

STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Docket No. DE 23-039

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Distribution Service Rate Case
Return on Equity

DIRECT TESTIMONY

OF

ANNE E. BULKLEY

AND

CHRISTOPHER M. WALL

April 28, 2023



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1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Please state your names and business addresses.**

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

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

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

8 A. We are submitting this direct testimony before the New Hampshire Public Utilities
9 Commission (“Commission”) on behalf of Liberty Utilities (Granite State Electric) Corp.
10 d/b/a Liberty (“Liberty” or the “Company”).

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

12 A. I hold a Bachelor’s degree in Economics and Finance from Simmons College and a
13 Master’s degree in Economics from Boston University, with over 25 years of experience
14 consulting to the energy industry. I have advised numerous energy and utility clients on a
15 wide range of financial and economic issues with primary concentrations in valuation and
16 utility rate matters. Many of these assignments have included the determination of the
17 cost of capital for valuation and ratemaking purposes. My resume and a listing of the
18 testimony that I have filed in other proceedings are included in Attachment AEB/CMW-
19 1.

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

2 A. I hold a B.A. in Mathematics and Economics from Saint Peter's College, where I
3 graduated Summa Cum Laude, and a Master's degree in Economics from Northeastern
4 University. I have more than ten years of experience consulting in the energy industry; I
5 have been involved with a variety of projects, mostly involving cost of capital, cost of
6 service, demand forecasting, and rate design for natural gas, water, and electric utilities in
7 North America. Many of my assignments over the past few years have focused on the
8 determination of the cost of capital for ratemaking purposes. My resume and a listing of
9 the testimony I have filed in other proceedings are also included in Attachment
10 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. The Company is proposing a capital structure that is
16 composed of 55.00 percent common equity and 45.00 percent long-term debt, and our
17 testimony also reviews the appropriateness of the Company's proposed capital structure.

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"), and
6 a Bond Yield Risk Premium ("BYRP" or "Risk Premium"). Our recommendation also
7 takes into consideration the following factors: (1) the Company's capital expenditure
8 requirements; (2) the regulatory environment in which the Company operates; (3) the
9 Company's automatic rate adjustment mechanisms; (4) flotation costs; and (5) the
10 Company's proposed capital structure as compared to the capital structures of the proxy
11 group companies. While we did not make specific adjustments to our ROE
12 recommendation for these factors, we did consider them in the aggregate when
13 determining where our recommended ROE falls within the range of the analytical results.

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

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

- 16 • Section III provides a summary of our analyses and conclusions.
- 17 • Section IV reviews the regulatory guidelines pertinent to the development of the
18 cost of capital.
- 19 • Section V discusses current and projected capital market conditions and the effect
20 of those conditions on the Company's cost of equity.
- 21 • Section VI explains our selection of a proxy group of electric utilities.

- 1 • Section VII describes our analyses and the analytical basis for our
2 recommendation of the appropriate ROE for Liberty.
- 3 • Section VIII provides a discussion of specific regulatory, business, and financial
4 risks that have a direct bearing on the ROE to be authorized for Liberty in this
5 case.
- 6 • Section IX assesses the Company’s proposed capital structure.
- 7 • Section X presents our conclusions and recommendations.

8 **III. SUMMARY OF ANALYSES AND CONCLUSIONS**

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

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

- 13 • The United States Supreme Court’s Hope and Bluefield decisions¹ established the
14 standards for determining a fair and reasonable authorized ROE for public
15 utilities, including consistency of the allowed return with the returns of other
16 businesses having similar risk, adequacy of the return to provide access to capital
17 and support credit quality, and the requirement that the result leads to just and
18 reasonable rates.
- 19 • The effect of current and prospective capital market conditions on the cost of
20 equity estimation models and on investors’ return requirements.

¹ *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”).

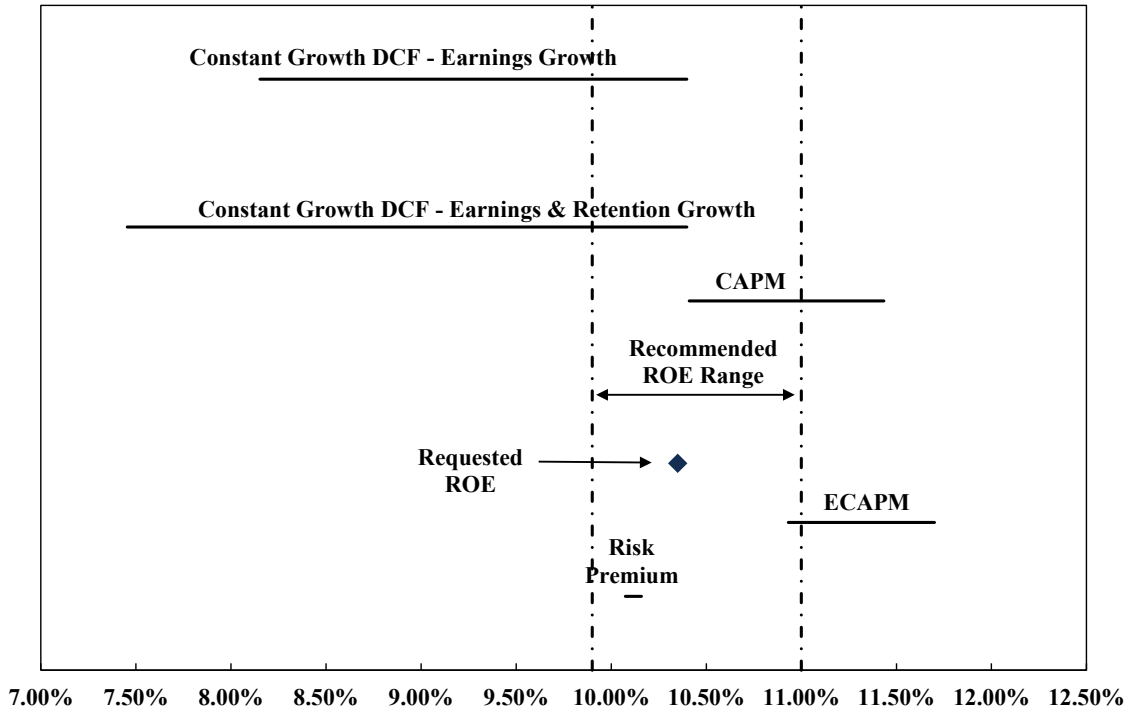
- 1 • The results of several analytical approaches that provide estimates of the
2 Company’s cost of equity. Because the Company’s authorized ROE should be a
3 forward-looking estimate over the period during which the rates will be in effect,
4 these analyses rely on forward-looking inputs and assumptions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

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

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

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Figure 1. Summary of Cost of Equity Analytical Results



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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.

7

8

9

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

10

11

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

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

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

1 **Q. What is your conclusion regarding the appropriate authorized ROE for Liberty in**
2 **this proceeding?**

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

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

9 A. Yes. The Company's proposed equity ratio of 55.00 percent is within the range of equity
10 ratios for the proxy group. Further, the Company's proposed equity ratio is reasonable
11 considering that credit rating agencies have identified the outlook for the utility sector as
12 "negative" due to the negative effect on the cash flows and credit metrics associated with
13 increasing interest rates, inflation, and commodity costs, and the pressure that those
14 factors place on customer affordability and utilities' prompt rate recovery.

15 **IV. REGULATORY PRINCIPLES**

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

18 A. The U.S. Supreme Court's precedent-setting *Hope* and *Bluefield* cases established the
19 standards for determining the fairness or reasonableness of a utility's authorized ROE.
20 Among the standards established by the Court in those cases are: (1) consistency with
21 other businesses having similar or comparable risks; (2) adequacy of the return to support

1 credit quality and access to capital; and (3) that the end result, as opposed to the
2 methodology employed, is the controlling factor in arriving at just and reasonable rates.²

3 **Q. Has the Commission provided similar guidance in establishing the appropriate**
4 **ROE?**

5 A. Yes, it has. In its decision in Docket No. DG 08-009, the Commission stated that it
6 adheres to the capital attraction standard discussed in *Hope* and *Bluefield's* decisions.³

7 Additionally, the Commission noted that it is:

8 [B]ound to set a rate of return that falls within a zone of reasonableness,
9 neither so low to result in a confiscation of company property, nor so high
10 as to result in extortionate charges to customers. A rate falling within that
11 zone should, at a minimum, be sufficient to yield the cost of debt and equity
12 capital necessary to provide the assets required for the discharge of the
13 company's responsibility.⁴

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

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

18 A. No. As the court noted in *Bluefield*, a proper rate of return not only assures "confidence
19 in the financial soundness of the utility and should be adequate, under efficient and
20 economical management, to maintain and support its credit [but also] enable[s the utility]

² *Bluefield*, 262 U.S. at 692-93; *Hope*, 320 U.S. at 603.

³ New Hampshire Public Utilities Commission, Docket No. DG 08-009, Order No. 24,972, May 29, 2009, at 54-55.

⁴ *Id.*, at 54. *See also*, Appeal of Conservation Law Foundation, 127 N.H. 606, 635 (1986).

1 to raise the money necessary for the proper discharge of its public duties.”⁵ As the Court
2 went on to explain in *Hope*, “[t]he rate-making process ... involves balancing of the
3 investor and consumer interests.”⁶

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

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

13 **Q. Is a utility’s ability to attract capital also affected by the ROEs authorized for other**
14 **utilities?**

15 A. Yes. Utilities compete directly for capital with other investments of similar risk, which
16 include other utilities. Therefore, the ROE authorized for a utility sends an important
17 signal to investors regarding whether there is regulatory support for financial integrity,
18 dividends, growth, and fair compensation for business and financial risk. The cost of
19 capital represents an opportunity cost to investors. If higher returns are available for

⁵ *Bluefield*, 262 U.S. at 679, 693.

⁶ *Hope*, 320 U.S. at 591, 603.

1 other investments of comparable risk, over the same time period, investors have an
2 incentive to direct their capital to those alternative investments. Thus, an authorized
3 ROE significantly below authorized ROEs for other utilities can inhibit the utility's
4 ability to attract capital for investment.

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

7 A. Yes. The regulatory framework is one of the most important factors in debt and equity
8 investors' assessments of risk. Specifically regarding debt investors, credit rating
9 agencies consider the authorized ROE and equity ratio for regulated utilities to be very
10 important for two reasons: (1) they help determine the cash flows and credit metrics of
11 the regulated utility; and (2) they provide an indication of the degree of regulatory
12 support for credit quality in the jurisdiction. To the extent that the authorized returns in a
13 jurisdiction are lower than the returns that have been authorized more broadly, credit
14 rating agencies will consider this in the overall risk assessment of the regulatory
15 jurisdiction in which the company operates. Not only do credit ratings affect the overall
16 cost of borrowing, but they also act as a signal to equity investors about the risk of
17 investing in the equity of a company.

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

20 A. The ratemaking process is premised on the principle that, in order for investors and
21 companies to commit the capital needed to provide safe and reliable utility services, a

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

14 **V. CAPITAL MARKET CONDITIONS**

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

16 A. The models used to estimate the cost of equity rely on market data that are specific either
17 to the proxy group, in the case of the DCF model, or to the expectations of market risk, in
18 the case of the CAPM. The results of the cost of equity estimation models can be
19 affected by prevailing market conditions at the time the analysis is performed. While the
20 ROE established in a rate proceeding is intended to be forward-looking, the analyst uses
21 current and projected market data, specifically stock prices, dividends, growth rates, and

1 interest rates, in the cost of equity estimation models to estimate the investor-required
2 return for the subject company.

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

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

12 A. The cost of equity for regulated utility companies is being affected by several factors in
13 the current and prospective capital markets, including: (1) changes in monetary policy;
14 (2) relatively high inflation; and (3) increased interest rates that are expected to remain
15 relatively high over the next few years. These factors affect the assumptions used in the
16 cost of equity estimation models.

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

19 A. As is discussed in more detail in the remainder of this section, the combination of
20 persistently high inflation and the Federal Reserve's changes in monetary policy
21 contributes to an expectation of increased market risk and an increase in the cost of the

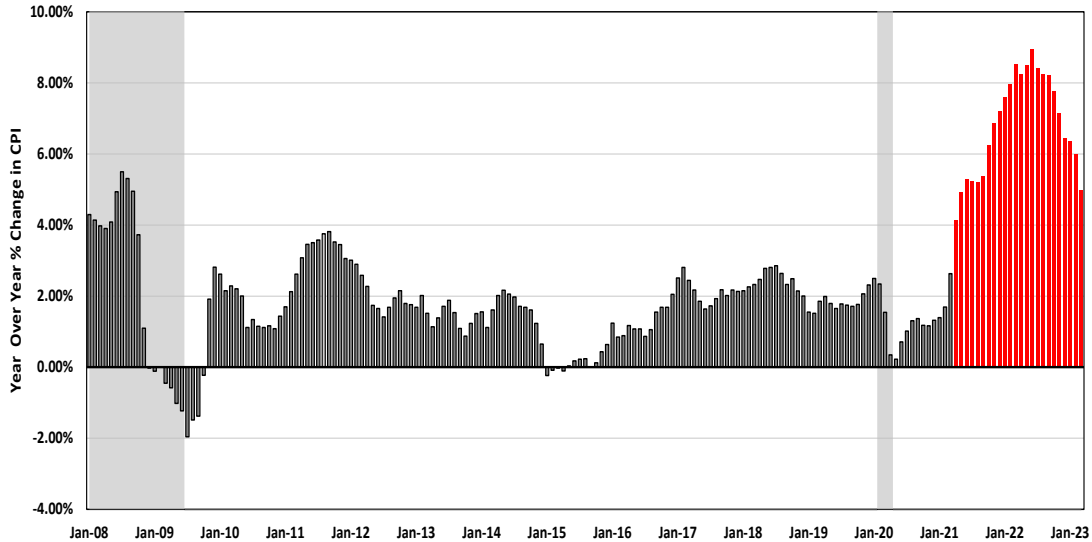
1 investor-required return. These factors must be considered in setting a forward-looking
2 ROE. Inflation has recently been at some of the highest levels seen in approximately 40
3 years. Interest rates, which have increased from the pandemic lows seen in 2020, are
4 expected to continue to increase in direct response to the Federal Reserve’s monetary
5 policy. Since there is a strong historical inverse correlation between interest rates and the
6 share prices of utility stocks (*i.e.*, share prices of utility stocks typically fall when interest
7 rates rise and vice versa), it is reasonable to expect that investors’ required return for
8 utility companies will also continue to increase. Therefore, cost of equity estimates based
9 solely on current market conditions will understate the cost of equity required by
10 investors during the future period that the Company’s rates determined in this proceeding
11 will be in effect.

12 **A. Inflationary Expectations in Current and Projected Capital Market**
13 **Conditions**

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

15 A. Yes. As shown in Figure 2, the year-over-year (“YOY”) change in the Consumer Price
16 Index (“CPI”) published by the Bureau of Labor Statistics has increased steadily since the
17 beginning of 2021, rising from 1.37 percent in January 2021 to a high of 9.0 percent in
18 June 2022, which was the largest 12-month increase since 1981 and significantly greater
19 than any level seen since January 2008. As shown in Figure 2, since that time, while
20 inflation has declined in response to the Federal Reserve’s monetary policy, inflation
21 continues to remain elevated above the Federal Reserve’s target levels.

1 *Figure 2. YOY Percent Change in the Consumer Price Index,*
2 *January 2008 – March 2023⁷*



3
4 **Q. What are the expectations for inflation over the near-term?**

5 A. The Federal Reserve has indicated that it expects inflation will remain elevated above its
6 target level over at least the next year and that it will continue to increase short-term
7 interest rates to reduce inflation. For example, Federal Reserve Chair Powell at the
8 Federal Open Market Committee (“FOMC”) meeting in February 2023 anticipated
9 further increases in the federal funds rate and observed that while inflation is off of its
10 recent highs, it remains significantly above the Federal Reserve’s long-term target:

11 We continue to anticipate that ongoing increases will be appropriate in order
12 to attain a stance of monetary policy that is sufficiently restrictive to return
13 inflation to 2 percent over time.

14

15 Inflation remains well above our longer-run goal of 2 percent. Over the 12
16 months ending in December, total PCE prices rose 5.0 percent; excluding
17 the volatile food and energy categories, core PCE prices rose 4.4 percent.

7 Bureau of Labor Statistics, shaded area indicates a recession.

1 The inflation data received over the past three months show a welcome
2 reduction in the monthly pace of increases. And while recent developments
3 are encouraging, we will need substantially more evidence to be confident
4 that inflation is on a sustained downward path.

5

6 With today's action, we have raised interest rates by 4-1/2 percentage points
7 over the past year. We continue to anticipate that ongoing increases in the
8 target range for the federal funds rate will be appropriate in order to attain
9 a stance of monetary policy that is sufficiently restrictive to return inflation
10 to 2 percent over time.

11

12 At the December meeting, we all wrote down our best estimates of what we
13 thought the ultimate level would be [of the federal funds rate], and that's
14 obviously back in December. And the median for that was between five and
15 five and a quarter percent. At the March meeting, we're going to update
16 those assessments. We did not update them today. We did, however,
17 continue to say that we believe ongoing rate hikes will be appropriate to
18 attain a sufficiently restrictive stance of policy to bring inflation back down
19 to 2 percent. We think we've covered a lot of ground, and financial
20 conditions have certainly tightened. I would say we still think there's work
21 to do there. We haven't made a decision on exactly where that will be. I
22 think, you know, we're going to be looking carefully at the incoming data
23 between now and the March meeting and then the May meeting. I don't feel
24 a lot of certainty about where that will be. It could certainly be higher than
25 we're writing down right now. If we come to the view that we need to write
26 down to -- you know, to move rates up beyond what we said in December
27 we would certainly do that. At the same time, if the data come in, in the
28 other direction then we'll -- you know, we'll make data-dependent decisions
29 at coming meetings, of course.⁸

30 Most recently, on March 22, 2023, the Federal Reserve again raised interest rates by one-
31 quarter of a percentage point.⁹ In addition, the Federal Reserve reiterated its long-term

⁸ Transcript. Chair Powell Press Conference, February 1, 2023; clarification added.

⁹ Federal Reserve, "Implementation Note issued March 22, 2023," March 22, 2023, <https://www.federalreserve.gov/newsevents/pressreleases/monetary20230322a1.htm>.

1 target of 2 percent inflation and its commitment to get to this target.¹⁰ The Federal
2 Reserve believes that there is significant progress that needs to be made to bring inflation
3 to its long-term target of 2 percent. Indeed, as Chair Powell stated in a recent press
4 conference, “[r]educing inflation is likely to require a period of below-trend growth and
5 some softening in labor market conditions.”¹¹

6 **B. The Use of Monetary Policy to Address Inflation**

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

9 A. The dramatic increase in inflation has prompted the Federal Reserve to pursue an
10 aggressive normalization of monetary policy, removing the accommodative policy
11 programs used to mitigate the economic effects of COVID-19. Beginning in March 2022
12 and through March 22, 2023, the Federal Reserve increased the target federal funds rate
13 through a series of increases from 0.00 – 0.50 percent to 4.75 percent to 5.00 percent.¹²
14 The Federal Reserve anticipates the continued need to maintain the Federal Funds rate at
15 a restrictive level in order to achieve its goal of 2 percent inflation over the long run.¹³

¹⁰ Federal Reserve, Press Release, “Federal Reserve issues FOMC Statement,” March 22, 2023, <https://www.federalreserve.gov/newsevents/pressreleases/monetary20230322a.htm> (“In determining the extent of future increases in the target range, the Committee will take into account the cumulative tightening of monetary policy, the lags with which monetary policy affects economic activity and inflation, and economic and financial developments. In addition, the Committee will continue reducing its holdings of Treasury securities and agency debt and agency mortgage-backed securities, as described in its previously announced plans. The Committee is strongly committed to returning inflation to its 2 percent objective”).

¹¹ Federal Reserve, Transcript of Chair Powell’s Press Conference, March 22, 2023, p. 4, <https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20230322.pdf>.

¹² Federal Reserve, Press Releases, March 16, 2022, May 4, 2022, June 15, 2022, September 22, 2022, November 2, 2022, February 1, 2023, and March 22, 2023.

¹³ Federal Reserve, Press Release, “Federal Reserve issues FOMC statement,” March 22, 2023, <https://www.federalreserve.gov/newsevents/pressreleases/monetary20230322a.htm>.

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

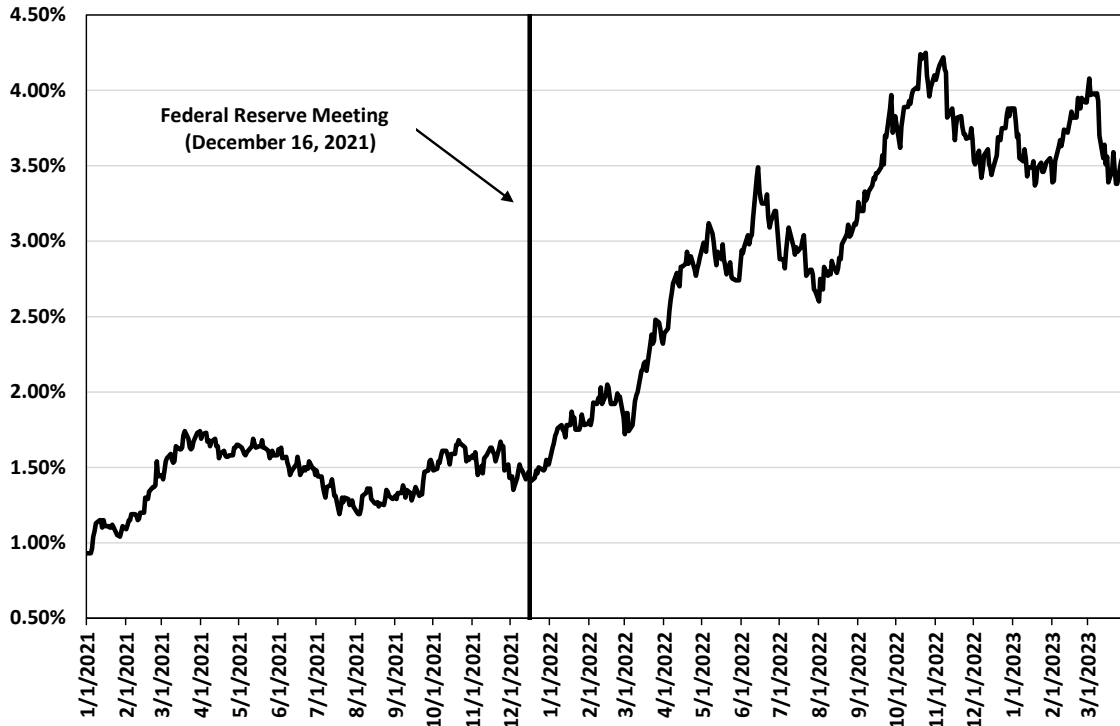
3 **Q. What effect will inflation and the Federal Reserve’s normalization of monetary**
4 **policy have on long-term interest rates?**

5 A. Inflation and the Federal Reserve’s normalization of monetary policy are expected to
6 result in long-term interest rates remaining relatively high over at least the next year.
7 Specifically, inflation reduces the purchasing power of the future interest payments an
8 investor expects to receive over the duration of the bond. This risk increases the longer
9 the duration of the bond. As a result, if investors expect inflation to remain relatively
10 high, they will require higher yields to compensate for the increased risk of inflation,
11 which means interest rates will also remain relatively high.

12 **Q. Have the yields on long-term government bonds increased in response to inflation**
13 **and the Federal Reserve’s normalization of monetary policy?**

14 A. Yes. At the FOMC meetings throughout 2022 and thus far into 2023, the Federal
15 Reserve has continued to note its concerns over the sustained increased levels of inflation
16 and has continued to accelerate the process of normalizing monetary policy to combat
17 inflation. As shown in Figure 3, since the Federal Reserve’s December 2021 meeting,
18 the yield on 10-year Treasury bonds has more than doubled, increasing from 1.47 percent
19 on December 15, 2021, to 3.48 percent on March 31, 2023. The increase is due to the
20 Federal Reserve’s announcements at each of the meetings since December 2021 and the
21 continued elevated levels of inflation.

1 *Figure 3: 10-Year Treasury Bond Yield, January 2021– March 2023¹⁴*



2

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

4 A. Leading equity analysts have noted that they expect the yields on long-term government
5 bonds to remain elevated through at least the end of 2023. According to the most recent
6 *Blue Chip Financial Forecasts* report, the consensus estimate of the average yield on the
7 10-year Treasury bond is approximately 3.40 percent through the third quarter of 2024.¹⁵

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

9 A. As shown in Figure 4, when the Commission authorized an ROE of 9.10 percent at the
10 conclusion of the Company's 2019 rate proceeding, interest rates (as measured by the 30-

¹⁴ S&P Capital IQ Pro.

¹⁵ *Blue Chip Financial Forecasts*, Vol. 42, No. 4, March 31, 2023.

1 year Treasury bond yield) were 1.47 percent and inflation was 0.73 percent. However,
2 since the Company’s last rate proceeding, long-term interest rates have increased 2.5
3 times, and, as discussed, inflation is also substantially higher.

4 *Figure 4: Change in Market Conditions Since Liberty’s Last Rate Case¹⁶*

Docket	Date	Federal Funds Rate	30-Day Avg of 30-Year Treasury Bond Yield	Inflation Rate	Auth'd ROE
DE 19-064	6/30/2020	0.08%	1.47%	0.72%	9.10%
Current	3/31/2023	4.65%	3.81%	5.99%	

5

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

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

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

¹⁶ 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).¹⁷

3 **Q. How do equity analysts expect the utilities sector to perform in an increasing**
4 **interest 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,¹⁸ 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

¹⁷ Lee, Justina. "Wall Street Is Rethinking the Treasury Threat to Big Tech Stocks." Bloomberg.com, March 11, 2021.

¹⁸ Fidelity. "First Quarter 2023 Investment Research Update." February 8, 2023.

1 seeing regulators getting 'creative' with assumptions and rate mechanisms
2 to achieve that goal,” she added.

3 Karp said she would focus on rate affordability, as inflationary pressures
4 will likely be a factor for the foreseeable future.

5 “As we turn to 2023, we believe that the sector will find it difficult to defend this
6 relative valuation position, particularly as macro headwinds persist and begin to
7 take a toll on utility earnings,” she added.¹⁹

8 Similarly, Barron’s recently noted that the decline in share prices can be attributed to the
9 relatively high valuations and low dividend yields of utilities as compared to other asset
10 classes such as Treasuries.²⁰ According to Barron’s, even after the recent decline in share
11 prices, the Utilities Select ETF was yielding 2.85 percent, which is a yield that will not
12 “lure in buyers when the ultrasafe 10-year Treasury note yields close to 4%.”²¹

13 **Q. Do standard market indicators support analysts’ position that utilities will**
14 **underperform over the near-term?**

15 A. Yes. As discussed, the utility sector is considered a “bond proxy” or a sector that
16 investors view as a “safe haven” alternative to bonds, and changes in utility stock prices
17 are therefore inversely related to changes in interest rates. For example, the utility sector
18 tends to perform well when interest rates are low since the dividend yields for utilities
19 offer investors the prospect of higher returns when compared to the yields on long-term
20 government bonds. Therefore, we examined the difference between the dividend yields

¹⁹ 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).

²⁰ Sonenshine, Jacob. “Utilities Stocks Have Fallen off a Cliff. They Just Got Downgraded, Too.” Barron’s, October 17, 2022.

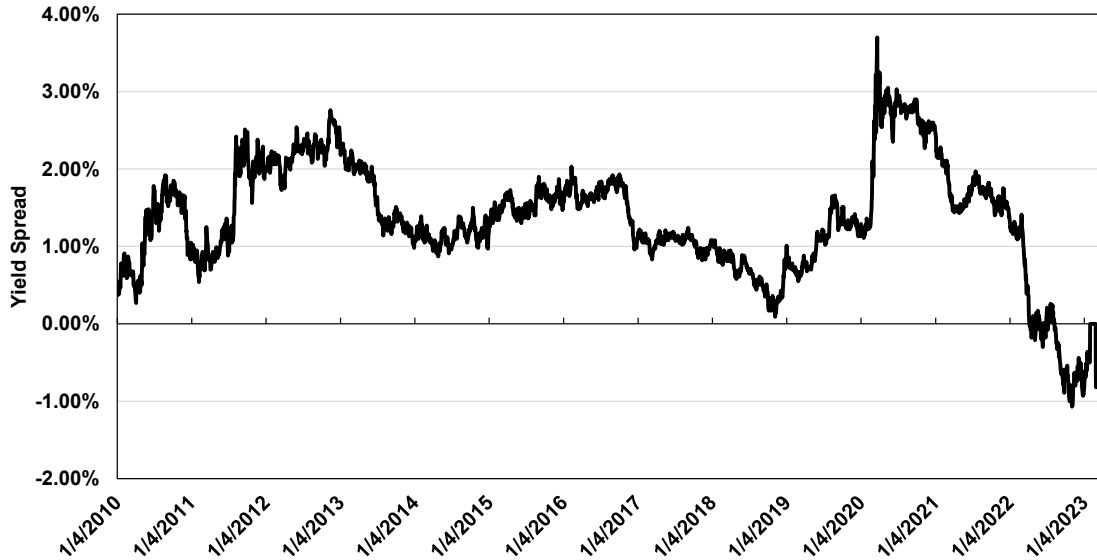
²¹ *Id.*

1 of utility stocks and the yields on long-term government bonds (the “yield spread”). We
2 selected the dividend yield on the S&P Utilities Index as the measure of the dividend
3 yields for the utility sector and the yield on the 10-year Treasury bond as the estimate of
4 the yield on long-term government bonds.

5 As shown in Figure 5, the yield spread as of March 31, 2023, was negative 0.35 percent,
6 meaning that the yield on the 10-year Treasury bond exceeds the dividend yield for the
7 S&P Utilities Index. Furthermore, the current negative yield spread is well below the
8 long-term average yield spread since 2010 of 1.34 percent. Given that the yield spread is
9 currently well below the long-term average, as well as the expectation that interest rates
10 will remain relatively high through at least through the next year, it is reasonable to
11 conclude that the utility sector will most likely underperform over the near-term. This is
12 because investors that purchased utility stocks as an alternative to the lower yields on
13 long-term government bonds would otherwise be inclined to rotate back into government
14 bonds, particularly as the yields on long-term government bonds remain elevated, thus
15 resulting in a decrease in the share prices of utilities.

1
2

Figure 5: Spread between the S&P Utilities Index Dividend Yield and the 10-year Treasury Bond Yield, January 2010 – March 2023²²



3

4 **Q. Do you have any further context as to how unlikely it is to have a negative yield**
5 **spread of this magnitude?**

6 A. Yes. For further context as to how unlikely it is to have a yield spread of negative 0.35
7 percent, we calculated the z-score for the current yield spread, which measures the
8 number of standard deviations from the mean. The current yield spread of negative 0.35
9 percent has a z-score of -2.24, indicating that a yield spread of negative 0.35 percent is
10 over 2 standard deviations from the mean of 1.34 percent.²³ In other words, 95 percent of
11 the daily yield spread observations from 2010 through March 2023 fall between -0.17
12 percent and 2.84 percent, with the current yield spread of negative 0.35 percent being

²² S&P Capital IQ Pro and Bloomberg Professional.

²³ The z-score is calculated as: (yield spread at March 31, 2023 minus average yield spread 2010 through March 2023)/standard deviation of yield spread from 2010 through March 2023. This equals: (-0.35 minus 1.34)/ADD.

1 outside of that range. Thus, the current yield spread is an outlier, which is why equity
2 analysts do not expect this current level to hold.

3 **E. Conclusion**

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

6 A. Investors expect long-term interest rates to remain relatively high through 2023, in
7 response to continued elevated levels of inflation and the Federal Reserve's
8 normalization of monetary policy. Because the share prices of utilities are inversely
9 correlated to interest rates, and government bond yields are already substantially greater
10 than utility stock dividend yields, the share prices of utilities are likely to continue to
11 decline, which is the reason a number of equity analysts have classified the sector as
12 either underperform or underweight. The expected underperformance of utilities means
13 that DCF models using recent historical data likely underestimate investors' required
14 return over the period that rates will be in effect. Therefore, this expected change in
15 market conditions supports consideration of the higher end of the range of cost of equity
16 results produced by the DCF models. Moreover, prospective market conditions warrant
17 consideration of forward-looking cost of equity estimation models such as the CAPM and
18 ECAPM, which better reflect expected market conditions.

1 **VI. PROXY GROUP SELECTION**

2 **Q. Please provide a brief profile of Liberty.**

3 A. Liberty provides electric-only distribution services to approximately 46,000 customers in
4 21 communities in New Hampshire.²⁴ Liberty is a wholly-owned subsidiary of Liberty
5 Utilities Company (“LUCo”), which is a wholly-owned subsidiary of Algonquin Power
6 & Utilities Corporation (“APUC”). LUCo is a utility holding company that owns
7 electric, natural gas, water, and wastewater utilities across 13 states. APUC is based in
8 Ontario, Canada, and its stock is traded on the New York Stock Exchange (“NYSE”) and
9 the Toronto Stock Exchange. APUC owns regulated utility companies and renewable
10 generation assets in jurisdictions throughout North America. Liberty is not currently
11 rated by any credit rating agency. LUCo has a long-term rating of Baa2 from Moody’s
12 (Outlook: Stable).²⁵ APUC has a long-term rating of BBB (Outlook: Negative) from
13 S&P and Baa2 (Outlook: Stable) from Moody’s.²⁶

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

16 A. One of the purposes of this proceeding is to estimate the cost of equity for an electric
17 utility company that is not itself publicly traded. Because the cost of equity is a market-
18 based concept and because Liberty’s operations do not make up the entirety of a publicly
19 traded entity, it is necessary to establish a group of companies that are both publicly

²⁴ Liberty Utilities (Granite State Electric Corp.), FERC Form 1, May 16, 2022.

²⁵ Moody’s Investors Service. Credit Opinion. September 16, 2022.

²⁶ S&P Global Ratings. October 31, 2022; Moody’s Investors Service.

1 traded and comparable to the Company in certain fundamental business and financial
2 respects to serve as its “proxy” in the cost of equity estimation process.

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

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

11 A. We began with the group of 36 companies that *Value Line* classifies as electric utilities
12 and applied the following screening criteria to select companies that:

- 13 • pay consistent quarterly cash dividends, since companies that do not cannot be
14 analyzed using the constant growth DCF model;
- 15 • have positive long-term earnings growth forecasts from at least two equity
16 analysts;
- 17 • have investment grade long-term issuer ratings from both S&P and Moody’s;
- 18 • were not party to a merger or transformative transaction during the analytical
19 period considered; and
- 20 • derive at least 70 percent of the Company’s operating income from regulated
21 electric operations.

1 **Q. Did you exclude any other companies from the proxy group?**

2 A. Yes. We also excluded Pinnacle West Capital Corporation (“PNW”) and Hawaiian
3 Electric Industries, Inc. (“HE”). Specifically, PNW should be excluded from the proxy
4 group based on the adverse market reaction and credit rating actions resulting from a
5 negative rate case determination for Arizona Public Service (“APS”), PNW’s electric
6 utility operating subsidiary. In APS’s most recently completed rate case, the Arizona
7 Corporation Commission (“AZCC”) reduced the authorized ROE for APS from 10.00
8 percent to 8.70 percent, even though the Administrative Law Judge had recommended an
9 ROE of 9.16 percent.²⁷ As a result of this rate case decision, credit rating agencies
10 instituted negative ratings actions, PNW’s stock price fell significantly, and the
11 company’s projected earnings growth rate estimates were reduced to zero or nearly zero.
12 For example, after the decision, APS’s projected EPS growth rates reported by IBES
13 were reduced to nearly zero. In addition, the five-year projected EPS growth rates
14 published by Value Line for APS fell from 5.0 percent in July 2021 prior to the
15 deliberations in the rate proceeding to “Nil” in October 2021, and most recently are at
16 just 0.5 percent as of January 2023. Value Line noted the following in its July 2022
17 report on PNW:

18 Pinnacle West stock is still reeling from the regulatory thrashing the
19 company suffered late last year. The issue has lost over 30% of its value
20 from mid-2021, when it started to become apparent that things would not
21 go the company’s way in its general rate case. When the decision arrived in
22 November, Pinnacle West saw its allowed return on equity (ROE) reduced
23 from 10% to 8.7% (the lowest level in the U.S.), and its annual earning
24 power cut by \$0.90 per share. There were some strong relief rallies based

²⁷ Arizona Corporation Commission, ALJ Recommended Opinion and Order, August 2, 2021, at 322.

1 on the hope for restitution, but that sentiment has faded, as its utility
2 subsidiary (APS) has been unsuccessful in its bid for a judiciary appeal. In
3 December, it filed a petition for special action with the Arizona Supreme
4 Court, but was turned down. APS also put in a request to argue its case
5 before the state Court of Appeals, but has received no response.²⁸

6 In January 2023, *Value Line* reiterated PNW’s difficulties in 2022 and stated that 2023
7 “probably won’t be significantly better,” noting that APS’s ROE issues have been quite
8 volatile over the past 18 months and that investors have been trying to gauge if the
9 setback would be permanent or not.²⁹ Based on the fact that the assumptions used in the
10 DCF model have been affected significantly by PNW’s last rate decision, we have
11 excluded PNW from our proxy group.

12 We have also excluded HE on the basis that its operations are concentrated on the islands
13 of Hawaii, and therefore, the company faces geographic concentration risk for both its
14 regulated and substantial unregulated operations not applicable to the other utilities
15 considered. As HE noted in its 2021 Form10-K:

16 The Company is subject to the risks associated with the geographic
17 concentration of its businesses and current lack of interconnections that
18 could result in service interruptions at the Utilities or higher default rates on
19 loans held by ASB [American Savings Bank].³⁰

20 The increased risk of service interruptions resulting from HE’s geographic location that
21 could result in revenue loss and increased costs is a risk unique to HE and would not

²⁸ *Value Line*, Pinnacle West, October 21, 2022.

²⁹ *Value Line*, Pinnacle West, January 20, 2023.

³⁰ Hawaii Electric Industries, Inc., 2021 Form 10-K, at 23.

1 apply to utilities located on the U.S. mainland. Furthermore, HE’s unregulated
2 operations, which represent approximately 33 percent of the company’s operating income
3 in 2021, are concentrated in the banking sector through the ownership of American
4 Savings Bank (“ASB”).³¹ ASB also only operates in Hawaii; thus, all of the company’s
5 consumer and commercial loans are to customers in Hawaii. If Hawaii were to face an
6 adverse economic or political event, ASB could face severe financial effects given the
7 company’s geographic concentration in Hawaii.³² As a result, we have excluded HE
8 from our proxy group considering HE’s unique geographical risks.

9 **Q. What is the composition of your proxy group?**

10 A. Our proxy group consists of the 17 companies shown in Figure 6.

11 *Figure 6: Proxy Group*

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avista Corporation	AVA
Duke Energy Corporation	DUK
Edison International	EIX
Entergy Corporation	ETR
Eversource Energy	ES
Evergy, Inc.	EVRG
IDACORP, Inc.	IDA
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE

³¹ *Id.*, at 86.

³² *Id.*, at 20.

Company	Ticker
Otter Tail Corporation ³³	OTTR
Portland General Electric	POR
Xcel Energy Inc.	XEL

1

2 **VII. COST OF EQUITY ESTIMATION**

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

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

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

11 A. The required cost of equity is estimated by using analytical techniques that rely on
12 market-based data to quantify investor expectations regarding equity returns, adjusted for
13 certain incremental costs and risks. Informed judgment is then applied to determine
14 where the company's cost of equity falls within the range of results produced by multiple
15 analytical techniques. The key consideration in determining the cost of equity is to

³³ Otter Tail Corporation had one year of anomalous financial results, causing their operating income from regulated electric operations to fall below 70% (Page 4 of Otter Tail's 2021 10-K states, "Our 2021 earnings mix was impacted by significantly higher earnings in our Plastics segment as unique supply and demand conditions during the year in the PVC pipe industry led to earnings levels not previously experienced. We expect our earnings mix to return back to our targeted 70% from the Electric segment and 30% from Manufacturing and Plastics segment over the long term as this industry conditions subside." Given these anomalous conditions, Otter Tail was included in the proxy sample.

1 ensure that the methodologies employed reasonably reflect investors' views of the
2 financial markets in general, as well as the subject company in the context of the proxy
3 group, in particular.

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

5 A. We considered the results of the constant growth DCF model, the CAPM, and a Bond
6 Yield Plus Risk Premium analysis. As discussed in more detail below, a reasonable cost
7 of equity estimate appropriately considers alternative methodologies and the
8 reasonableness of their individual and collective results.

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

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

12 A. Yes. Because the cost of equity is not directly observable, it must be estimated based on
13 both quantitative and qualitative information. When faced with the task of estimating the
14 cost of equity, analysts and investors are inclined to gather and evaluate as much relevant
15 data as reasonably can be analyzed. Several models have been developed to estimate the
16 cost of equity, and we use multiple approaches to estimate the cost of equity. As a
17 practical matter, however, all the models available for estimating the cost of equity are
18 subject to limiting assumptions or other methodological constraints. Consequently, many
19 well-regarded finance texts recommend using multiple approaches when estimating the

1 cost of equity. For example, Copeland, Koller, and Murrin³⁴ suggest using the CAPM
2 and Arbitrage Pricing Theory model, while Brigham and Gapenski³⁵ recommend the
3 CAPM, DCF, and Bond Yield Plus Risk Premium approaches.

4 **Q. Do current market conditions support your reliance on more than one analytical**
5 **approach?**

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

³⁴ 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.

³⁵ Brigham, Eugene and Louis Gapenski. *Financial Management: Theory and Practice*. Orlando, Dryden Press, 1994, at 341.

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

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

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

6
$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

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

10
$$k = \frac{D_0(1+g)}{P_0} + g \quad [2]$$

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

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

14 A. The constant growth DCF model requires the following four assumptions: (1) a constant
15 growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant
16 price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To
17 the extent that any of these assumptions are not objectively valid, considered judgment
18 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 January 31, 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 (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:
13 (1) 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. DE 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.³⁶ 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.³⁷ 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.³⁸

12 **Q. As a result of the Commission's decision, have you considered additional long-term**
13 **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.

³⁶ New Hampshire Public Utilities Commission, Docket No. DG 08-009, Order No. 24,972, May 29, 2009, at 62.

³⁷ *Id.*, at 63.

³⁸ *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 "br + sv" form of the retention growth estimate used in our DCF analysis is meant to
11 reflect growth from both internally-generated funds (*i.e.*, the "br" term) and from
12 issuances of equity (*i.e.*, the "sv" term). While the first term represents the portion of net
13 income that is "plowed back" into the company as a means of funding growth, the "sv"
14 term can be represented as:

15
$$\left(\frac{m}{b} - 1\right) \times \text{common shares growth rate [3]}$$

16 Where:

17
$$\frac{m}{b} = \text{the market to book ratio.}$$

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

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

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

2 A. While we considered DPS and BVPS growth rates, we did not rely on either of these
3 growth rates as a long-term growth estimate in the constant growth DCF model. There
4 are several reasons why reliance on *Value Line* projections of DPS growth and BVPS
5 growth is not appropriate. First, the use of dividend and book value growth rates ignores
6 the academic research demonstrating that earnings growth rates are most relevant in stock
7 price valuation.³⁹ Second, projections of dividend growth are entirely dependent on
8 dividend policy and only measure a portion of the growth experienced by the company,
9 and estimates of book value growth are also highly influenced by dividend policy and
10 how earnings are invested between assets and liabilities. Investing earnings in assets or
11 paying down debt will both increase BVPS (all else equal) but paying dividends will
12 decrease BVPS. Therefore, projections of earnings growth provide a more robust
13 estimate of total company growth and are not influenced by the effects of subsequent
14 investment and dividend payment policies as is the case with both DPS and BVPS growth
15 rates.

³⁹ 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 **Q. How did you calculate the range of results for the constant growth DCF models?**

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

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

9 A. Figure 7 summarizes the results of our DCF analyses. As shown in Figure 7, the mean
10 DCF results using the average growth rates range from 9.09 percent to 9.46 percent, and
11 the mean results using the maximum growth rates range from 10.33 percent to 10.48
12 percent. While we also summarize the DCF results using the minimum growth rates,
13 given the expected underperformance of utility stocks going forward and thus the
14 likelihood that the DCF model is understating the cost of equity, we do not believe it is
15 appropriate to consider these DCF results at this time.

1

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	8.09%	9.32%	10.33%
90-Day Avg. Stock Price	8.23%	9.46%	10.48%
180-Day Avg. Stock Price	8.14%	9.37%	10.38%
Average	8.15%	9.38%	10.40%

<i>Constant Growth DCF - Earnings & Retention Growth</i>			
	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
30-Day Avg. Stock Price	7.39%	9.09%	10.33%
90-Day Avg. Stock Price	7.53%	9.23%	10.48%
180-Day Avg. Stock Price	7.44%	9.13%	10.38%
Average	7.45%	9.15%	10.40%

2

3 **Q. Have regulatory commissions acknowledged that the DCF model might understate**
4 **the cost of equity given the current capital market conditions of high inflation and**
5 **increased interest rates?**

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

11 To help control rising inflation, the Federal Open Market Committee has
12 signaled that it is ending its policies designed to maintain low interest rates.
13 Aqua Exc. at 9. Because the DCF model does not directly account for
14 interest rates, consequently, it is slow to respond to interest rate changes.
15 However, I&E’s CAPM model uses forecasted yields on ten-year Treasury
16 bonds, and accordingly, its methodology captures forward looking changes
17 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.⁴⁰

17

18 We have previously determined, above, that we shall utilize I&E's DCF and
19 CAPM methodologies. I&E's DCF and CAPM produce a range of
20 reasonableness for the ROE in this proceeding from 8.90% [DCF] to 9.89%
21 [CAPM]. Based upon our informed judgment, which includes
22 consideration of a variety of factors, including increasing inflation leading
23 to increases in interest rates and capital costs since the rate filing, we
24 determine that a base ROE of 9.75% is reasonable and appropriate for
25 Aqua.⁴¹

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 exceed utility dividend yields, it is important to consider the results of the DCF models

⁴⁰ Pennsylvania Public Utility Commission, Docket Nos. R-2021-3027385 and R-2021-3027386, Opinion and Order, May 12, 2022, pp. 154–155.

⁴¹ *Id.*, pp. 177–178.

1 with caution. Therefore, while we have given weight to the results of the constant growth
2 DCF model, our recommendation also gives weight to the results of other cost of equity
3 estimation models.

4 **C. CAPM Analysis**

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

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

12 The CAPM is defined by four components:

13
$$K_e = r_f + \beta(r_m - r_f) \quad [3]$$

14 Where:

15 K_e = the required market ROE;
16 β = beta coefficient of an individual security;
17 r_f = the risk-free rate of return; and
18 r_m = the required return on the market.

19 In this specification, the term $(r_m - r_f)$ represents the market risk premium. According to
20 the theory underlying the CAPM, because unsystematic risk can be diversified away,
21 investors should only be concerned with systematic or non-diversifiable risk. Non-
22 diversifiable risk is measured by beta, which is defined as:

$$\beta = \frac{\text{Covariance}(r_e, r_m)}{\text{Variance}(r_m)} \quad [4]$$

1
2 The variance of the market return (i.e., Variance (rm)) is a measure of the uncertainty of
3 the general market, and the Covariance between the return on a specific security and the
4 general market (i.e., Covariance (re, rm)) reflects the extent to which the return on that
5 security will respond to a given change in the general market return. Thus, beta
6 represents the risk of the security relative to the general market.

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

8 A. We rely on three sources for our estimate of the risk-free rate: (1) the current 30-day
9 average yield on 30-year Treasury bonds, which is 3.71 percent;⁴² (2) the average
10 projected 30-year Treasury bond yield for the second quarter of 2023 through the second
11 quarter of 2024, which is 3.82 percent;⁴³ and (3) the average projected 30-year Treasury
12 bond yield for 2024 through 2028, which is 3.90 percent.⁴⁴

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

14 A. As shown in Attachment AEB/CMW-7, we use the beta coefficients for the proxy group
15 companies as reported by Bloomberg and *Value Line*. The beta coefficients reported by
16 Bloomberg are calculated using ten years of weekly returns relative to the S&P 500
17 Index. The beta coefficients reported by *Value Line* are calculated using five years of
18 weekly returns relative to the NYSE Composite Index. Additionally, as shown in

⁴² Bloomberg Professional as of January 31, 2023.

⁴³ *Blue Chip Financial Forecasts*, Vol. 42, No. 2, February 1, 2023, at 2.

⁴⁴ *Blue Chip Financial Forecasts*, Vol. 41, No. 12, December 2, 2022, at 14.

1 Attachments AEB-7 and AEB-8, we consider another CAPM analysis that relies on the
2 long-term average beta coefficient for the companies in our proxy group, which is
3 calculated as an average of the *Value Line* beta coefficients for the companies in our
4 proxy group from 2013 through 2022.

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

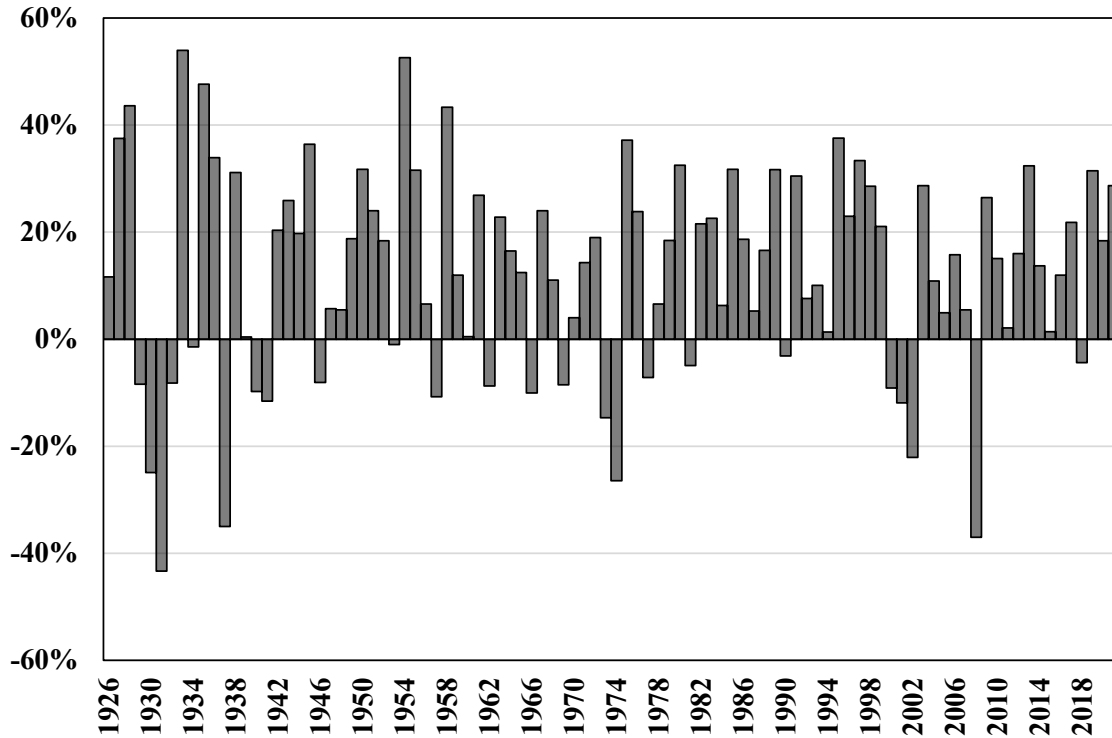
6 A. We estimate the market risk premium as the difference between the implied expected
7 equity market return and the risk-free rate. As shown in Attachment AEB/CMW-9, the
8 expected market return is calculated using the constant growth DCF model discussed
9 earlier in our testimony for the companies in the S&P 500 Index. Based on an estimated
10 market capitalization-weighted dividend yield of 1.75 percent and a weighted long-term
11 growth rate of 10.65 percent, the estimated required market return for the S&P 500 Index
12 as of January 31, 2023, is 12.50 percent. Based on the three risk-free rates considered,
13 the market risk premium ranges from 8.60 percent to 8.79 percent.

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

16 A. As shown in Figure 8, given the range of annual equity returns that have been observed
17 over the past century, a current expected market return of 12.50 percent is not
18 unreasonable. As shown, in 50 out of the past 96 years (or roughly 52 percent of
19 observations), the realized equity market return was 12.50 percent or greater.

1

Figure 8: Realized U.S. Equity Market Returns (1926-2021)⁴⁵



2

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

4 A. Yes. We have also considered the results of an ECAPM analysis in estimating the cost of
5 equity for Liberty.⁴⁶ The ECAPM calculates the product of the adjusted beta coefficient
6 and the market risk premium and applies a weight of 75.00 percent to that result. The
7 model then applies a 25.00 percent weight to the market risk premium without any effect
8 from the beta coefficient. The results of the two calculations are summed, along with the
9 risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

10

$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [5]$$

⁴⁵ Depicts total annual returns on large company stocks, as reported in the 2022 *Kroll S&P 500 Yearbook*.

⁴⁶ See, e.g., Morin, Roger A. *New Regulatory Finance*. Public Utilities Reports, Inc., 2006, at 189.

1 Where:

- 2 k_e = the required market ROE
3 β = adjusted beta coefficient of an individual security
4 r_f = the risk-free rate of return
5 r_m = the required return on the market as a whole

6 In essence, the ECAPM addresses the tendency of the “traditional” CAPM to
7 underestimate the cost of equity for companies with low beta coefficients such as
8 regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted
9 betas in the traditional CAPM, but rather it recognizes the results of academic research
10 indicating that the risk-return relationship is different (in essence, flatter) than estimated
11 by the CAPM, and that the CAPM underestimates the “alpha,” or the constant return
12 term.⁴⁷

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

17 **Q. What are the results of your CAPM analyses?**

18 A. As shown in Figure 9 (*see* also Attachment AEB/CMW-7), our traditional CAPM
19 analysis produces a range of returns from 10.41 percent to 11.43 percent, and the
20 ECAPM analysis results range from 10.93 percent to 11.70 percent.

⁴⁷ *Id.*, at 191.

1

Figure 9: APM 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	11.41%	11.42%	11.43%
Current Bloomberg Beta	10.83%	10.85%	10.87%
Long-term Avg. <i>Value Line</i> Beta	10.41%	10.44%	10.46%
ECAPM:			
Current <i>Value Line</i> Beta	11.68%	11.69%	11.70%
Current Bloomberg Beta	11.25%	11.26%	11.28%
Long-term Avg. <i>Value Line</i> Beta	10.93%	10.95%	10.97%

2

3

D. Bond Yield Plus Risk Premium Analysis

4

Q. Please describe the Bond Yield Plus Risk Premium approach.

5

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as bondholders. In other words, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Thus, risk premium approaches estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. In our analysis, we use actual authorized returns for electric distribution companies as the historical measure of the cost of equity to determine the risk premium.

12

1 **Q. Are there other considerations that should be addressed in conducting this analysis?**

2 A. Yes. It is important to recognize both academic literature and market evidence indicating
3 that the equity risk premium (as used in this approach) is inversely related to the level of
4 interest rates (*i.e.*, as interest rates increase, the equity risk premium decreases, and vice
5 versa). Consequently, it is important to develop an analysis that: (1) reflects the inverse
6 relationship between interest rates and the equity risk premium; and (2) relies on recent
7 and expected market conditions. Such an analysis can be developed based on a
8 regression of the risk premium as a function of Treasury bond yields. When the
9 authorized ROEs for electric utilities serve as the measure of required equity returns and
10 the yield on the long-term Treasury bond is defined as the relevant measure of interest
11 rates, the risk premium is the difference between those two points.⁴⁸

12 **Q. Is the Bond Yield Plus Risk Premium analysis relevant to investors?**

13 A. Yes. Investors are aware of authorized ROEs in other jurisdictions, and they consider
14 those authorizations as a benchmark for a reasonable level of equity returns for utilities of
15 comparable risk operating in other jurisdictions. Because our Bond Yield Plus Risk
16 Premium analysis is based on authorized ROEs for utility companies relative to
17 corresponding Treasury yields, it provides relevant information to assess the return
18 expectations of investors in the current interest rate environment.

⁴⁸ 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 **Q. What did your Bond Yield Plus Risk Premium analysis reveal?**

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

$$5 \quad RP = a + b(T) \text{ [6]}$$

6 Where:

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

9 a = intercept term

10 b = slope term

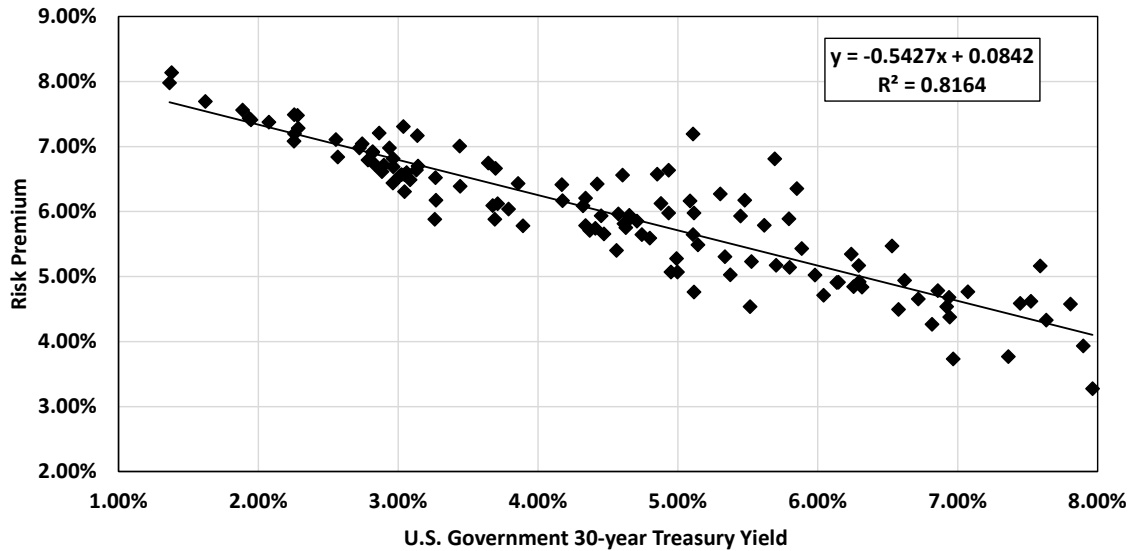
11 T = 30-year Treasury bond yield

12 Data regarding authorized ROEs were derived from all electric distribution rate cases
13 from 1992 through January 2023 as reported by Regulatory Research Associates
14 (“RRA”).⁴⁹ This equation’s coefficients were statistically significant at the 99.00 percent
15 level.

⁴⁹ This analysis began with over 1,400 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 700 cases.

1

Figure 10: Risk Premium Regression Analysis



2

3

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 6.41 percent, resulting in an

4

estimated cost of equity of 10.12 percent. Based on the consensus estimate of the near-

5

term (Q2/2023 – Q2/2024) projected 30-year Treasury bond yield (3.82 percent), the risk premium would be 6.35 percent, resulting in an estimated cost of equity of 10.17 percent.

6

7

Based on a consensus estimate of the longer-term (2024 – 2028) projection of the 30-year

8

Treasury bond yield (3.90 percent), the risk premium would be 6.31 percent, resulting in an estimated cost of equity of 10.21 percent.

9

10

Q. How did the results of the Bond Yield Plus Risk Premium analysis inform your recommended ROE for Liberty?

11

12

A. We have considered the results of the Bond Yield Risk Premium analysis in setting our

13

recommended ROE range for the Company. As noted, investors consider the authorized

14

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 from 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 for the appropriate estimate of the Company's
7 cost of equity. Several additional factors must be taken into consideration when
8 determining where the Company's cost of equity falls within the range of results. These
9 factors, which are discussed below, should be considered with respect to their overall
10 effect on 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 \$242
14 million, and the Company currently projects capital expenditures for 2023 through 2027
15 of approximately \$130 million.⁵⁰ Therefore, the Company's projected capital
16 expenditures represent approximately 53.5 percent of its net utility plant as of December
17 31, 2022.

⁵⁰ 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.⁵¹

⁵¹ S&P Global Ratings. “Assessing U.S. Investor-Owned Utility Regulatory Environments.” August 10, 2016, at 7.

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

6 **Q. How do Liberty's capital expenditure requirements compare to those of the proxy**
7 **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 and each of the companies in the proxy group
10 by dividing each company's projected capital expenditures for 2023-2027 by its total net
11 utility plant as of December 31, 2022. Liberty's ratio of capital expenditures as a
12 percentage of net utility plant is above the median.

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

15 A. No. However, the Company is proposing a three-year rate plan with Rate Year 1 ending
16 June 30, 2024, Rate Year 2 ending June 30, 2025, and Rate Year 3 ending June 30, 2026.
17 If approved the Company will be able to recover its projected capital expenditures plan
18 through the annual rate adjustments of the multi-year rate plan.

1 **Q. Are capital investment recovery mechanisms common among electric distribution**
2 **utilities?**

3 A. Yes. As shown in Attachment AEB/CMW-12, approximately 69 percent of the operating
4 utility companies of the proxy group recover costs through capital investment reconciling
5 mechanisms.

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

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

15 **B. Regulatory Risk**

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

17 A. The ratemaking process is premised on the principle that, for investors and companies to
18 commit the capital needed to provide safe and reliable utility service, the subject utility
19 must have the opportunity to recover the return of, and the market-required return on,
20 invested capital. Regulatory authorities recognize that because utility operations are
21 capital intensive, regulatory decisions should enable the utility to attract capital at

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

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

16 In addition, equity investors require that the authorized return be adequate to provide a
17 risk-comparable return on the equity portion of the utility's capital investments. Because
18 equity investors are the residual claimants on the utility's cash flows (which is to say that
19 the equity return is subordinate to interest payments), they are particularly concerned
20 with the strength of regulatory support and its effect on future cash flows.

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

3 A. Both Moody's and S&P consider the overall regulatory framework in establishing credit
4 ratings. Specifically, Moody's establishes credit ratings based on four key factors:
5 (1) regulatory framework; (2) the ability to recover costs and earn returns;
6 (3) diversification; and (4) financial strength, liquidity, and key financial metrics. Of
7 these criteria, regulatory framework and the ability to recover costs and earn returns are
8 each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory
9 risk a 50.00 percent weighting in the overall assessment of business and financial risk for
10 regulated utilities.⁵²

11 S&P also identifies the regulatory framework as an important factor in credit ratings for
12 regulated utilities, stating: "One significant aspect of regulatory risk that influences credit
13 quality is the regulatory environment in the jurisdictions in which a utility operates."⁵³

14 S&P identifies four specific factors that it uses to assess the credit implications of the
15 regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability;
16 (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory
17 independence and insulation.⁵⁴

⁵² Moody's Investors Service. Rating Methodology: Regulated Electric and Gas Utilities. June 23, 2017, at 4.

⁵³ 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.

⁵⁴ *Id.*, at 1.

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

3 A. The regulatory environment can significantly affect both access to, and cost of capital in
4 several ways. First, the proportion and cost of debt capital available to utility companies
5 are influenced by the rating agencies' assessment of the regulatory environment. As
6 noted by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly,
7 the regulatory environment and how the utility adapts to that environment are the most
8 important credit considerations."⁵⁵ Moody's has further highlighted the relevance of a
9 stable and predictable regulatory environment to a utility's credit quality, noting:
10 "[b]roadly speaking, the Regulatory Framework is the foundation for how all the
11 decisions that affect utilities are made (including the setting of rates), as well as the
12 predictability and consistency of decision-making provided by that foundation."⁵⁶

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

16 A. Yes. We have evaluated the regulatory framework in New Hampshire on three factors
17 that are important in terms of providing a regulated utility a reasonable opportunity to
18 earn its authorized ROE: (1) test year convention (*i.e.*, forecast vs. historical); (2) use of
19 revenue decoupling mechanisms or other clauses that provide revenue stabilization; and
20 (3) the prevalence of capital cost recovery between rate cases. The results of this

⁵⁵ Moody's Investors Service. Rating Methodology: Regulated Electric and Gas Utilities. June 23, 2017, at 6.

⁵⁶ *Id.*

1 regulatory risk assessment are shown in Attachment AEB/CMW-12 and are summarized
2 as follows:

3 Test Year Convention: Liberty is proposing a fully forecasted test year with Rate Year 1
4 being set for a 2023/2024 period. This is generally consistent with approximately 41
5 percent of the utility operating subsidiaries of the companies in the proxy group
6 companies which use forecasted or partially forecasted test years.

7 Volumetric Risk: Liberty does have partial protection against volumetric risk in New
8 Hampshire, through the Revenue per Customer (“RPC”) revenue decoupling mechanism
9 that was approved in the Company’s last rate case.⁵⁷ In this proceeding, the Company is
10 proposing a new electronic reconciliation adjustment mechanism (“ERAM”) that would
11 encompass the Company’s existing decoupling mechanism along with the Company’s
12 other existing transmission and distribution rate adjustment mechanisms. Similarly,
13 approximately 58 percent of the utility operating subsidiaries of the proxy group
14 companies have some form of protection against volumetric risk.

15 Capital Cost Recovery: As noted above, Liberty does not have a capital tracking
16 mechanism; however, the Company is proposing to recover a portion of its capital
17 expenditures plan through the annual rate adjustments of the Company’s proposed three-
18 year multi-year rate plan. Similarly, approximately 69 percent of the utility operating

⁵⁷ New Hampshire Public Utilities Commission, Order, Docket No. DE 19-064, May 26, 2020, at 11-14.

1 subsidiaries of the proxy group companies also have some form of capital cost recovery
2 mechanism in place.

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

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

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

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

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

18 A. Yes. In December 2022, RRA updated its evaluation of the regulatory environment in
19 New Hampshire to an Average/2 rating and noted the following:

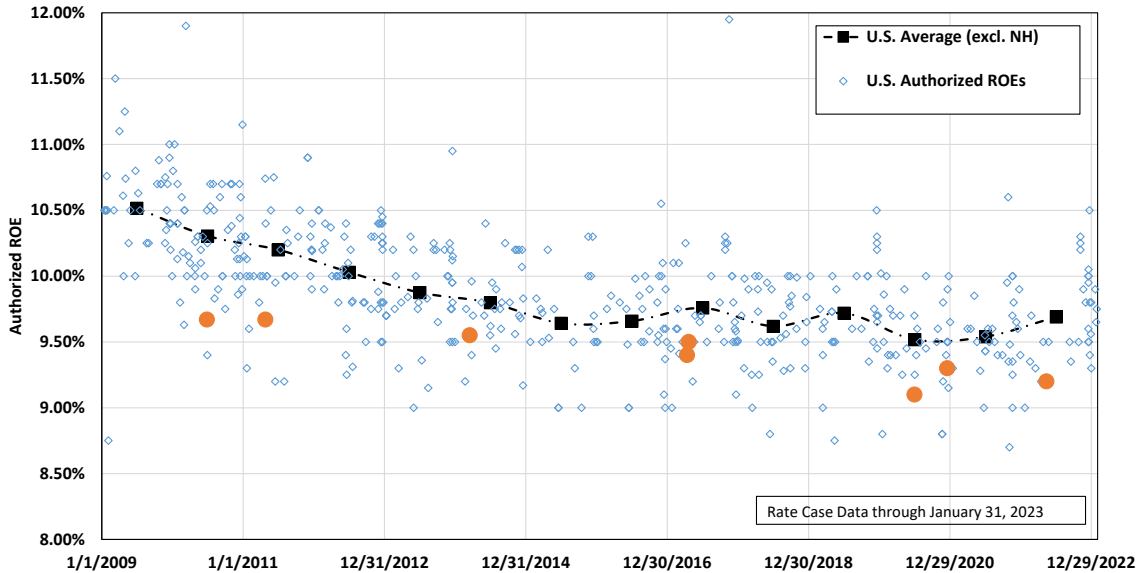
20 The New Hampshire Public Utilities Commission has opened several
21 investigations in recent months regarding utility rate adjustments, energy
22 procurement and net metering that warrant ongoing scrutiny. The PUC

1 commenced an investigation into the accounting and calculation
2 methodologies for step adjustments utilized by the state's electric and gas
3 utilities to reflect certain changes outside of a base rate case. The proceeding
4 could lead to substantial changes to the regulatory framework. In opening
5 the investigation, the PUC cited the volume of step adjustment petitions
6 submitted to the PUC and the varying methodologies used to calculate the
7 adjustments. The investigation will review: the necessity for ongoing step
8 adjustments for utilities; the ratemaking and calculation methodologies
9 used; the number of step adjustments, if any, between rate cases and the
10 resulting procedural schedules; and the processes the PUC, petitioners and
11 participating parties use for developing data and recommendations. In
12 response to rising energy costs for residential customers, regulators have
13 opened a proceeding to examine the state's renewable portfolio standard
14 and default service electric power procurement processes and
15 methodologies, and cost-of-gas procurements utilized by New Hampshire's
16 energy utilities. In addition, the PUC has opened an investigation into
17 changes to the current net metering tariff structure, including how customer-
18 generators are compensated.

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 approved rates of return are the result of settlement agreements
22 approved by the Commission, as shown in Figure 11, the authorized ROEs for electric
23 utilities in New Hampshire have been below the average authorized ROEs for electric
24 utilities across the United States. This can pose a problem because, as noted previously,
25 New Hampshire utility subsidiaries must compete for discretionary capital within their
26 own corporate structures, which must, in turn, compete for capital with other utilities and
27 businesses. Placing Liberty at the low end of authorized ROEs outside New Hampshire
28 over the longer term could negatively affect the Company's access to discretionary
29 capital.

1 *Figure 11: Comparison of New Hampshire and U.S. Authorized Returns for Electric*
2 *Utilities*⁵⁸



3
4 **Q. How are credit rating agencies currently viewing the utility sector?**

5 A. Credit rating agencies have indicated that the industry overall has increased risk, has
6 responded with close scrutiny of the financial coverage ratios of the sector, and has a
7 negative outlook on the industry overall for 2023. Therefore, it is critically important to
8 consider these factors and to recognize that the investor-required ROE would be higher
9 today than at the time of Commission decisions in the recent past. As discussed in more
10 detail in Section V, current market conditions demonstrate greater risk than at the time
11 the Commission authorized returns in the recent past.

⁵⁸ S&P Capital IQ Pro.

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

3 A. Yes. As discussed previously, the most recent example is the Arizona Corporation
4 Commission's adverse decision in APS's most recent rate proceeding that resulted in
5 negative effects, including negative ratings actions by credit ratings agencies, significant
6 reductions in projected EPS growth rates for APS, and a sharp decline in PNW's stock
7 price.

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

10 A. Both Moody's and S&P have identified the supportiveness of the regulatory environment
11 as an important consideration in developing their overall credit ratings for regulated
12 utilities. Many of the companies in the proxy group have timely cost recovery through
13 forecasted test years, capital cost recovery trackers, and non-volumetric rate
14 designs/revenue stabilization mechanisms. Liberty's proposal to use a forecasted test
15 year, and recover a portion of the Company's capital costs over the duration of the multi-
16 year rate plan as well as the utilization of revenue stabilization that provides for
17 protection against volumetric risk are consistent with the majority of the utility operating
18 subsidiaries of the proxy group indicates that the Company's regulatory risk is generally
19 consistent with the proxy group.

1 **C. Small Size Risk**

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

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

8 For small utilities, investors face additional obstacles, such as a smaller
9 customer base, limited financial resources, and a lack of diversification
10 across customers, energy sources, and geography. These obstacles imply a
11 higher investor return.⁵⁹

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

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

⁵⁹ Annin, Michael. “Equity and the Small-Stock Effect.” Public Utilities Fortnightly, October 15, 1995.

1 **Q. How do Liberty’s electric operations compare in size to the utility operating**
2 **subsidiaries of the proxy group companies?**

3 A. The Company’s electric distribution operations are substantially smaller than the median
4 for the proxy group companies in terms of market capitalization. While Liberty is not
5 publicly traded on a stand-alone basis, as shown in Attachment AEB/CMW-14, we have
6 estimated the implied market capitalization for the Company (*i.e.*, the market
7 capitalization if the Company were a stand-alone publicly-traded entity) relative to the
8 actual market capitalization for the proxy group companies.

9 Specifically, to estimate the size of the Company’s implied market capitalization relative
10 to the proxy group, we first calculated the implied equity balance of Liberty’s capital
11 structure by multiplying the Company’s rate base in Rate Year 1 (2023/2024) by the
12 Company’s proposed common equity ratio of 55.00 percent in Rate Year 1. We then
13 applied the median market-to-book ratio for the proxy group of 1.89 to the Company’s
14 implied common equity balance to estimate an implied market capitalization, which is
15 approximately \$203.54 million, or approximately 1.42 percent of the median market
16 capitalization for the proxy group.

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

18 A. Given this relative size information, it is possible to estimate the impact of size on the
19 cost of equity for the Company using *Kroll* Cost of Capital Navigator data that estimates
20 the stock risk premia based on the size of a company’s market capitalization.⁶⁰ As shown

⁶⁰ *Kroll* Cost of Capital Navigator – Size Premium; annual data as of December 31, 2022.

1 in Attachment AEB/CMW-14, the median market capitalization of the proxy group is
2 approximately \$14.35 billion, which corresponds to the second decile of *Kroll's* market
3 capitalization data.⁶¹ Based on *Kroll's* analysis, that decile corresponds to a size
4 premium of 0.45 percent (*i.e.*, 45 basis points). In comparison, Liberty's implied market
5 capitalization of approximately \$203.54 million falls within the tenth decile, which
6 corresponds to a size premium of 4.83 percent (*i.e.*, 483 basis points). The difference
7 between the size premium for the Company and the size premium for the proxy group is
8 438 basis points (*i.e.*, 4.83 percent minus 0.45 percent).

9 **Q. Were utility companies included in the small size risk premium study conducted by**
10 **Kroll?**

11 A. Yes. As shown in Exhibit 7.2 of the *Kroll* (formerly *Duff & Phelps*) 2019 Valuation
12 Handbook, OGE Energy Corp. had the largest market capitalization of the companies
13 contained in the fourth decile, which indicates that *Kroll* has included utility companies
14 in its size risk premium study.⁶²

15 **Q. Is the size premium applicable to companies in regulated industries such as electric**
16 **utilities?**

17 A. Yes. For example, Zepp (2003) provided the results of two studies that showed evidence
18 of the required risk premium for small water utilities. The first study, which was
19 conducted by the Staff of the California Public Utilities Commission, computed proxies

⁶¹ *Id.*

⁶² *Kroll*. Valuation Handbook: Guide to Cost of Capital. 2019, Exhibit 7.2.

1 for beta risk using accounting data from 1981 through 1991 for 58 water utilities and
2 concluded that smaller water utilities had greater risk and required higher returns on
3 equity than larger water utilities.⁶³ The second study examined the differences in
4 required returns over the period of 1987 through 1997 for two large and two small water
5 utilities in California. As Zepp (2003) showed, the required return for the two small
6 water utilities calculated using the DCF model was on average 99 basis points higher than
7 the two larger water utilities.⁶⁴

8 Additionally, Chrétien and Coggins (2011) studied the CAPM and its ability to estimate
9 the risk premium for the utility industry, and in particular subgroups of utilities.⁶⁵ The
10 article considered the CAPM, the Fama-French three-factor model, and a model similar
11 to the ECAPM, which as previously discussed, we have also considered in estimating the
12 cost of equity for the Company. In the study, the Fama-French three-factor model
13 explicitly included an adjustment to the CAPM for risk associated with size. As Chrétien
14 and Coggins (2011) show, the beta coefficient on the size variable for the U.S. utility
15 group was positive and statistically significant indicating that small size risk was relevant
16 for regulated utilities.⁶⁶

⁶³ 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.

⁶⁴ *Id.*

⁶⁵ Chrétien, Stéphane, and Frank Coggins. “Cost Of Equity For Energy Utilities: Beyond The CAPM.” *Energy Studies Review*, Vol. 18, No. 2, 2011.

⁶⁶ *Id.*

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

3 A. Yes. In Order No. 15, the Regulatory Commission of Alaska (“RCA”) concluded that
4 Alaska Electric Light and Power Company (“AEL&P”) was riskier than the proxy group
5 companies due to small size as well as other business risks. The RCA did “not believe
6 that adopting the upper end of the range of ROE analyses in this case, without an explicit
7 adjustment, would adequately compensate AEL&P for its greater risk.”⁶⁷ Thus, the
8 RCA awarded AEL&P an ROE of 12.875 percent, which was 108 basis points above the
9 highest cost of equity estimate from any model presented in the case.⁶⁸ Similarly, the
10 RCA has also noted that small size, as well as other business risks such as structural
11 regulatory lag, weather risk, alternative rate mechanisms, gas supply risk, geographic
12 isolation and economic conditions, increased the risk of ENSTAR Natural Gas
13 Company.⁶⁹ Ultimately, the RCA concluded that:

14 Although we agree that the risk factors identified by ENSTAR increase its
15 risk, we do not attempt to quantify the amount of that increase. Rather, we
16 take the factors into consideration when evaluating the remainder of the
17 record and the recommendations presented by the parties. After applying
18 our reasoned judgment to the record, we find that 11.875% represents a fair
19 ROE for ENSTAR.⁷⁰

⁶⁷ Regulatory Commission of Alaska, Docket No. U-10-29, Order No. 15, September 2, 2011, at 37.

⁶⁸ *Id.*, at 32 and 37.

⁶⁹ Regulatory Commission of Alaska, Docket No. U-16-066, Order No. 19, September 22, 2017, at 50-52.

⁷⁰ *Id.*

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

4 The record in this case establishes a compelling basis for selecting an ROE
5 above the mean average within the DCF range, given Otter Tail’s unique
6 characteristics and circumstances relative to other utilities in the proxy
7 group. These factors include the company’s relatively smaller size,
8 geographically diffuse customer base, and the scope of the Company’s
9 planned infrastructure investments.⁷¹

10 Finally, in Opinion Nos. 569 and 569-A, the Federal Energy Regulatory Commission
11 (“FERC”) adopted a size premium adjustment in its CAPM estimates for electric utilities.
12 In those decisions, the FERC noted that “the size adjustment was necessary to correct for
13 the CAPM’s inability to fully account for the impact of firm size when determining the
14 cost of equity.”⁷²

15 **Q. How have you considered the smaller size of Liberty in your recommendation of the**
16 **Company’s ROE in this proceeding?**

17 A. While we have estimated the effect of the Company’s small size on the cost of equity, we
18 are not proposing a specific adjustment for this risk factor. Rather, we believe it is
19 important to consider the small size of the Company’s electric distribution operations in
20 the determination of where, within the range of analytical results, the Company’s

⁷¹ Minnesota Public Utilities Commission, Docket No. E017/GR-15-1033, Order, August 16, 2016, at 55.

⁷² *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).

1 required cost of equity falls. All else equal, the additional risk associated with the
2 Company's small size supports an ROE toward the upper end of the range of results from
3 the cost of equity estimation models.

4 **D. Flotation Cost**

5 **Q. What are flotation costs?**

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

9 **Q. Why is it important to consider flotation costs in the allowed ROE?**

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

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

16 A. Flotation costs are part of the invested costs of the utility, which are properly reflected on
17 the balance sheet under "paid in capital." They are not current expenses, and, therefore,
18 are not reflected on the income statement. Rather, like investments in rate base or the
19 issuance costs of long-term debt, flotation costs are incurred over time. As a result, the
20 great majority of a utility's flotation costs are incurred prior to the test year but remain
21 part of the cost structure that exists during the test year and beyond, and as such, should

1 be recognized for ratemaking purposes. Therefore, it is irrelevant whether an issuance
2 occurs during the test year or is planned for the test year because failure to allow recovery
3 of past flotation costs may deny the Company the opportunity to earn its required rate of
4 return in the future.

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

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

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

20 A. No, the vintage of the issuance is not particularly important because an investor should
21 have a reasonable opportunity to earn a return on the full amount of capital that she has

1 contributed, but without the recognition of flotation costs, the investor suffers a shortfall
2 in every year after which the capital has been invested. For example, the last two equity
3 issuances for APUC are shown in Attachment AEB/CMW-15. APUC closed equity
4 issuances of approximately \$800 million and \$310.5 million (for a total of 67 million
5 shares of common stock) in June 2021 and October 2019, respectively. Returning to our
6 earlier example, the investor who contributed \$100 is entitled to a reasonable opportunity
7 to earn a return on \$100 not only in the first year after the investment but in every
8 subsequent year in which she has the \$100 invested. Leaving aside depreciation, which is
9 dealt with separately, there is no basis to conclude that the investor is entitled to earn a
10 return on \$100 in the first year after issuance, but thereafter is only entitled to earn a
11 return on only \$97. For as long as the \$100 is invested, the investor should have a
12 reasonable opportunity to earn a return on the entire amount.

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

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

1 because, as we discussed previously, it is planning significant capital expenditures over
2 the next five years.

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

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

9 Flotation costs occur when new issues of stock or debt are sold to the public.
10 The firm usually incurs several kinds of flotation or transaction costs, which
11 reduce the actual proceeds received by the firm. Some of these are direct
12 out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and
13 prospectus preparation costs. Because of this reduction in proceeds, the
14 firm's required returns on these proceeds equate to a higher return to
15 compensate for the additional costs. Flotation costs can be accounted for
16 either by amortizing the cost, thus reducing the cash flow to discount, or by
17 incorporating the cost into the cost of capital. Because flotation costs are
18 not typically applied to operating cash flow, one must incorporate them into
19 the cost of capital.⁷³

20 **Q. What is the effect of flotation costs on Liberty's cost of equity?**

21 A. Our flotation cost is estimated on the costs of issuing equity that were incurred by APUC
22 in its two most recent common equity issuances. As shown in Attachment AEB/CMW-
23 15, based on the flotation costs of those two issuances, the impact on the proxy group's
24 cost of equity amounts to 12 basis points (or 0.12 percent) based on the median and 16
25 basis points (or 0.16 percent) based on the mean.

⁷³ Pratt, Shannon P. Cost of Capital Estimation and Applications. Second Edition, at 220-21.

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

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

2 A. The Company is proposing a rate-making 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 **Q. Please discuss your analysis of the capital structures of the proxy group companies.**

12 A. We calculated the average proportion of common equity, long-term debt, short-term debt,
13 and preferred equity for the most recent two years for each of the companies in the proxy
14 group at the operating subsidiary level.⁷⁴ As shown in Attachment AEB/CMW-16, the
15 average common equity ratio for the operating subsidiaries of the proxy group companies
16 was 51.43 percent (representing a range from 41.38 percent to 60.17 percent). Given that
17 Liberty's proposed equity ratio of 55.00 percent is within the range of equity ratios for
18 the utility operating subsidiaries of the proxy group companies, we consider it to be
19 reasonable.

⁷⁴ 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 to be considered in setting the Company’s capital structure?**

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

5 For example, Moody’s recently revised its 2023 outlook for the regulated gas and electric
6 utilities sector to “negative” based on ongoing challenges of inflation, increasing interest
7 rates, and higher natural gas prices. Moody’s noted that these challenges increase the
8 pressure on customer affordability, and thus face heightened public scrutiny and the
9 ability of utilities to promptly recover their costs. Moody’s concluded that regulated
10 utilities’ financial metrics are already under pressure with little cushion, and that
11 sustained capital spending is likely as utilities continue to progress towards emissions
12 reductions and net-zero goals. Moody’s noted that the outlook could return to stable if
13 regulatory support remains intact, natural gas prices are at a level where utilities can
14 recover their fuel and purchased power costs without delay beyond 12 months, overall
15 inflation moderates, interest rates stabilize, and/or utilities’ aggregate funds from
16 operations-to-debt ratio remains between 14% and 15%.⁷⁵

17 Fitch Ratings (“Fitch”) also highlights similar factors identified by Moody’s as
18 challenging utilities’ outlook for 2023, stating that the sector faces mounting cost
19 pressures due to “elevated commodity prices, inflationary headwinds and rising interest

⁷⁵ 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 costs,” and that some offset in managing these headwinds include “higher authorized
2 ROEs and the use of tools such as securitization of under-recovered fuel balances.”⁷⁶

3 Likewise, S&P also continues to maintain a negative outlook for the utility industry,
4 noting that downgrades have outpaced upgrades for the third consecutive year in 2022
5 with a median investor-owned utility credit rating of “BBB+”.⁷⁷ Further, S&P expects
6 the industry to have negative discretionary cash flow as a result of significant capital
7 spending and consistent dividends.⁷⁸ Therefore, the utility industry will need ongoing
8 access to capital markets to fund capital expenditures. However, S&P notes that inflation,
9 rising interest rates and decreasing equity prices may “hamper” consistent access to
10 capital markets and result in additional pressure on cash flows.⁷⁹ Moreover, S&P
11 indicates that if inflation risks persist over the near-term and customer bills increase,
12 regulatory credit support could decrease resulting in weaker financial metrics for the
13 industry:

14 Over the past decade the industry’s financial measures have weakened from
15 a combination of rising capital spending, regulatory lag, and lower
16 authorized return on equity (ROE). The industry’s return on capital was
17 about 6% a decade ago and today is closer to 4%. More recently, we have
18 seen instances where not only is the authorized ROE lowered but also the
19 equity ratio is lowered. These results have weakened the industry’s financial
20 measures, pressuring credit quality. Under our base case of moderating
21 inflationary risks during 2023, we expect the industry's credit measures to
22 generally remain flat. However, if inflationary risks persist, it may further

⁷⁶ Fitch Ratings. “North American Utilities, Power & Gas Outlook 2023.” December 7, 2022, at 1-2.

⁷⁷ S&P Global Ratings. Industry Top Trends, “North American Regulated Utilities: The industries outlook remains negative.” January 23, 2023.

⁷⁸ *Id.*

⁷⁹ *Id.*

1 pressure the customer bill, potentially decreasing the level of regulatory
2 credit support, weakening the industry's financial performance.⁸⁰

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

7 **X. CONCLUSIONS AND RECOMMENDATIONS**

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

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

⁸⁰ *Id.*

1

Figure 12: Summary of Analytical Results

<i>Constant Growth DCF - Earnings Growth</i>			
	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
30-Day Avg. Stock Price	8.09%	9.32%	10.33%
90-Day Avg. Stock Price	8.23%	9.46%	10.48%
180-Day Avg. Stock Price	8.14%	9.37%	10.38%
Average	8.15%	9.38%	10.40%
<i>Constant Growth DCF - Earnings & Retention Growth</i>			
30-Day Avg. Stock Price	7.39%	9.09%	10.33%
90-Day Avg. Stock Price	7.53%	9.23%	10.48%
180-Day Avg. Stock Price	7.44%	9.13%	10.38%
Average	7.45%	9.15%	10.40%
<i>CAPM, ECAPM, and Bond Yield Risk Premium</i>			
	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	11.41%	11.42%	11.43%
Current Bloomberg Beta	10.83%	10.85%	10.87%
Long-term Avg. <i>Value Line</i> Beta	10.41%	10.44%	10.46%
ECAPM:			
Current <i>Value Line</i> Beta	11.68%	11.69%	11.70%
Current Bloomberg Beta	11.25%	11.26%	11.28%
Long-term Avg. <i>Value Line</i> Beta	10.93%	10.95%	10.97%
Bond Yield Risk Premium:	10.12%	10.17%	10.21%

2

1 **Q. What is your conclusion with respect to the Company's proposed capital structure?**

2 A. Liberty's proposal to establish a capital structure consisting of 55.00 percent common
3 equity and 45.00 percent long-term debt is within the range of actual capital structures of
4 the proxy group companies. Taking into consideration the impact of current and
5 projected market conditions on the cash flows of utilities as raised by the credit rating
6 agencies, we conclude that the Company's proposal is reasonable and should be adopted
7 for ratemaking purposes.

8 **Q. Does this conclude your direct testimony?**

9 A. Yes, it does.