focus on the priority of reducing inflation.

Figure 2. Core Inflation and Unemployed Persons-to-Job Openings, January 2019 to June 2023⁸



Q. What are the expectations for inflation over the near term?

A. The Federal Reserve has indicated that it expects inflation will remain elevated above its target level over at least the next year and that it will continue to increase short-term interest rates to reduce inflation. For example, Federal Reserve Chair Powell at the Federal Open Market Committee (“FOMC”) meeting in June 2023 observed that while inflation is off of its recent highs, it remains significantly above the Federal Reserve’s

⁸ Bureau of Labor Statistics.

1 long-term target and noted that further policy firming is likely including additional
2 increases in the federal funds rate:

3 Since early last year, the FOMC has significantly tightened the stance of
4 monetary policy. We have raised our policy interest rate by 5 percentage
5 points and have continued to reduce our securities holdings at a brisk pace.
6 We have covered a lot of ground, and the full effects of our tightening have
7 yet to be felt. In light of how far we have come in tightening policy, the
8 uncertain lags with which monetary policy affects the economy, and
9 potential headwinds from credit tightening, today we decided to leave our
10 policy interest rate unchanged and to continue to reduce our securities
11 holdings. Looking ahead, nearly all Committee participants view it as likely
12 that some further rate increases will be appropriate this year to bring
13 inflation down to 2 percent over time.⁹

14 Chair Powell also continued to reiterate that “[r]educing inflation is likely to require a
15 period of below-trend growth and some softening in labor market conditions.”¹⁰

16 B. The Use of Monetary Policy to Address Inflation

17 **Q. What policy actions has the Federal Reserve enacted to respond to increased**
18 **inflation?**

19 A. The dramatic increase in inflation has prompted the Federal Reserve to pursue an
20 aggressive normalization of monetary policy, removing the accommodative policy
21 programs used to mitigate the economic effects of COVID-19. From the March 2022
22 meeting through the May 2023 meeting, the Federal Reserve increased the target federal
23 funds rate through a series of increases from 0.00 – 0.25 percent to 5.00 percent to 5.25

⁹ Transcript. Chair Powell Press Conference, June 14, 2023, at 1.

¹⁰ Transcript. Chair Powell Press Conference, June 14, 2023, p. 4.

1 percent.¹¹ Further, while the Federal Reserve did not increase the federal funds rate at
2 the June 2023 meeting, the Federal Reserve did project two additional 25 basis point
3 increases in the federal funds rate in 2023.¹² Therefore, the Federal Reserve anticipates
4 the continued need to maintain the federal funds rate at a restrictive level in order to
5 achieve its long-run goal of 2 percent inflation.

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

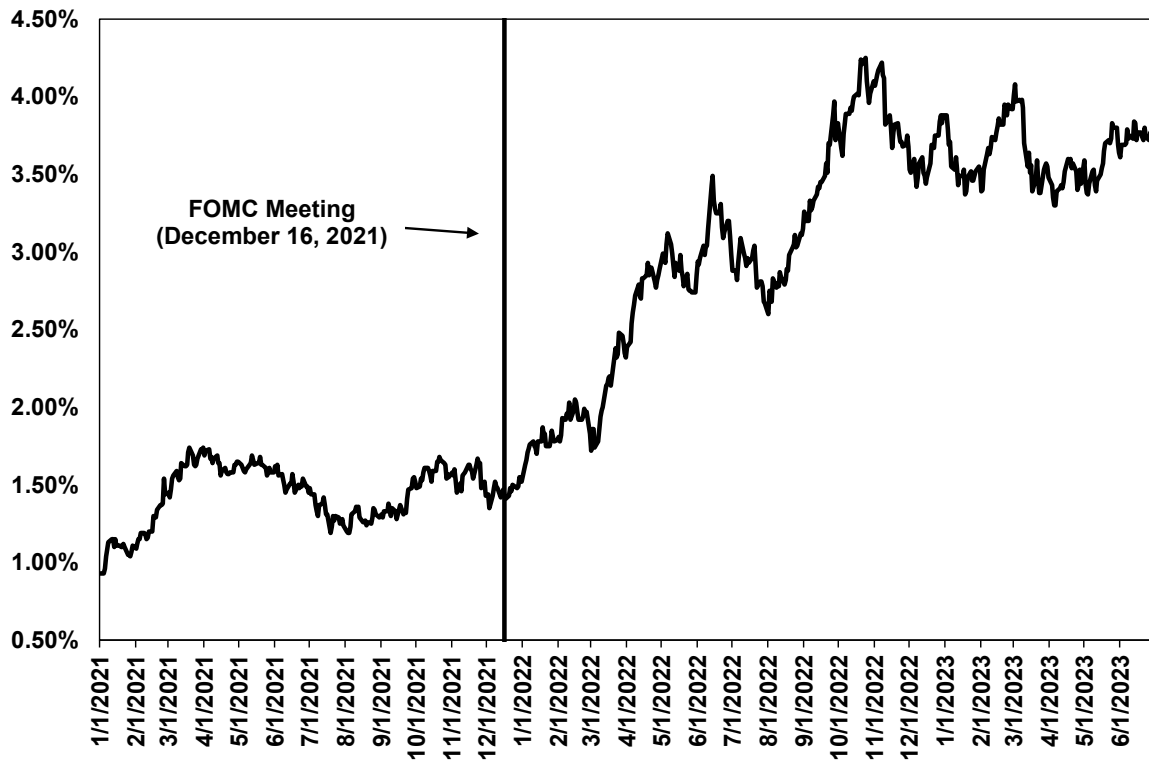
8 **Q. How have the yields on long-term government bonds increased in response to**
9 **inflation and the Federal Reserve's normalization of monetary policy?**

10 A. As the Federal Reserve has substantially increased the federal funds rate in response to
11 increased levels of inflation that have persisted for longer than originally projected,
12 longer term interest rates have also increased. As shown in Figure 3, since the Federal
13 Reserve's December 2021 meeting, the yield on 10-year Treasury bonds has more than
14 doubled, increasing from 1.47 percent on December 15, 2021, to 3.81 percent on June 30,
15 2023.

¹¹ Federal Reserve, Press Releases, March 16, 2022, May 4, 2022, June 15, 2022, September 22, 2022, November 2, 2022, February 1, 2023, March 22, 2023, and May 3, 2023.

¹² Federal Reserve, Summary of Economic Projections, June 14, 2023,
<https://www.federalreserve.gov/monetarypolicy/files/fomcproptab120230614.pdf>.

Figure 3. 10-Year Treasury Bond Yield, January 2021 – June 2023¹³



Q. What have equity analysts said about long-term government bond yields?

A. Leading equity analysts have noted that they expect the yields on long-term government bonds to remain elevated through at least the end of 2024. According to the most recent *Blue Chip Financial Forecasts* report, the consensus estimate of the average yield on the 10-year Treasury bond is approximately 3.50 percent through the fourth quarter of 2024.¹⁴ It is reasonable to expect that if government bond yields remain elevated, the cost of equity will be increasing above the levels experienced in the 2020 and 2021 when interest rates were much lower.

¹³ S&P Capital IQ Pro.

¹⁴ *Blue Chip Financial Forecasts*, Vol. 42, No. 7, June 30, 2023, p. 2.

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

A. As shown in Figure 4, when the Commission approved the settlement agreement and authorized an ROE of 9.30 percent in the Company's 2020 rate proceeding, interest rates (as measured by the 30-year Treasury bond yield) were 1.99 percent and core inflation was 4.18 percent. However, since the Company's last rate proceeding, long-term interest rates have nearly doubled, and, as discussed, inflation has remained at an elevated level.

Figure 4. Change in Market Conditions Since Liberty EnergyNorth's Last Rate Case¹⁵

Docket	Decision Date	Federal Funds Rate	30-Day Average of 30-Year Treasury Bond Yield	Core Inflation Rate	Authorized ROE
DG 20-105	7/30/2021	0.07%	1.99%	4.18%	9.30%
Current	6/30/2023	5.08%	3.89%	4.86%	

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

Return on Utility Investments

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

A. Yes. Interest rates and utility share prices are inversely correlated, which means that increases in interest rates result in declines in the share prices of utilities and vice versa. For example, Goldman Sachs and Deutsche Bank examined the sensitivity of share prices of different industries to changes in interest rates over the past five years. Both Goldman Sachs and Deutsche Bank found that utilities had one of the strongest negative

¹⁵ St. Louis Federal Reserve Bank; Bureau of Labor Statistics.

1 relationships with bond yields (*i.e.*, increases in bond yields resulted in the decline of
2 utility share prices).¹⁶

3 **Q. How do equity analysts expect the utility sector to perform in an increasing interest**
4 **rate environment?**

5 A. Equity analysts project that utilities will underperform the broader market given high
6 inflation and the recent increases in interest rates. Fidelity classifies the utility sector as
7 underweight,¹⁷ and Keybank Capital Markets analyst Sophie Karp recently noted she had
8 a negative view of the sector in 2023 and expects a decline in the relative valuation of the
9 utilities sector as compared to the S&P 500:

10 The utility sector's relative outperformance came on the back of the pre-
11 recessionary environment in the U.S. in 2022, analyst Karp said. She noted
12 that the sector now traded at a 2.8 times premium to the S&P 500 Index,
13 which is relatively wide by historical standards.

14 She said the utility sector is relatively overvalued and will see a mean
15 reversion in 2023, adding that the last time such a premium over the S&P
16 500 Index happened was in 2004.

17 "We are therefore negative on the sector overall going into 2023 and our
18 OW picks grow fewer," Karp said

19 There has been a surprising deterioration of the regulatory environment
20 across multiple jurisdictions, including the historically stronger ones, she
21 noted. Some regulatory developments, according to the analyst, are driven
22 by the regulator's desire to moderate the impact on customer bills. "Given
23 that power and commodity prices remain elevated, we expect to continue
24 seeing regulators getting 'creative' with assumptions and rate mechanisms
25 to achieve that goal," she added.

26 Karp said she would focus on rate affordability, as inflationary pressures

¹⁶ Lee, Justina. "Wall Street Is Rethinking the Treasury Threat to Big Tech Stocks." Bloomberg.com, March 11, 2021.

¹⁷ Fidelity. "Second Quarter 2023 Investment Research Update." April 21, 2023.

1 will likely be a factor for the foreseeable future.

2 “As we turn to 2023, we believe that the sector will find it difficult to defend
3 this relative valuation position, particularly as macro headwinds persist and
4 begin to take a toll on utility earnings,” she added.¹⁸

5 Similarly, Barron’s recently noted that the decline in share prices can be attributed to the
6 relatively high valuations and low dividend yields of utilities as compared to other asset
7 classes such as Treasuries.¹⁹ According to Barron’s, even after the recent decline in share
8 prices, the Utilities Select ETF was yielding 2.85 percent, which is a yield that will not
9 “lure in buyers when the ultrasafe 10-year Treasury note yields close to 4%.”²⁰

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

12 A. While interest rates have increased substantially over the past year, the valuations of
13 utilities have not fully reflected the effect of the recent increase in interest rates. To
14 illustrate this point, we examined the difference between the dividend yields of utility
15 stocks and the yields on long-term government bonds from January 2010 through June
16 2023 (“yield spread”). We selected the dividend yield on the S&P Utilities Index as the
17 measure of the dividend yields for the utility sector and the yield on the 10-year Treasury
18 bond as the estimate of the yield on long-term government bonds. As shown in Figure 5,
19 the recent significant increase in long-term government bonds yields has resulted in the

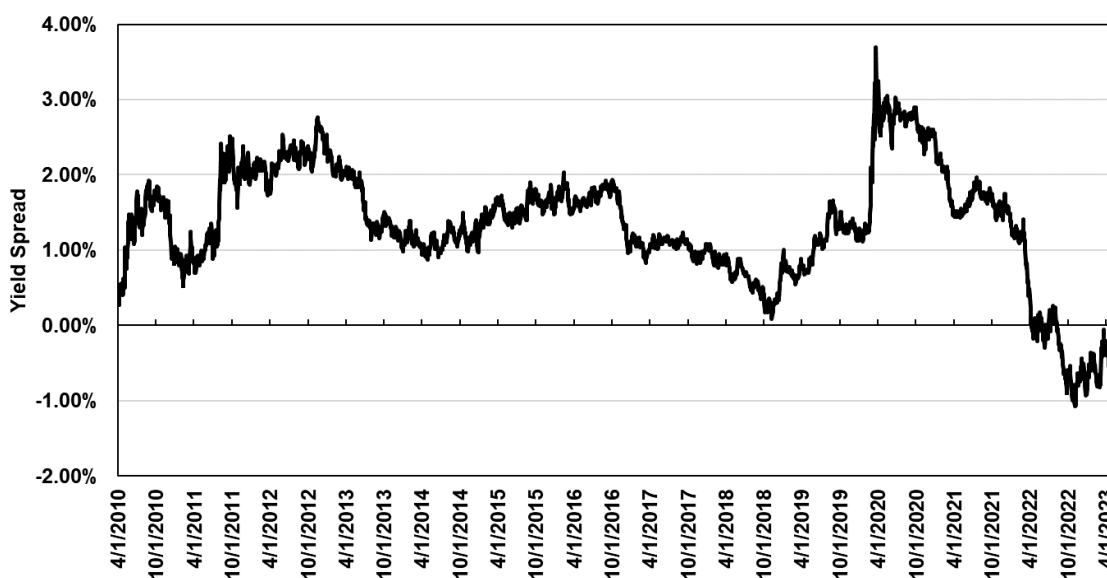
¹⁸ Market Insider. “After A ‘Good Run’ For Utilities In 2022, Analyst Says ‘Trade Is Over – For Now,’ But Retains Bullish Bias On These Stocks,” January 17, 2023. (emphasis added).

¹⁹ Sonenshine, Jacob. “Utilities Stocks Have Fallen off a Cliff. They Just Got Downgraded, Too.” Barron’s, October 17, 2022.

²⁰ *Id.*

yield on long-term government bonds exceeding the dividend yields of utilities. The yield spread as of June 30, 2023, was negative 0.53 percent. However, the long-term average yield spread from 2010 to 2023 is 1.30 percent. Therefore, the current yield spread is well below the long-term average.

Figure 5. Spread between the S&P Utilities Index Dividend Yield and the 10-year Treasury Bond Yield, January 2010 – June 2023²¹



For further context as to how unlikely it is to have a yield spread of negative 0.53 percent, we calculated the z-score for the current yield spread, which measures the number of standard deviations from the mean. The current yield spread of negative 0.53 percent has a z-score of negative 2.05, meaning the current yield spread is over 2 standard deviations from the mean of 1.30 percent.²² In other words, 95 percent of the

²¹ S&P Capital IQ Pro and Bloomberg Professional.

²² The z-score is calculated as: (yield spread at June 30, 2023 minus average yield spread 2010 through June 2023)/standard deviation of yield spread from 2010 through June 2023. This equals: (-0.53 minus 1.30)/0.0079.

1 daily yield spread observations from 2010 through June 2023 fall between negative 0.28
2 percent and 2.88 percent, with the current yield spread of negative 0.53 percent being
3 outside of that range. Thus, the current yield spread is an outlier, which is why equity
4 analysts do not expect this current level to hold.

5 Since long-term bond yields are expected to remain elevated at current levels over the
6 near-term, equity analysts expect utilities to underperform, and thus the dividend yields
7 for utilities will increase. This is because investors that purchased utility stocks as an
8 alternative to the lower yields on long-term government bonds would otherwise be
9 inclined to rotate back into government bonds, particularly as the yields on long-term
10 government bonds remain elevated, thus resulting in a decrease in the share prices of
11 utilities.

12 E. Conclusion

13 **Q. What are your conclusions regarding the effect of current market conditions on the**
14 **cost of equity for Liberty EnergyNorth?**

15 A. Investors expect long-term interest rates to remain relatively high through 2024, in
16 response to continued elevated levels of inflation and the Federal Reserve's
17 normalization of monetary policy. Because the share prices of utilities are inversely
18 correlated to interest rates and government bond yields are greater than utility stock
19 dividend yields, the share prices of utilities are likely to continue to underperform, which
20 is the reason a number of equity analysts have classified the sector as either underperform
21 or underweight. The expected underperformance of utilities means that DCF models

1 using recent historical data likely underestimate investors' required return over the period
2 that rates will be in effect. Therefore, these expected market conditions support
3 consideration of the higher end of the range of cost of equity results produced by the DCF
4 models. Moreover, prospective market conditions warrant consideration of forward-
5 looking cost of equity estimation models such as the CAPM and ECAPM, which more
6 directly reflect changes in interest rates and the investor-required return on equity.

7 **VI. PROXY GROUP SELECTION**

8 **Q. Please provide a brief profile of Liberty EnergyNorth.**

9 A. Liberty EnergyNorth provides natural gas distribution services to approximately 98,000
10 customers in New Hampshire. Liberty EnergyNorth is a wholly-owned subsidiary of
11 Liberty Utilities Co. ("LUCo"), which is a wholly-owned subsidiary of Algonquin Power
12 & Utilities Corporation ("APUC"). LUCo is a utility holding company that owns
13 electric, natural gas, water, and wastewater utilities across 13 states. APUC is based in
14 Ontario, Canada, and its stock is traded on the New York Stock Exchange ("NYSE") and
15 the Toronto Stock Exchange. APUC owns regulated utility companies and renewable
16 generation assets in jurisdictions throughout North America. Liberty EnergyNorth is not
17 currently rated by any credit rating agency. LUCo has a long-term rating of BBB from
18 S&P (Outlook: Stable), Baa2 from Moody's (Outlook: Stable), and BBB from Fitch

1 Ratings (“Fitch”) (Outlook: Stable).²³ APUC has a long-term rating of BBB (Outlook:
2 Stable) from S&P, and BBB (Outlook: Stable) from Fitch.²⁴

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

5 A. One of the purposes of this proceeding is to estimate the cost of equity for a natural utility
6 company that is not itself publicly traded. Because the cost of equity is a market-based
7 concept and because Liberty EnergyNorth’s operations do not make up the entirety of a
8 publicly traded entity, it is necessary to establish a group of companies that are both
9 publicly traded and comparable to the Company in certain fundamental business and
10 financial respects to serve as its “proxy” in the cost of equity estimation process.

11 Even if the Company were a publicly traded entity, it is possible that transitory events
12 could bias its market value over a given period. A significant benefit of using a proxy
13 group is that it moderates the effects of unusual events that may be associated with any
14 one company. The companies included in the proxy group all possess a set of operating
15 and risk characteristics that are substantially comparable to the Company’s, and thus
16 provide a reasonable basis to derive and estimate the appropriate cost of equity for
17 Liberty EnergyNorth.

²³ S&P Capital IQ Pro; Moody’s Investors Service; Fitch Ratings. Rating Action Commentary. January 13, 2023.

²⁴ S&P Capital IQ Pro; Moody’s Investors Service; Fitch Ratings. Rating Action Commentary. January 13, 2023.

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

2 A. The overall purpose of developing a set of screening criteria is to select a proxy group of
3 companies that align with the financial and operational characteristics of Liberty
4 EnergyNorth and that investors would view as comparable to the Company. We began
5 with the group of 10 companies that *Value Line Investment Survey* (“*Value Line*”)
6 classifies as Natural Gas Distribution Utilities and applied the following screening
7 criteria to select companies that:

- 8 • pay consistent quarterly cash dividends, because companies that do not pay
9 consistent dividends cannot be analyzed using the constant growth DCF model;
- 10 • have investment grade long-term issuer ratings from S&P and/or Moody’s;
- 11 • are covered by more than one utility industry analyst;
- 12 • have positive long-term earnings growth forecasts from at least two utility
13 industry equity analysts;
- 14 • derive more than 70.00 percent of their total operating income from regulated
15 operations;
- 16 • derive more than 60.00 percent of regulated operating income from gas
17 distribution operations; and
- 18 • were not party to a merger or transformative transaction during the analytical
19 period considered or had a material event that would have affected the market
20 data for the company.

We developed the screens and thresholds for each screen based on judgment with the intention of balancing the need to maintain a proxy group that is of sufficient size against establishing a proxy group of companies that are comparable in business and financial risk to the Company.

Q. What is the composition of your proxy group?

A. Our proxy group consists of the five companies shown in Figure 6.

Figure 6. Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
NiSource	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
Spire, Inc.	SR

VII. COST OF EQUITY ESTIMATION

Q. Please briefly discuss the ROE in the context of the regulated rate of return.

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

1 **Q. How is the required cost of equity determined?**

2 A. The required cost of equity is estimated by using analytical techniques that rely on
3 market-based data to quantify investor expectations regarding equity returns, adjusted for
4 certain incremental costs and risks. Informed judgment is then applied to determine
5 where the company's cost of equity falls within the range of results produced by multiple
6 analytical techniques. The key consideration in determining the cost of equity is to
7 ensure that the methodologies employed reasonably reflect investors' views of the
8 financial markets in general, as well as the subject company in the context of the proxy
9 group, in particular.

10 **Q. What methods did you use to establish your recommended ROE in this proceeding?**

11 A. We considered the results of the constant growth DCF model, the CAPM, the ECAPM,
12 and a BYRP analysis. As discussed in more detail below, a reasonable cost of equity
13 estimate appropriately considers alternative methodologies and the reasonableness of
14 their individual and collective results.

15 **A. Importance of Multiple Analytical Approaches**

16 **Q. Is it important to use more than one analytical approach to estimate the cost of**
17 **equity?**

18 A. Yes. Because the cost of equity is not directly observable, it must be estimated based on
19 both quantitative and qualitative information. When faced with the task of estimating the
20 cost of equity, analysts and investors are inclined to gather and evaluate as much relevant
21 data as reasonably can be analyzed. Several models have been developed to estimate the

1 cost of equity, and we use multiple approaches to estimate the cost of equity. As a
2 practical matter, however, all the models available for estimating the cost of equity are
3 subject to limiting assumptions or other methodological constraints. Consequently, many
4 well-regarded finance texts recommend using multiple approaches when estimating the
5 cost of equity. For example, Copeland, Koller, and Murrin²⁵ suggest using the CAPM
6 and Arbitrage Pricing Theory model, while Brigham and Gapenski²⁶ recommend the
7 CAPM, DCF, and BYRP approaches.

8 **Q. Do current market conditions increase the importance of relying on more than one**
9 **analytical approach?**

10 A. Yes. As discussed previously, interest rates have increased substantially over the past
11 year and are expected to remain elevated over at least the next year from the lows seen
12 during the COVID-19 pandemic. The benefit of using multiple models is that each
13 model relies on different assumptions, certain of which may better reflect current and
14 projected market conditions at different times. As discussed previously, the CAPM,
15 ECAPM, and BYRP analysis offer some balance through the use of projected interest
16 rates since the effect of changes in interest rates, particularly the recent increase in
17 interest rates, may not be captured as well in the DCF model at this time. Therefore, it is
18 important to use multiple analytical approaches to ensure that the cost of equity results

²⁵ Copeland, Tom, Tim Koller and Jack Murrin. *Valuation: Measuring and Managing the Value of Companies*. New York, McKinsey & Company, Inc., 3rd Ed., 2000, at 214.

²⁶ Brigham, Eugene and Louis Gapenski. *Financial Management: Theory and Practice*. Orlando, Dryden Press, 1994, at 341.

1 reflect market conditions that are expected during the period that the Company's rates
2 will be in effect.

3 **B. Discounted Cash Flow (DCF) Models**

4 **Q. Please describe the DCF approach.**

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

8
$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

9 Where P_0 represents the current stock price, $D_1 \dots D_\infty$ are all expected future dividends,
10 and k is the discount rate, or required ROE. Equation [1] is a standard present value
11 calculation that can be simplified and rearranged into the following form:

12
$$k = \frac{D_0(1+g)}{P_0} + g \quad [2]$$

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

15 **Q. What assumptions are required for the constant growth DCF model?**

16 A. The constant growth DCF model requires the following four assumptions: (1) a constant
17 growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant
18 price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To
19 the extent that any of these assumptions are not objectively valid, considered judgment
20 and/or specific adjustments should be applied to the results.

1 **Q. What market data do you use to calculate the dividend yield in your constant**
2 **growth DCF model?**

3 A. The dividend yield in our constant growth DCF model is based on the proxy group
4 companies' current annualized dividend and average closing stock prices over the most
5 recent 30, 90, and 180 trading days ended June 30, 2023.

6 **Q. Why do you use 30-, 90-, and 180-day averaging periods?**

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

10 **Q. Did you make any adjustments to the dividend yield to account for periodic growth**
11 **in dividends?**

12 A. Yes. Because utility companies tend to increase their quarterly dividends at different
13 times throughout the year, it is reasonable to assume that dividend increases will be
14 evenly distributed over calendar quarters. Given that assumption, it is reasonable to
15 apply one-half of the expected annual dividend growth rate for purposes of calculating
16 the expected dividend yield component of the DCF model. This adjustment ensures that
17 the expected first-year dividend yield is, on average, representative of the coming twelve-
18 month period, and does not overstate the aggregated dividends to be paid during that
19 time.

1 **Q. Why is it important to select appropriate measures of long-term growth in applying**
2 **the DCF model?**

3 A. In its constant growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth
4 estimate in perpetuity. To reduce the long-term growth rate to a single measure, one
5 must assume that the payout ratio remains constant and that earnings per share, dividends
6 per share, and book value per share all grow at the same constant rate. Over the long run,
7 however, dividend growth can only be sustained by earnings growth. Therefore, it is
8 important to consider a variety of sources in arriving at a single projected long-term
9 earnings growth rate for the constant growth DCF model.

10 **Q. Which sources of long-term earnings growth rates did you use in your DCF**
11 **analysis?**

12 A. We incorporate three sources of long-term earnings per share (“EPS”) growth rates: (1)
13 Zacks Investment Research; (2) Yahoo! Finance; and (3) *Value Line*.

14 **Q. Why are EPS growth rates the appropriate growth rates to be relied on in the DCF**
15 **model?**

16 A. Earnings are the fundamental driver of a company’s ability to pay dividends; therefore,
17 projected EPS growth is the appropriate measure of a company’s long-term growth. In
18 contrast, changes in a company’s dividend payments are based on management decisions
19 related to cash management and other factors. For example, a company may decide to
20 retain earnings rather than pay out a portion of those earnings to shareholders through

1 dividends. Therefore, dividend growth rates are less likely than earnings growth rates to
2 reflect accurately investor perceptions of a company's growth prospects.

3 **Q. In the past, has the Commission relied exclusively on EPS growth rates as the**
4 **estimate of long-term growth in the DCF model?**

5 A. No. In its decision in Docket No. DG 08-009, the Commission noted that the use of
6 additional growth rates in the DCF model such as dividend per share ("DPS") and book
7 value per share ("BVPS") is appropriate.²⁷ In support of its conclusion, the Commission
8 reasoned that an investor's return from utility stocks is based not only on stock price
9 appreciation but also dividends.²⁸ Furthermore, the Commission noted that the
10 assumption in the DCF model of a constant price-to-earnings ratio does not hold, and
11 therefore complete reliance on earnings growth is not appropriate.²⁹

12 **Q. As a result of the Commission's prior decision, have you considered additional long-**
13 **term growth rates in the development of your DCF analysis?**

14 A. Yes. While we believe that earnings are the fundamental driver of a company's ability to
15 pay dividends, and therefore are the appropriate measure of a company's long-term
16 growth, we have also considered a DCF analysis that also relies on the retention growth
17 rate.

²⁷ New Hampshire Public Utilities Commission, Docket No. DG 08-009, Order No. 24,972, May 29, 2009, at 62.

²⁸ *Id.*, at 63.

²⁹ *Id.*

1 **Q. Please describe the retention growth estimate as applied in your testimony.**

2 A. The retention growth estimate stems from the proposition that a firm's growth is a
3 function of its expected earnings and the extent to which it retains earnings to invest in
4 the enterprise. In its simplest form, the model represents long-term growth as the product
5 of the retention ratio (*i.e.*, the percentage of earnings not paid out as dividends, referred to
6 as "b") and the expected return on book equity (referred to as "r"). Thus, the simple "b x
7 r" form of the model projects growth as a function of internally generated funds. That
8 form of the model is limiting, however, in that it does not provide for growth funded from
9 external equity.

10 The model can be extended to account for growth funded by external equity, this "br +
11 sv" form of the retention growth estimate, which we used in our DCF analysis, is meant
12 to reflect growth from both internally generated funds (*i.e.*, the "br" term) and from
13 issuances of equity (*i.e.*, the "sv" term). While the first term represents the portion of net
14 income that is "put back" into the company as a means of funding growth, the "sv" term
15 can be represented as:

$$\left(\frac{m}{b} - 1\right) * \text{common shares growth rate [3]}$$

17 Where:

$$\frac{m}{b} = \text{the market to book ratio}$$

19 In this form, the "sv" term reflects an element of growth as the product of (i) the growth
20 in shares outstanding and (ii) that portion of the market-to-book ratio that exceeds unity.

1 As shown in Attachment AEB/CMW-5, all the components of the retention growth
2 estimates for the DCF model can be derived from data provided by *Value Line*.

3 **Q. Did you also consider DPS and BVPS growth rates for your DCF analyses?**

4 A. While we considered DPS and BVPS growth rates, we did not rely on either of these
5 growth rates as a long-term growth estimate in the constant growth DCF model. There
6 are several reasons why reliance on *Value Line* projections of DPS growth and BVPS
7 growth is not appropriate. First, the use of dividend and book value growth rates ignores
8 the academic research demonstrating that earnings growth rates are most relevant in stock
9 price valuation.³⁰ Second, projections of dividend growth are entirely dependent on
10 dividend policy and only measure a portion of the growth experienced by the company,
11 and estimates of book value growth are also highly influenced by dividend policy and
12 how earnings are invested between assets and liabilities. Investing earnings in assets or
13 paying down debt will both increase BVPS (all else equal) but paying dividends will
14 decrease BVPS. Therefore, projections of earnings growth provide a more robust
15 estimate of total company growth and are not influenced by the effects of subsequent

³⁰ See, e.g., Harris, Robert S. "Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return." *Financial Management*, Spring 1986, at 66; Vander Weide, James H. and Willard T. Carleton. "Investor growth expectations: Analysts vs. history." *The Journal of Portfolio Management*, Spring, 1988; Harris, Robert S. and Felicia C. Marston. "Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts." *Financial Management*, Summer, 1992; Advanced Research Center. "Investor Growth Expectations." Summer 2004; Brigham, Eugene F. and Dilip K. Shome and Steve R. Vinson. "The Risk Premium Approach to Measuring a Utility's Cost of Equity." *Financial Management*, Vol. 14, No. 1, Spring, 1985; Morin, Dr. Roger A. New Regulatory Finance. Public Utilities Reports, Inc., 2006, pp. 299-303; Liu, Jing, *et al.* "Equity Valuation Using Multiples." *Journal of Accounting Research*, Vol. 40 No. 1, March 2002; Gleason, C.A., *et al.* "Valuation Model Use and the Price Target Performance of Sell-Side Equity Analysts." *Contemporary Accounting Research*, September 2011; Jung, Boochun, *et. al.* "Do financial analysts' long-term growth forecasts matter? Evidence from stock recommendations and career outcomes." *Journal of Accounting and Economics*, Vol. 53 Issues 1-2, February-April 2012.

1 investment and dividend payment policies as is the case with both DPS and BVPS growth
2 rates.

3 **Q. How did you calculate the range of results for the constant growth DCF models?**

4 A. We calculated a low-end result for our DCF model using the minimum growth rate of the
5 three sources (*i.e.*, the lowest of the Zacks, Yahoo Finance, and *Value Line* projected
6 earnings growth rates) for each of the proxy group companies. We used a similar
7 approach to calculate a high-end result, using the maximum growth rate of the three
8 sources for each proxy group company. Lastly, we also calculated results using the
9 average growth rate from all three sources for each proxy group company.

10 **Q. What are the results of your DCF analyses?**

11 A. Figure 7 summarizes the results of our DCF analyses. As shown in Figure 7, the mean
12 DCF results using the average growth rates range from 9.59 percent to 10.02 percent, and
13 the mean results using the maximum growth rates range from 11.41 percent to 11.49
14 percent. While we also summarize the DCF results using the minimum growth rates,
15 given the expected underperformance of utility stocks going forward and thus the
16 likelihood that the DCF model is understating the cost of equity, we do not believe it is
17 appropriate to consider the DCF results using minimum growth rates at this time.

Figure 7. Discounted Cash Flow Results

<i>Constant Growth DCF - Earnings Growth</i>			
	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
30-Day Avg. Stock Price	8.92%	10.02%	11.49%
90-Day Avg. Stock Price	8.84%	9.94%	11.41%
180-Day Avg. Stock Price	8.85%	9.96%	11.42%
Average	8.87%	9.97%	11.44%

<i>Constant Growth DCF - Earnings & Retention Growth</i>			
30-Day Avg. Stock Price	8.31%	9.67%	11.49%
90-Day Avg. Stock Price	8.23%	9.59%	11.41%
180-Day Avg. Stock Price	8.24%	9.60%	11.42%
Average	8.26%	9.62%	11.44%

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

A. Yes. For example, in its May 2022 decision establishing the cost of equity for Aqua Pennsylvania, Inc., the Pennsylvania Public Utility Commission concluded that the current capital market conditions of high inflation and increased interest rates have resulted in the DCF model understating the utility cost of equity, and that weight should be placed on risk premium models, such as the CAPM, in the determination of the ROE:

To help control rising inflation, the Federal Open Market Committee has signaled that it is ending its policies designed to maintain low interest rates. Aqua Exc. at 9. Because the DCF model does not directly account for interest rates, consequently, it is slow to respond to interest rate changes. However, I&E's CAPM model uses forecasted yields on ten-year Treasury bonds, and accordingly, its methodology captures forward looking changes in interest rates.

1 Therefore, our methodology for determining Aqua's ROE shall utilize both
2 I&E's DCF and CAPM methodologies. As noted above, the Commission
3 recognizes the importance of informed judgment and information provided
4 by other ROE models. In the 2012 PPL Order, the Commission considered
5 PPL's CAPM and RP methods, tempered by informed judgment, instead of
6 DCF-only results. We conclude that methodologies other than the DCF can
7 be used as a check upon the reasonableness of the DCF derived ROE
8 calculation. Historically, we have relied primarily upon the DCF
9 methodology in arriving at ROE determinations and have utilized the results
10 of the CAPM as a check upon the reasonableness of the DCF derived equity
11 return. As such, where evidence based on other methods suggests that the
12 DCF-only results may understate the utility's ROE, we will consider those
13 other methods, to some degree, in determining the appropriate range of
14 reasonableness for our equity return determination. In light of the above, we
15 shall determine an appropriate ROE for Aqua using informed judgement
16 based on I&E's DCF and CAPM methodologies.³¹

17
18

19 We have previously determined, above, that we shall utilize I&E's DCF and
20 CAPM methodologies. I&E's DCF and CAPM produce a range of
21 reasonableness for the ROE in this proceeding from 8.90% [DCF] to 9.89%
22 [CAPM]. Based upon our informed judgment, which includes
23 consideration of a variety of factors, including increasing inflation leading
24 to increases in interest rates and capital costs since the rate filing, we
25 determine that a base ROE of 9.75% is reasonable and appropriate for
Aqua.³²

26 **Q. What are your conclusions about the results of the DCF models?**

27 A. As discussed previously, one primary assumption of the DCF models is a constant price-
28 to-earnings ratio, and that assumption is heavily influenced by the market price of utility
29 stocks. Since utility stocks are expected to underperform the broader market over the
30 near term as interest rates remain elevated and yields on long-term government bonds

³¹ Pennsylvania Public Utility Commission, Docket Nos. R-2021-3027385 and R-2021-3027386, Opinion and Order, May 12, 2022, pp. 154–155.

³² *Id.*, pp. 177–178.

1 exceed utility dividend yields, it is important to consider the results of the DCF model
2 with caution. Therefore, while we have given weight to the results of the constant growth
3 DCF model, our recommendation also gives weight to the results of other cost of equity
4 estimation models.

5 C. CAPM Analysis

6 **Q. Please briefly describe the CAPM.**

7 A. The CAPM is a risk premium approach that estimates the cost of equity for a given
8 security as a function of a risk-free return plus a risk premium to compensate investors
9 for the non-diversifiable or “systematic” risk of that security. Systematic risk is the risk
10 inherent in the entire market or market segment, which cannot be diversified away using
11 a portfolio of assets. Unsystematic risk is the risk of a specific company that can,
12 theoretically, be mitigated through portfolio diversification.

13 The CAPM is defined by four components:

$$14 \quad K_e = r_f + \beta(r_m - r_f) \quad [4]$$

15 Where:

16 K_e = the required market cost of equity;

17 β = beta coefficient of an individual security;

18 r_f = the risk-free rate of return; and

19 r_m = the required return on the market.

20 In this specification, the term $(r_m - r_f)$ represents the market risk premium. According to
21 the theory underlying the CAPM, because unsystematic risk can be diversified away,
22 investors should only be concerned with systematic or non-diversifiable risk. Systematic

1 risk is measured by beta, which is a measure of the volatility of a security as compared to
2 the market as a whole. Beta is defined as:

$$\beta = \frac{\text{Covariance}(r_e, r_m)}{\text{Variance}(r_m)} [5]$$

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

8 **Q. What risk-free rate do you use in your CAPM analysis?**

9 A. We rely on three sources for our estimate of the risk-free rate: (1) the current 30-day
10 average yield on 30-year Treasury bonds, which is 3.89 percent;³³ (2) the average
11 projected 30-year Treasury bond yield for the fourth quarter of 2023 through the fourth
12 quarter of 2024, which is 3.84 percent;³⁴ and (3) the average projected 30-year Treasury
13 bond yield for 2025 through 2029, which is 3.80 percent.³⁵

14 **Q. What beta coefficients do you use in your CAPM analysis?**

15 A. As shown in Attachment AEB/CMW-7, we use the beta coefficients for the proxy group
16 companies as reported by Bloomberg and *Value Line*. The beta coefficients reported by

³³ Bloomberg Professional as of June 30, 2023.

³⁴ *Blue Chip Financial Forecasts*, Vol. 42, No. 7, June 30, 2023, at 2.

³⁵ *Blue Chip Financial Forecasts*, Vol. 42, No. 6, June 1, 2023, at 14.

1 Bloomberg are calculated using ten years of weekly returns relative to the S&P 500
2 Index. The beta coefficients reported by *Value Line* are calculated using five years of
3 weekly returns relative to the New York Stock Exchange Composite Index. Additionally,
4 as shown in Attachments AEB/CMW-7 and AEB/CMW-8, we consider another CAPM
5 analysis that relies on the long-term average beta coefficient for the companies in our
6 proxy group, which is calculated as an average of the *Value Line* beta coefficients for the
7 companies in our proxy group from 2013 through 2022.

8 **Q. How do you estimate the market risk premium in the CAPM?**

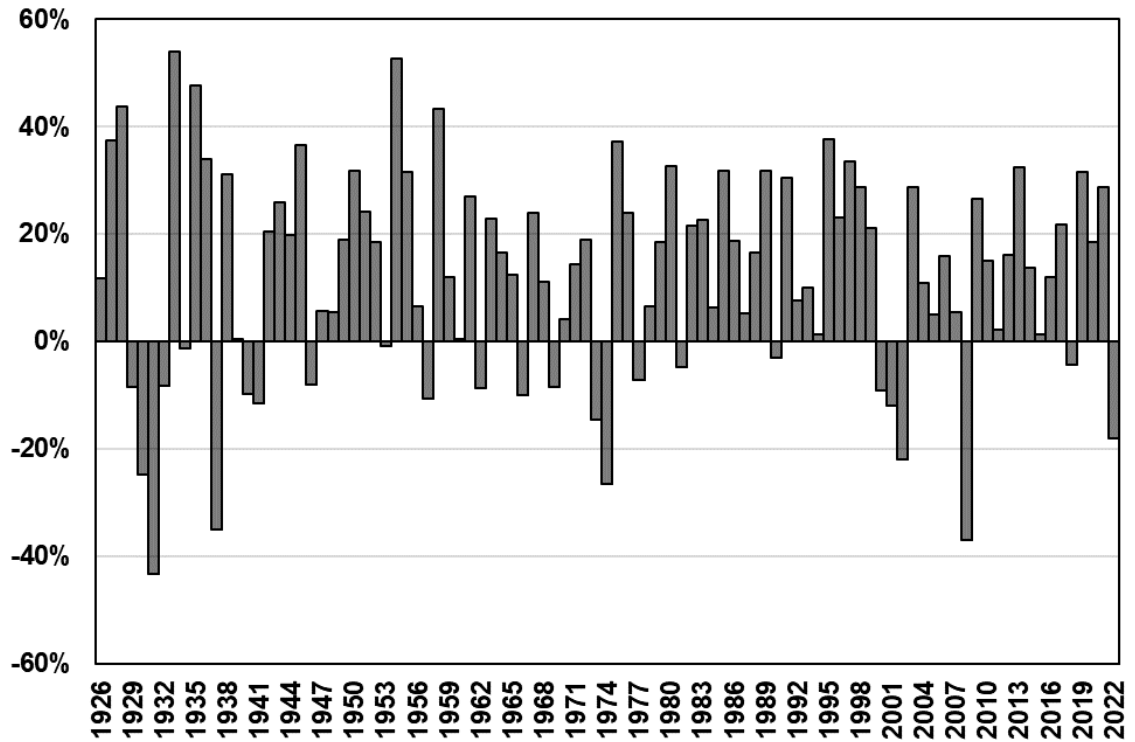
9 A. We estimate the market risk premium as the difference between the implied expected
10 equity market return and the risk-free rate. As shown in Attachment AEB/CMW-9, the
11 expected market return is calculated using the constant growth DCF model discussed
12 earlier in our testimony for the companies in the S&P 500 Index. Based on an estimated
13 market capitalization-weighted dividend yield of 1.64 percent and a weighted long-term
14 growth rate of 10.95 percent, the estimated required market return for the S&P 500 Index
15 as of June 30, 2023, is 12.68 percent. Based on the three risk-free rates considered, the
16 market risk premium ranges from 8.79 percent to 8.88 percent.

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

19 A. As shown in Figure 8, given the range of annual equity returns that have been observed
20 over the past century, a current expected market return of 12.68 percent is not

unreasonable. In 50 out of the past 97 years (or roughly 52 percent of observations), the realized equity market return was 12.68 percent or greater.

Figure 8. Realized U.S. Equity Market Returns (1926–2022)³⁶



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

A. Yes. We have also considered the results of an ECAPM analysis in estimating the cost of equity for Liberty EnergyNorth.³⁷ The ECAPM calculates the product of the adjusted beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium without any effect from the beta coefficient. The results of the two calculations are

³⁶ Depicts total annual returns on large company stocks, as reported in the 2023 Kroll SBBI Yearbook.

³⁷ See, e.g., Morin, Roger A. New Regulatory Finance. Public Utilities Reports, Inc., 2006, at 189.

1 summed, along with the risk-free rate, to produce the ECAPM result, as noted in
2 Equation [6] below:

$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [6]$$

3
4 Where:

5 k_e = the required market cost of equity

6 β = adjusted beta coefficient of an individual security

7 r_f = the risk-free rate of return

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

9 The ECAPM addresses the tendency of the “traditional” CAPM to underestimate the cost
10 of equity for companies with low beta coefficients such as regulated utilities. In that
11 regard, the ECAPM is not redundant to the use of adjusted betas in the traditional CAPM,
12 but rather it recognizes the results of academic research indicating that the risk-return
13 relationship is different (in essence, flatter) than estimated by the CAPM, and that the
14 CAPM underestimates the “alpha,” or the constant return term.³⁸

15 Consistent with the CAPM, our application of the ECAPM uses the forward-looking
16 market risk premium estimates, the three yields on 30-year Treasury securities noted
17 earlier used as the risk-free rate, and the current Bloomberg, current *Value Line*, and
18 long-term *Value Line* beta coefficients.

³⁸ *Id.*, at 191.

Q. What are the results of your CAPM analyses?

A. As shown in Figure 9 (*see* also Attachment AEB/CMW-7), our traditional CAPM analysis produces a range of returns from 10.26 percent to 11.10 percent, and the ECAPM analysis results range from 10.86 percent to 11.49 percent.

Figure 9. CAPM and ECAPM Results

	Current 30-Day Avg 30-Year Treasury Yield	Near-Term Projected 30-Year Treasury Yield	Longer-Term Projected 30-Year Treasury Yield
CAPM:			
Current <i>Value Line</i> Beta	11.10%	11.09%	11.08%
Current Bloomberg Beta	10.58%	10.57%	10.56%
Long-term Avg. <i>Value Line</i> Beta	10.28%	10.27%	10.26%
ECAPM:			
Current <i>Value Line</i> Beta	11.49%	11.49%	11.48%
Current Bloomberg Beta	11.11%	11.10%	11.09%
Long-term Avg. <i>Value Line</i> Beta	10.88%	10.87%	10.86%

D. BYRP Analysis

Q. Please describe the BYRP analysis.

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as bondholders. In other words, because returns to equity holders have greater risk than returns to bondholders, it is reasonable to expect that equity investors require a higher return for that incremental risk. Thus, risk premium approaches estimate the cost of equity as the sum of the equity risk premium and the

1 yield on a particular class of bonds. In our analysis, we use actual authorized returns for
2 natural gas distribution utilities as the historical measure of the cost of equity to
3 determine the risk premium.

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

6 A. It is important to recognize both academic literature and market evidence indicating that
7 the equity risk premium (as used in this approach) is inversely related to the level of
8 interest rates (*i.e.*, as interest rates increase, the equity risk premium decreases, and vice
9 versa). Consequently, it is important to develop an analysis that: (1) reflects the inverse
10 relationship between interest rates and the equity risk premium; and (2) relies on recent
11 and expected market conditions. Such an analysis can be developed based on a
12 regression of the risk premium as a function of Treasury bond yields. When the
13 authorized ROEs for natural gas utilities serve as the measure of required equity returns
14 and the yield on the long-term Treasury bond is defined as the relevant measure of
15 interest rates, the risk premium is the difference between those two points.³⁹

16 **Q. Is the BYRP analysis relevant to investors?**

17 A. Yes. Investors are aware of authorized ROEs in other jurisdictions, and they consider
18 those authorizations as a benchmark for a reasonable level of equity returns for utilities of

³⁹ See *e.g.*, Berry, S. Keith. "Interest Rate Risk and Utility Risk Premia during 1982-93." *Managerial and Decision Economics*, Vol. 19, No. 2, March 1998 (the author used a similar methodology, including using authorized ROEs as the relevant data source, and came to similar conclusions regarding the inverse relationship between risk premia and interest rates). See also Harris, Robert S. "Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return." *Financial Management*, Spring 1986, at 66.

1 comparable risk operating in other jurisdictions. Because our BYRP analysis is based on
2 authorized ROEs for utility companies relative to corresponding Treasury yields, it
3 provides relevant information to assess the return expectations of investors in the current
4 interest rate environment.

5 **Q. What did your BYRP analysis reveal?**

6 A. As shown in Figure 10, from 1992 through June 2023, there was a strong negative
7 relationship between risk premia and interest rates. To estimate that relationship, we
8 conducted a regression analysis using the following equation:

$$RP = a + b(T) \text{ [7]}$$

9
10 Where:

11 RP = Risk Premium (difference between allowed ROEs and the yield on 30-year
12 Treasury bonds)

13 a = intercept term

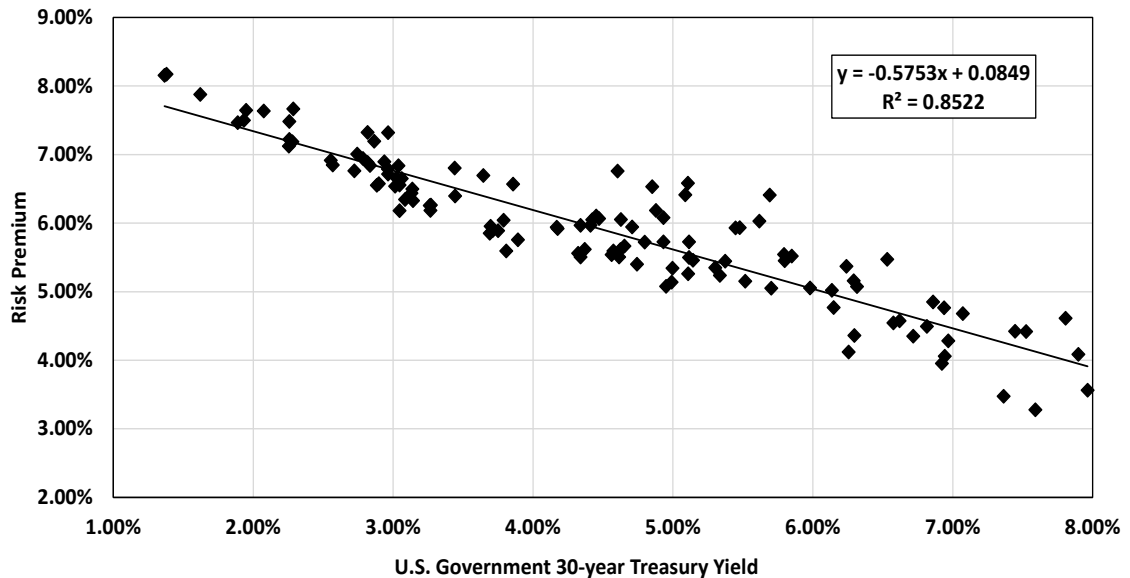
14 b = slope term

15 T = 30-year Treasury bond yield

16 Data regarding authorized ROEs were derived from all natural gas distribution utility rate
17 cases from 1992 through June 2023 as reported by Regulatory Research Associates
18 (“RRA”).⁴⁰ This equation’s coefficients were statistically significant at the 99.00 percent
19 level.

⁴⁰ This analysis began with over 1,200 cases and was screened to eliminate limited issue rider cases, transmission-only cases, and cases that were silent with respect to the authorized ROE. After applying those screening criteria, the analysis was based on data from over 750 cases.

Figure 10. Risk Premium Regression Analysis



As shown in Attachment AEB/CMW-10, based on the current 30-day average of the 30-year Treasury bond yield, the risk premium would be 6.25 percent, resulting in an estimated cost of equity of 10.14 percent. Based on the consensus estimate of the near-term (*i.e.*, Q4/2023 – Q4/2024) projected 30-year Treasury bond yield (*i.e.*, 3.84 percent), the risk premium would be 6.28 percent, resulting in an estimated cost of equity of 10.12 percent. Based on a consensus estimate of the longer-term (*i.e.*, 2025 – 2029) projection of the 30-year Treasury bond yield (*i.e.*, 3.80 percent), the risk premium would be 6.31 percent, resulting in an estimated cost of equity of 10.11 percent.

Q. How did the results of the BYRP analysis inform your recommended ROE for Liberty EnergyNorth?

A. We have considered the results of the Bond Yield Risk Premium analysis in setting our recommended ROE range for the Company. As noted, investors consider the authorized

1 ROE of a company when assessing the risk of that company as compared to utilities of
2 comparable risk operating in other jurisdictions.

3 **VIII. REGULATORY AND BUSINESS RISKS**

4 **Q. Taken alone, do the results of the cost of equity estimation models for the proxy**
5 **group provide an appropriate estimate of the cost of equity for the Company?**

6 A. No. These results provide only a range of the appropriate estimate of the Company's cost
7 of equity. Several additional factors must be taken into consideration when determining
8 where the Company's cost of equity falls within the range of results. These factors,
9 which are discussed below, should be considered with respect to their overall effect on
10 the Company's risk profile.

11 **A. Capital Expenditures**

12 **Q. Please summarize the Company's capital expenditure requirements.**

13 A. As of December 31, 2022, the Company had net utility plant of approximately \$568
14 million, and the Company currently projects capital expenditures for 2023 through 2027
15 of approximately \$345 million.⁴¹ Therefore, the Company's projected capital
16 expenditures represent approximately 60.8 percent of its net utility plant as of December
17 31, 2022.

⁴¹ Data provided by the Company.

1 **Q. How is the Company's risk profile affected by its capital expenditure requirements?**

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

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

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

13 When applicable, a jurisdiction's willingness to support large capital
14 projects with cash during construction is an important aspect of our analysis.
15 This is especially true when the project represents a major addition to rate
16 base and entails long lead times and technological risks that make it
17 susceptible to construction delays. Broad support for all capital spending is
18 the most credit-sustaining. Support for only specific types of capital
19 spending, such as specific environmental projects or system integrity plans,
20 is less so, but still favorable for creditors. Allowance of a cash return on
21 construction work-in-progress or similar ratemaking methods historically
22 were extraordinary measures for use in unusual circumstances, but when
23 construction costs are rising, cash flow support could be crucial to maintain
24 credit quality through the spending program. Even more favorable are those
25 jurisdictions that present an opportunity for a higher return on capital
26 projects as an incentive to investors.⁴²

⁴² S&P Global Ratings. "Assessing U.S. Investor-Owned Utility Regulatory Environments." August 10, 2016, at 7.

1 While Liberty EnergyNorth is not currently rated by the credit rating agencies, the
2 Company's business risk is also increased as a result of the level of its future capital
3 expenditures. Therefore, to the extent that the Company's rates do not permit the
4 opportunity to recover its capital investments on a regular and timely basis, it will face
5 increased recovery risk and thus increased pressure on its credit metrics.

6 **Q. How do Liberty EnergyNorth's capital expenditure requirements compare to those**
7 **of the proxy group companies?**

8 A. As shown in Attachment AEB/CMW-11, we calculated the ratio of expected capital
9 expenditures to net utility plant for Liberty EnergyNorth and each of the companies in the
10 proxy group by dividing each company's projected capital expenditures for 2023–2027
11 by its total net utility plant as of December 31, 2022. As shown therein, Liberty
12 EnergyNorth's ratio of capital expenditures as a percentage of net utility plant is
13 consistent with the median for the proxy group.

14 **Q. Does Liberty EnergyNorth currently have a capital tracking mechanism to recover**
15 **the costs associated with its capital expenditures plan between rate cases?**

16 A. No. However, the Company is proposing three step adjustments to recover capital
17 investments associated with non-growth-related capital spending placed into service after
18 the rate case. The first step adjustment would occur on August 1, 2024, with the second
19 step adjustment being effective August 1, 2025, and the third step adjustment being
20 effective August 1, 2026. If approved the Company will be able to recover a portion of

1 its projected capital expenditures plan for 2023 through 2027 through the step
2 adjustments.

3 **Q. Are capital investment recovery mechanisms common among natural gas**
4 **distribution utilities?**

5 A. Yes. As shown in Attachment AEB/CMW-12, approximately 72 percent of the operating
6 utility companies of the proxy group recover costs through capital investment reconciling
7 mechanisms.

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

10 A. The Company's capital expenditure requirements as a percentage of net utility plant are
11 significant and will continue to be so over the next several years. Additionally, while
12 Liberty EnergyNorth does not have a capital tracking mechanism to recover capital costs,
13 the Company would be able to recover a portion of its capital expenditures plan through
14 the proposed step adjustments, if approved. Similarly, a majority of the operating
15 subsidiaries of the proxy group are able to recover capital expenditures between rate
16 cases through a capital reconciling mechanism.

17 **B. Regulatory Risk**

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

19 A. The ratemaking process is premised on the principle that, for investors and companies to
20 commit the capital needed to provide safe and reliable utility service, the subject utility
21 must have a reasonable opportunity to recover the return of, and the market-required

1 return on, invested capital. Regulatory authorities recognize that because utility
2 operations are capital intensive, regulatory decisions should enable the utility to attract
3 capital at reasonable terms, and doing so balances the long-term interests of investors and
4 customers. To achieve this balance, the Company must be able to finance its operations
5 assuming a reasonable opportunity to earn an appropriate return on invested capital to
6 maintain an acceptable financial profile. In that respect, the regulatory environment is
7 one of the most important factors considered in both debt and equity investors' risk
8 assessments.

9 From the perspective of debt investors, the authorized return should enable the utility to
10 generate the cash flow needed to meet its near-term financial obligations, make the
11 capital investments needed to maintain and expand its systems, and maintain the
12 necessary levels of liquidity to fund unexpected events. This financial liquidity must be
13 derived not only from internally generated funds but also by efficient access to capital
14 markets. Moreover, because fixed-income investors have many investment alternatives,
15 even within a given market sector, the utility's financial profile must be adequate on a
16 relative basis to ensure its ability to attract capital under a variety of economic and
17 financial market conditions.

18 In addition, equity investors require that the authorized return be adequate to provide a
19 risk-comparable return on the equity portion of the utility's capital investments. Because
20 equity investors are the residual claimants on the utility's cash flows (which is to say that

1 the equity return is subordinate to interest payments), they are particularly concerned
2 with the strength of regulatory support and its effect on future cash flows.

3 **Q. How do credit rating agencies consider regulatory risk in establishing a company's**
4 **credit rating?**

5 A. Both Moody's and S&P consider the overall regulatory framework in establishing credit
6 ratings. Specifically, Moody's establishes credit ratings based on four key factors: (1)
7 regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification;
8 and (4) financial strength, liquidity, and key financial metrics. Of these criteria,
9 regulatory framework, and the ability to recover costs and earn returns are each given a
10 broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00
11 percent weighting in the overall assessment of business and financial risk for regulated
12 utilities.⁴³

13 S&P also identifies the regulatory framework as an important factor in credit ratings for
14 regulated utilities, stating: "One significant aspect of regulatory risk that influences credit
15 quality is the regulatory environment in the jurisdictions in which a utility operates."⁴⁴

16 S&P identifies four specific factors that it uses to assess the credit implications of the
17 regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2)

⁴³ Moody's Investors Service. Rating Methodology: Regulated Electric and Gas Utilities. June 23, 2017, at 4.

⁴⁴ Standard & Poor's Global Ratings. Ratings Direct. U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others. June 25, 2018, at 2.

1 tariff-setting procedures and design; (3) financial stability; and (4) regulatory
2 independence and insulation.⁴⁵

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

5 A. The regulatory environment can significantly affect both access to, and cost of capital in
6 several ways. First, the proportion and cost of debt capital available to utility companies
7 are influenced by the rating agencies' assessment of the regulatory environment. As
8 noted by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly,
9 the regulatory environment and how the utility adapts to that environment are the most
10 important credit considerations."⁴⁶ Moody's has further highlighted the relevance of a
11 stable and predictable regulatory environment to a utility's credit quality, noting:
12 "[b]roadly speaking, the Regulatory Framework is the foundation for how all the
13 decisions that affect utilities are made (including the setting of rates), as well as the
14 predictability and consistency of decision-making provided by that foundation."⁴⁷

15 **Q. Have you conducted any analysis of the risk associated with the regulatory**
16 **framework in New Hampshire relative to the jurisdictions in which the utility**
17 **operating subsidiaries of the companies in your proxy group operate?**

18 A. Yes. We have evaluated the regulatory framework in New Hampshire on three factors
19 that are important in terms of providing a regulated utility a reasonable opportunity to

⁴⁵ *Id.*, at 1.

⁴⁶ Moody's Investors Service. Rating Methodology: Regulated Electric and Gas Utilities. June 23, 2017, at 6.

⁴⁷ *Id.*

1 earn its authorized ROE: (1) test year convention (*i.e.*, forecast vs. historical); (2) use of
2 revenue decoupling mechanisms or other clauses that provide revenue stabilization; and
3 (3) the prevalence of capital cost recovery between rate cases. The results of this
4 regulatory risk assessment are shown in Attachment AEB/CMW-12 and are summarized
5 as follows:

6 Test Year Convention: Liberty EnergyNorth is using a historical test year adjusted for
7 known and measurable changes and is proposing three subsequent step adjustments to
8 recover capital expenditures placed into service after the test year. Approximately 52.4
9 percent of the utility operating subsidiaries of the companies in the proxy group
10 companies use forecasted or partially forecasted test years.

11 Revenue Stabilization / Volumetric Risk: Liberty EnergyNorth does have a Revenue
12 Decoupling Adjustment Factor (“RDAF”) and Normal Weather Adjustment (“NWA”) to
13 mitigate the effect of volumetric risk. Similarly, approximately 90.5 percent of the utility
14 operating subsidiaries of the proxy group companies have some form of protection
15 against volumetric risk.

16 Capital Cost Recovery: As noted above, Liberty EnergyNorth does not have a capital
17 tracking mechanism; however, the Company is proposing to recover a portion of its
18 capital expenditures plan through the three proposed step adjustments in 2024, 2025, and
19 2026. Similarly, approximately 71.4 percent of the utility operating subsidiaries of the
20 proxy group companies also have some form of capital cost recovery mechanism in
21 place.

1 **Q. Do analysts rank the various regulatory jurisdictions in terms of their relative credit**
2 **supportiveness?**

3 A. Yes. RRA and others provide a ranking of regulatory jurisdictions. RRA assigns a
4 ranking for each regulatory jurisdiction as “Above Average,” “Average,” or “Below
5 Average,” and then within each of those categories, a numeric ranking from 1 to 3. Thus,
6 the RRA rankings for each jurisdiction range from “Above Average/1,” which is
7 considered the most supportive, to “Below Average/3,” which is the least supportive.

8 **Q. How does the supportiveness of New Hampshire regulation compare with the**
9 **jurisdictions where the proxy group companies operate?**

10 A. RRA ranks New Hampshire as an Average/2, which is the middle score of the nine tiers.
11 As shown in Attachment AEB/CMW-13, the average ranking of the proxy group is also
12 Average/2, meaning that New Hampshire is ranked consistent with the average of the
13 proxy group.

14 **Q. Has RRA provided recent commentary regarding its regulatory ranking for New**
15 **Hampshire?**

16 A. Yes. In May 2023, RRA updated its evaluation of the regulatory environment in New
17 Hampshire and, while RRA continues to afford New Hampshire a ranking of Average/2
18 rating, it noted the following:

19 New Hampshire warrants close attention in light of ongoing investigations
20 regarding utility rate adjustments, energy procurement and net metering.

1 In August 2022, the New Hampshire Public Utilities Commission
2 commenced an investigation into the accounting and calculation
3 methodologies for step adjustments utilized by the state's electric and gas
4 utilities, citing the volume of step adjustment petitions submitted to the PUC
5 and the varying methodologies used to calculate said adjustments. In the
6 investigation, the PUC is reviewing questions related to: the necessity for
7 ongoing step adjustments for utilities; the ratemaking and calculation
8 methodologies used; the number of step adjustments, if any, between rate
9 cases and the resulting procedural schedules; and the processes used by the
10 PUC, petitioners and participating parties for developing data and
11 recommendations.

12 Regulators are also examining the state's renewable portfolio standard and
13 default service electric power procurement processes and methodologies
14 and cost-of-gas procurements utilized by New Hampshire's energy utilities
15 in a proceeding opened in September 2022. In opening this investigation,
16 the PUC cited escalating energy costs and the potential impact to residents,
17 businesses and institutions. The state's regulated utilities are parties to the
18 proceeding.⁴⁸

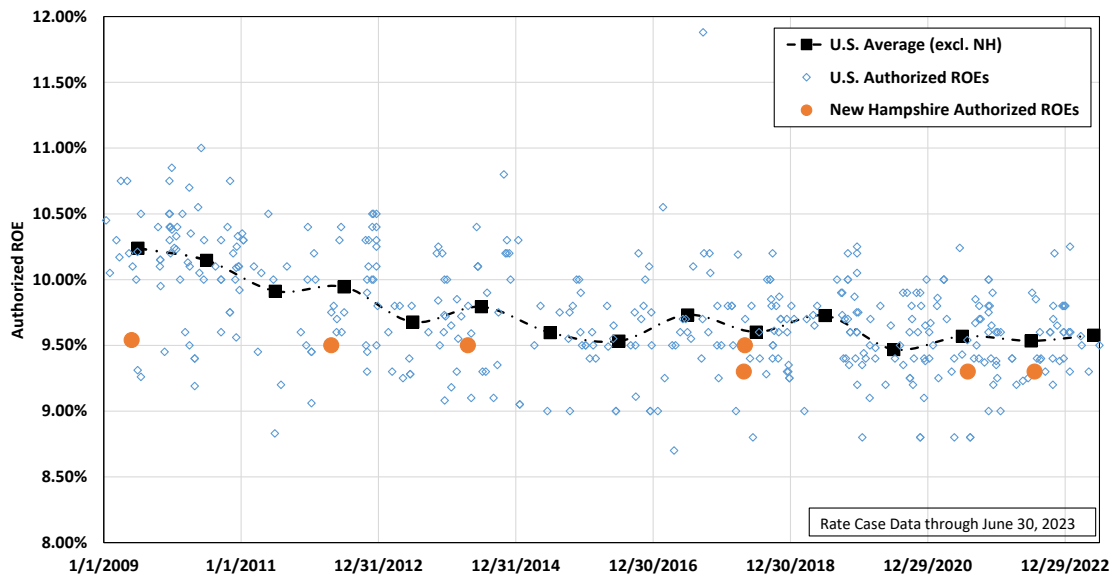
19 **Q. How do the returns that have been authorized in New Hampshire compare with the**
20 **authorized returns in other jurisdictions?**

21 A. While nearly all the authorized ROEs approved by the Commission have been the result
22 of settlements, as shown in Figure 11, the authorized ROEs for natural gas utilities in
23 New Hampshire have been below the average authorized ROEs for natural gas utilities
24 across the United States. Relying on settlement ROEs that differ materially from
25 industry norms, without consideration of the fact that there were broader settlement
26 terms, could result in a false sense of the required return on equity. New Hampshire
27 utility subsidiaries must compete for discretionary capital within their corporate
28 structures, which must in turn compete for capital with other utilities and businesses.

⁴⁸ Regulatory Research Associates, State Regulatory Evaluations Quarterly Update, effective as of May 24, 2023

1 Placing Liberty EnergyNorth at the low end of authorized ROEs outside New Hampshire
2 over the longer term could negatively affect the Company's access to discretionary
3 capital.

4 *Figure 11. Comparison of New Hampshire and U.S. Authorized Returns for Natural Gas*
5 *Utilities*⁴⁹



6
7 **Q. How have the credit rating agencies summarized the risk in the utility sector**
8 **recently?**

9 **A.** Credit rating agencies have indicated that the industry overall has increased risk and have
10 responded with close scrutiny of the financial coverage ratios of the sector. Therefore, it
11 is critically important to consider these factors and to recognize that the investor-required
12 ROE would be higher today than at the time of Commission decisions in the recent past.

⁴⁹ S&P Capital IQ Pro.

1 As discussed in more detail in Section V, current market conditions demonstrate greater
2 risk than at the time the Commission authorized returns in the recent past.

3 **Q. Are you aware of any utilities that have been affected by negative rate case**
4 **developments?**

5 A. Yes. Most recently for example, the market responded negatively to the rate case
6 decision of the Arizona Corporation Commission (“ACC”) for Arizona Public Service
7 Company (“APS”), including the authorized ROE. The Recommended Opinion and
8 Order (“ROO”) issued in the APS rate proceeding on August 2, 2021, recommended an
9 ROE of 9.16 percent. However, in October 2021, that recommendation was amended to
10 reduce the company’s ROE to 8.70 percent. The final ROE that was established for APS
11 was 8.70 percent.⁵⁰ Following the hearings conducted by the ACC in October 2021,
12 Fitch downgraded the issuer default credit rating of APS from A to A-, and its parent,
13 Pinnacle West Corporation (“PNW”) from A- to BBB+, citing heightened business risk.⁵¹
14 Similarly, both Standard & Poor’s and Moody’s downgraded PNW’s and APS’ credit
15 rating and put the companies on credit watch negative following the ACC’s November
16 vote that officially authorized the 8.70 percent ROE.⁵² Finally, PNW’s share price

⁵⁰ Arizona Corporation Commission Docket No. E-01345A-19-0236, Commissioner Olson Proposed Amendment No. 1 to the Recommended Opinion and Order. October 4, 2021.

⁵¹ FitchRatings, “Fitch Downgrades Pinnacle West Capital & Arizona Public Service to ‘BBB+’; Outlooks Remain Negative,” October 12, 2021.

⁵² See S&P Capital IQ and Moody’s Investors Service, “Rating Actions: Moody’s downgrades Pinnacle West to Baa1 and Arizona Public Service to A3; outlook negative,” (Nov. 17, 2021).

1 decreased approximately 24 percent from August 2021 (issuance of the ROO) through
2 November 2021 (ACC's vote).

3 **Q. What are your conclusions regarding the risks related to the New Hampshire**
4 **regulatory environment?**

5 A. Both Moody's and S&P have identified the supportiveness of the regulatory environment
6 as an important consideration in developing their overall credit ratings for regulated
7 utilities. Many of the companies in the proxy group have timely cost recovery through
8 forecasted test years, capital cost recovery trackers, and non-volumetric rate
9 designs/revenue stabilization mechanisms. Liberty EnergyNorth's proposal to recover a
10 portion of the Company's capital costs through step adjustments in 2024, 2025, and 2026
11 as well as the utilization of revenue stabilization that mitigates volumetric risk are
12 consistent with the majority of the utility operating subsidiaries of the proxy group, which
13 indicates that the Company's regulatory risk is generally consistent with the proxy group.

14 **C. Small Size Risk**

15 **Q. Is there a risk to a firm associated with small size?**

16 A. Yes. Both the financial and academic communities have long accepted the proposition
17 that the cost of equity for small firms is subject to a "size effect." While empirical
18 evidence of the size effect often is based on studies of industries other than regulated
19 utilities, utility analysts also have noted the risk associated with small market
20 capitalizations. Specifically, an analyst for Ibbotson Associates noted:

21 For small utilities, investors face additional obstacles, such as a smaller

1 customer base, limited financial resources, and a lack of diversification
2 across customers, energy sources, and geography. These obstacles imply a
3 higher investor return.⁵³

4 **Q. How does the smaller size of a utility affect its business risk?**

5 A. In general, smaller companies are less able to withstand adverse events that affect their
6 revenues and expenses. The impact of weather variability, the loss of large customers to
7 bypass opportunities, or the destruction of demand as a result of general macroeconomic
8 conditions or fuel price volatility will have a proportionately greater impact on the
9 earnings and cash flow volatility of smaller utilities. Similarly, capital expenditures for
10 non-revenue producing investments, such as system maintenance and replacements, will
11 put proportionately greater pressure on customer costs, potentially leading to customer
12 attrition or demand reduction. Taken together, these risks affect the return required by
13 investors for smaller companies.

14 **Q. How do Liberty EnergyNorth's natural gas distribution operations compare in size**
15 **to the utility operating subsidiaries of the proxy group companies?**

16 A. The Company's natural gas distribution operations are substantially smaller than the
17 median for the proxy group companies in terms of market capitalization. While Liberty
18 EnergyNorth is not publicly traded on a stand-alone basis, as shown in Attachment
19 AEB/CMW-14, we have estimated the implied market capitalization for the Company
20 (*i.e.*, the market capitalization if the Company were a stand-alone publicly traded entity)
21 relative to the actual market capitalization for the proxy group companies.

⁵³ Annin, Michael. "Equity and the Small-Stock Effect." Public Utilities Fortnightly, October 15, 1995.

1 Specifically, to estimate the size of the Company's implied market capitalization relative
2 to the proxy group, we first calculated the implied equity balance of Liberty
3 EnergyNorth's capital structure by multiplying the Company's test year rate base by the
4 Company's proposed common equity ratio of 55.00 percent. We then applied the median
5 market-to-book ratio for the proxy group of 1.64 to the Company's implied common
6 equity balance to estimate an implied market capitalization, which is approximately
7 \$476.84 million, or approximately 10.81 percent of the median market capitalization for
8 the proxy group.

9 **Q. How did you estimate the small size risk premium for the Company?**

10 A. Given this relative size information, it is possible to estimate the impact of size on the
11 cost of equity for the Company using *Kroll* Cost of Capital Navigator data that estimates
12 the stock risk premia based on the size of a company's market capitalization.⁵⁴ As shown
13 in Attachment AEB/CMW-14, the median market capitalization of the proxy group is
14 approximately \$4.41 billion, which corresponds to the fourth decile of *Kroll*'s market
15 capitalization data.⁵⁵ Based on *Kroll*'s analysis, that decile corresponds to a size
16 premium of 0.58 percent (*i.e.*, 58 basis points). In comparison, Liberty EnergyNorth's
17 implied market capitalization of approximately \$476.84 million falls within the eighth
18 decile, which corresponds to a size premium of 1.18 percent (*i.e.*, 118 basis points). The

⁵⁴ *Kroll* Cost of Capital Navigator – Size Premium; annual data as of December 31, 2022.

⁵⁵ *Id.*

1 difference between the size premium for the Company and the size premium for the
2 proxy group is 60 basis points (*i.e.*, 1.18 percent minus 0.58 percent).

3 **Q. Were utility companies included in the small-size risk premium study conducted by**
4 ***Kroll*?**

5 A. Yes. As shown in Exhibit 7.2 of the *Kroll* (formerly *Duff & Phelps*) 2019 Valuation
6 Handbook, OGE Energy Corp. had the largest market capitalization of the companies
7 contained in the fourth decile, which indicates that *Kroll* has included utility companies
8 in its size risk premium study.⁵⁶

9 **Q. Is the size premium applicable to companies in regulated industries such as natural**
10 **gas utilities?**

11 A. Yes. For example, Zepp (2003) provided the results of two studies that showed evidence
12 of the required risk premium for small water utilities. The first study, which was
13 conducted by the Staff of the California Public Utilities Commission, computed proxies
14 for beta risk using accounting data from 1981 through 1991 for 58 water utilities and
15 concluded that smaller water utilities had greater risk and required higher returns on
16 equity than larger water utilities.⁵⁷ The second study examined the differences in
17 required returns over the period of 1987 through 1997 for two large and two small water
18 utilities in California. As Zepp (2003) showed, the required return for the two small

⁵⁶ *Kroll*. Valuation Handbook: Guide to Cost of Capital. 2019, Exhibit 7.2.

⁵⁷ Zepp, Thomas M. "Utility Stocks and the Size Effect—Revisited." *The Quarterly Review of Economics and Finance*, Vol. 43, No. 3, 2003, at 578–582.

1 water utilities calculated using the DCF model was on average 99 basis points higher than
2 the two larger water utilities.⁵⁸

3 Additionally, Chrétien and Coggins (2011) studied the CAPM and its ability to estimate
4 the risk premium for the utility industry, and in particular subgroups of utilities.⁵⁹ The
5 article considered the CAPM, the Fama-French three-factor model, and a model similar
6 to the ECAPM, which as previously discussed, we have also considered in estimating the
7 cost of equity for the Company. In the study, the Fama-French three-factor model
8 explicitly included an adjustment to the CAPM for risk associated with size. As Chrétien
9 and Coggins (2011) show, the beta coefficient on the size variable for the U.S. utility
10 group was positive and statistically significant indicating that small size risk was relevant
11 for regulated utilities.⁶⁰

12 **Q. Have regulators in other jurisdictions made a specific risk adjustment to the cost of**
13 **equity results based on a company's small size?**

14 A. Yes. For example, in Order No. 15, the Regulatory Commission of Alaska ("RCA")
15 concluded that Alaska Electric Light and Power Company ("AEL&P") was riskier than
16 the proxy group companies due to small size as well as other business risks. The RCA
17 did "not believe that adopting the upper end of the range of ROE analyses in this case,
18 without an explicit adjustment, would adequately compensate AEL&P for its greater

⁵⁸ *Id.*

⁵⁹ Chrétien, Stéphane, and Frank Coggins. "Cost Of Equity For Energy Utilities: Beyond The CAPM." *Energy Studies Review*, Vol. 18, No. 2, 2011.

⁶⁰ *Id.*

1 risk.”⁶¹ Thus, the RCA awarded AEL&P an ROE of 12.875 percent, which was 108
2 basis points above the highest cost of equity estimate from any model presented in the
3 case.⁶² Similarly, the RCA has also noted that small size, as well as other business risks
4 such as structural regulatory lag, weather risk, alternative rate mechanisms, gas supply
5 risk, geographic isolation, and economic conditions, increased the risk of ENSTAR
6 Natural Gas Company.⁶³ Ultimately, the RCA concluded that:

7 Although we agree that the risk factors identified by ENSTAR increase its
8 risk, we do not attempt to quantify the amount of that increase. Rather, we
9 take the factors into consideration when evaluating the remainder of the
10 record and the recommendations presented by the parties. After applying
11 our reasoned judgment to the record, we find that 11.875% represents a fair
12 ROE for ENSTAR.⁶⁴

13 Additionally, the Minnesota Public Utilities Commission (“Minnesota PUC”) authorized
14 an ROE for Otter Tail Power Company (“Otter Tail”) above the mean DCF results as a
15 result of multiple factors, including Otter Tail’s small size. The Minnesota PUC stated:

16 The record in this case establishes a compelling basis for selecting an ROE
17 above the mean average within the DCF range, given Otter Tail’s unique
18 characteristics and circumstances relative to other utilities in the proxy
19 group. These factors include the company’s relatively smaller size,
20 geographically diffuse customer base, and the scope of the Company’s
21 planned infrastructure investments.⁶⁵

⁶¹ Regulatory Commission of Alaska, Docket No. U-10-29, Order No. 15, September 2, 2011, at 37.

⁶² *Id.*, at 32 and 37.

⁶³ Regulatory Commission of Alaska, Docket No. U-16-066, Order No. 19, September 22, 2017, at 50–52.

⁶⁴ *Id.*

⁶⁵ Minnesota Public Utilities Commission, Docket No. E017/GR-15-1033, Order, August 16, 2016, at 55.

1 Finally, in Opinion Nos. 569 and 569-A, the Federal Energy Regulatory Commission
2 (“FERC”) adopted a size premium adjustment in its CAPM estimates for electric utilities.
3 In those decisions, the FERC noted that “the size adjustment was necessary to correct for
4 the CAPM’s inability to fully account for the impact of firm size when determining the
5 cost of equity.”⁶⁶

6 **Q. How have you considered the smaller size of Liberty EnergyNorth in your**
7 **recommended ROE in this proceeding?**

8 A. While we have estimated the effect of the Company’s small size on the cost of equity, we
9 are not proposing a specific adjustment for this risk factor. Rather, we believe it is
10 important to consider the small size of the Company’s natural gas distribution operations
11 in the determination of where, within the range of analytical results, the Company’s
12 required cost of equity falls. All else equal, the additional risk associated with the
13 Company’s small size supports an ROE toward the upper end of the range of results from
14 the cost of equity estimation models.

⁶⁶ *Ass’n. of Businesses Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 171 FERC ¶ 61,154 (2020), at ¶ 75. The U.S. Court of Appeals recently vacated FERC Order No. 569 decisions that related to its risk premium model and remanded the case to FERC to reopen the proceedings. However, in its decision, the Court did not reject FERC’s inclusion of the size premium to estimate the CAPM. (*See*, United States Court of Appeals Case No. 16-1325, Decision No. 16-1325, August 9, 2022, at 20).

D. Flotation Cost

Q. What are flotation costs?

A. Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for preparation, filing, underwriting, and other issuance costs.

Q. Why is it important to consider flotation costs in setting the authorized ROE?

A. A regulated utility must have the opportunity to earn an ROE that is both competitive and compensatory to attract and retain new investors. To the extent that a company is denied the opportunity to recover prudently incurred flotation costs, actual returns will fall short of expected (or required) returns, thereby diluting equity share value.

Q. Are flotation costs part of the utility's invested costs or part of the utility's expenses?

A. Flotation costs are part of the invested costs of the utility, which are properly reflected on the balance sheet under "paid in capital." They are not current expenses, and, therefore, are not reflected on the income statement. Rather, like investments in rate base or the issuance costs of long-term debt, flotation costs are incurred over time. As a result, the great majority of a utility's flotation costs are incurred prior to the test year but remain part of the cost structure that exists during the test year and beyond, and as such, should be recognized for ratemaking purposes. Therefore, it is irrelevant whether an issuance occurs during the test year or is planned for the test year because failure to allow recovery

1 of past flotation costs may deny the Company the opportunity to earn its required rate of
2 return in the future.

3 **Q. Please provide an example of why a flotation cost adjustment is necessary to**
4 **compensate investors for the capital they have invested.**

5 A. Suppose APUC issues stock with a value of \$100, and an equity investor invests \$100 in
6 APUC in exchange for that stock. Further, suppose that after paying flotation costs
7 associated with the equity issuance, which include fees paid to underwriters and
8 attorneys, among others, APUC ends up with only \$97 of net issuance proceeds rather
9 than the \$100 the investor contributed. Algonquin invests that \$97 in plant used to serve
10 its customers, which becomes part of rate base. Absent a flotation cost adjustment, the
11 investor will thereafter earn a return on only the \$97 invested in rate base, even though
12 she contributed \$100. Making a small flotation cost adjustment gives the investor a
13 reasonable opportunity to earn the authorized return, rather than the lower return that
14 results when the authorized return is applied to an amount less than what the investor
15 contributed.

16 **Q. Is the date of APUC's last issuance of common equity important in the**
17 **determination of flotation costs?**

18 A. No, the vintage of the issuance is not particularly important because an investor should
19 have a reasonable opportunity to earn a return on the full amount of capital that she has
20 contributed, but without the recognition of flotation costs, the investor suffers a shortfall
21 in every year after which the capital has been invested. For example, the last two equity

1 issuances for APUC are shown in Attachment AEB/CMW-15. APUC closed equity
2 issuances of approximately \$800 million and \$310.5 million (for a total of 67 million
3 shares of common stock) in November 2021 and October 2019, respectively. Returning
4 to our earlier example, the investor who contributed \$100 is entitled to a reasonable
5 opportunity to earn a return on \$100 not only in the first year after the investment, but in
6 every subsequent year in which she has the \$100 invested. Leaving aside depreciation,
7 which is dealt with separately, there is no basis to conclude that the investor is entitled to
8 earn a return on \$100 in the first year after issuance but thereafter is only entitled to earn
9 a return on only \$97. For as long as the \$100 is invested, the investor should have a
10 reasonable opportunity to earn a return on the entire amount.

11 **Q. Is the need to consider flotation costs eliminated because Liberty EnergyNorth is a**
12 **wholly-owned subsidiary of APUC?**

13 A. No, it is not. Although Liberty EnergyNorth is a wholly-owned subsidiary of APUC, it is
14 appropriate to consider flotation costs. Wholly-owned subsidiaries receive equity capital
15 from their parent and provide returns on the capital that roll up to the parent, which is
16 designated to attract and raise capital based upon the returns of those subsidiaries. To
17 deny recovery of issuance costs associated with the capital that is invested in the
18 subsidiaries ultimately penalizes the investors that fund utility operations and inhibits the
19 utility's ability to obtain new equity capital at a reasonable cost. This is particularly
20 important given Liberty EnergyNorth is planning significant capital expenditures over the
21 next five years.

1 **Q. Is the need to consider flotation costs recognized by the academic and financial**
2 **communities?**

3 A. Yes, it is. The need to reimburse shareholders for the lost returns associated with equity
4 issuance costs is recognized by the academic and financial communities in the same spirit
5 that investors are reimbursed for the costs of issuing debt. This treatment is consistent
6 with the philosophy of a fair rate of return. According to Dr. Shannon Pratt:

7 Flotation costs occur when new issues of stock or debt are sold to the public.
8 The firm usually incurs several kinds of flotation or transaction costs, which
9 reduce the actual proceeds received by the firm. Some of these are direct
10 out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and
11 prospectus preparation costs. Because of this reduction in proceeds, the
12 firm's required returns on these proceeds equate to a higher return to
13 compensate for the additional costs. Flotation costs can be accounted for
14 either by amortizing the cost, thus reducing the cash flow to discount, or by
15 incorporating the cost into the cost of capital. Because flotation costs are
16 not typically applied to operating cash flow, one must incorporate them into
17 the cost of capital.⁶⁷

18 **Q. Have you estimated what a reasonable flotation cost adjustment would be for**
19 **Liberty EnergyNorth?**

20 A. Yes. Our flotation cost is estimated on the costs of issuing equity that were incurred by
21 APUC in its two most recent common equity issuances. As shown in Attachment
22 AEB/CMW-15, based on the flotation costs of those two issuances, the impact on the
23 proxy group's cost of equity amounts to 11 basis points (*i.e.*, 0.11 percent) based on the
24 median and 16 basis points (*i.e.*, 0.16 percent) based on the mean.

⁶⁷ Pratt, Shannon P. Cost of Capital Estimation and Applications. Second Edition, at 220–21.

1 **Q. Does your final cost of equity model results include an adjustment for flotation cost**
2 **recovery?**

3 A. No, we did not make an explicit adjustment for flotation costs to any of the quantitative
4 results of our cost of equity models. Rather, we discuss flotation costs and provide the
5 estimate as additional context and support for the range of results produced by our cost of
6 equity estimation models and our ROE recommendation of 10.35 percent.

7 **IX. CAPITAL STRUCTURE**

8 **Q. Is the Company's capital structure an important consideration in the determination**
9 **of the appropriate ROE?**

10 A. Yes. The equity ratio is the primary indicator of financial risk for a regulated utility such
11 as Liberty EnergyNorth. All else equal, a higher debt ratio increases the risk to equity
12 investors. For debt holders, higher debt ratios result in a greater portion of the available
13 cash flow being required to meet debt service, thereby increasing the risk associated with
14 the payments on debt. The result of increased risk is a higher interest rate. The
15 incremental risk of a higher debt ratio is more significant for common equity
16 shareholders, whose claim on the cash flow of the Company is secondary to the claim of
17 debt holders. Therefore, the greater the debt service requirement, the less cash flow
18 available for common equity holders. To the extent the equity ratio is reduced, it is
19 necessary to increase the authorized ROE to compensate investors for the greater
20 financial risk associated with a lower equity ratio.

1 **Q. What is Liberty EnergyNorth’s proposed capital structure?**

2 A. The Company is proposing a ratemaking capital structure composed of 55.00 percent
3 common equity and 45.00 percent long-term debt.

4 **Q. Did you conduct an analysis to assess the reasonableness of the requested equity**
5 **ratio?**

6 A. Yes. We compared the Company’s proposed capital structure relative to the actual
7 capital structures of the utility operating subsidiaries of the companies in the proxy group.
8 Since the ROE is set based on the return that is derived from the risk-comparable proxy
9 group, it is reasonable to look to the average capital structure for the proxy group to
10 benchmark the equity ratios for the Company.

11 Specifically, we calculated the average proportion of common equity, long-term debt,
12 short-term debt, and preferred equity for the most recent three years for each of the
13 companies in the proxy group at the operating subsidiary level.⁶⁸ As shown in
14 Attachment AEB/CMW-16, the average common equity ratio for the operating
15 subsidiaries of the proxy group companies was 53.59 percent (representing a range from
16 44.57 percent to 59.79 percent). Given that Liberty EnergyNorth’s proposed equity ratio
17 of 55.00 percent is within the range of equity ratios for the utility operating subsidiaries
18 of the proxy group companies, we consider it to be reasonable.

⁶⁸ Long-term debt includes the current portion of long-term debt, assuming that the current portion would be refinanced with debt at maturity.

1 **Q. Are there other factors that should be considered in setting the Company's capital**
2 **structure?**

3 A. Yes, there are other factors that should be considered in setting the Company's capital
4 structure, namely the challenges that the credit rating agencies have highlighted as
5 placing pressure on the outlook for utilities in 2023.

6 For example, Moody's recently revised its 2023 outlook for the regulated gas and electric
7 utilities sector to "negative" based on ongoing challenges of inflation, increasing interest
8 rates, and higher natural gas prices. Moody's noted that these challenges increase the
9 pressure on customer affordability, and thus face heightened public scrutiny and the
10 ability of utilities to promptly recover their costs. Moody's concluded that regulated
11 utilities' financial metrics are already under pressure with little cushion, and that
12 sustained capital spending is likely as utilities continue to progress towards emissions
13 reductions and net-zero goals. Moody's noted that the outlook could return to stable if
14 regulatory support remains intact, natural gas prices are at a level where utilities are able
15 to recover their fuel and purchased power costs without delay beyond 12 months, overall
16 inflation moderates, interest rates stabilize and/or utilities' aggregate funds from
17 operations-to-debt ratio remains between 14 percent and 15 percent.⁶⁹ While natural gas
18 prices have declined, as noted, inflation and interest rates remain elevated.

⁶⁹ Moody's Investors Service, Outlook. "2023 outlook negative due to higher natural gas prices, inflation and rising interest rates." November 10, 2022; Moody's Investors Service. Outlook, Sector In-Depth. "Inflation, high natural gas prices complicate prospects for supportive rate increases." November 11, 2022.

1 Fitch also highlights similar factors identified by Moody's as challenging utilities'
2 outlook for 2023, stating that the sector faces mounting cost pressures due to "elevated
3 commodity prices, inflationary headwinds and rising interest costs," and that some offset
4 in managing these headwinds include "higher authorized ROEs and the use of tools such
5 as securitization of under-recovered fuel balances."⁷⁰

6 Likewise, while S&P recently revised its outlook for the industry from negative to stable,
7 S&P continues to see significant risks over the near-term for the industry as a result of
8 inflation and increased levels of capital spending. Specifically, S&P noted:

9 Despite the improvement in economic data, we expect inflation, rising
10 interest rates, higher capital spending, and the strategic decision by many
11 companies to operate with only minimal financial cushion from their
12 downgrade thresholds to continue to pressure the industry's credit quality.
13 Throughout 2022 and so far in 2023, the Federal Reserve has consistently
14 raised interest rates to reduce the pace of inflation. While these actions
15 appear to have had a positive effect on slowing inflation, there's still been a
16 modest weakening in the industry's financial measures because of inflation
17 and rising interest rates. An environment of continuously rising costs tends
18 to weaken the industry's financial measures because of the timing difference
19 between when the higher costs are incurred and when they are ultimately
20 recovered from ratepayers.⁷¹

21 The credit ratings agencies' continued concerns over the negative effects of inflation and
22 increased capital expenditures underscore the importance of maintaining adequate cash
23 flow metrics for the industry as a whole, and Liberty EnergyNorth in particular in the
24 context of this proceeding.

⁷⁰ Fitch Ratings. "North American Utilities, Power & Gas Outlook 2023." December 7, 2022, at 1–2.

⁷¹ S&P Global Ratings. "The Outlook for North American Regulated Utilities Turns Stable," May 18, 2023, at 8.

1 **X. CONCLUSIONS AND RECOMMENDATIONS**

2 **Q. What is your conclusion regarding a fair ROE for Liberty EnergyNorth?**

3 A. Figure 12 summarizes the results of our cost of equity analyses. Based on the
4 quantitative and qualitative analyses presented in our direct testimony, and the business
5 and financial risks of the Company as compared to the proxy group, our recommended
6 ROE of 10.35 percent is reasonable.