

STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 17-3112-INV

Investigation into the petition of Green Mountain Power Corporation's tariff filing requesting an overall rate increase in the amount of 4.98%, to take effect January 1, 2018.

PREFILED DIRECT TESTIMONY OF
RICHARD A. BAUDINO

ON BEHALF OF THE
VERMONT DEPARTMENT OF PUBLIC SERVICE

AUGUST 14, 2017

Summary: Mr. Baudino's testimony addresses the allow return of equity of Green Mountain Power ("GMP"). Mr. Baudino also addresses GMP's requested capital structure and the cost of long-term and short-term debt. Mr. Baudino recommends that the Commission: (1) adopt an 8.75% return on equity, (2) accept GMP's requested cost of short-term debt, (3) set GMP's cost of new debt at 4.20%, (4) adopt GMP's requested capital structure, and (5) approve a recommended 6.70% adjusted weighted cost of capital for GMP.

Mr. Baudino Sponsors the Following Exhibits:

Exhibit PSD-RAB-1: Resume/CV

Exhibit PSD-RAB-2: Depiction of Interest Rate Trends

Exhibit PSD-RAB-3: Calculation of Average Dividend Yield

Exhibit PSD-RAB-4: Proxy Group – Growth Rate & DCF Return on Equity

Exhibit PSD-RAB-5: Proxy Group – Capital Asset Pricing Model Analysis

Exhibit PSD-RAB-6: Proxy Group – Calculation of Market Returns

TABLE OF CONTENTS OF MR. BAUDINO'S TESTIMONY

I. QUALIFICATIONS AND SUMMARY Error! Bookmark not defined.2

II. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS.....5

III. DETERMINATION OF FAIR RATE OF RETURN14

Discounted Cash Flow ("DCF") Method17

Capital Asset Pricing Model24

Conclusions and Recommendations.....30

IV. RESPONSE TO GREEN MOUNTAIN POWER ROE TESTIMONY34

1 **I. QUALIFICATIONS AND SUMMARY**

2 **Q1. Please state your name and business address.**

3 A1. My name is Richard A. Baudino. My business address is J. Kennedy and Associates,
4 Inc. (“Kennedy and Associates”), 570 Colonial Park Drive, Suite 305, Roswell,
5 Georgia 30075.

6
7 **Q2. What is your occupation and by whom are you employed?**

8 A2. I am a consultant with Kennedy and Associates.

9
10 **Q3. Please describe your education and professional experience.**

11 A3. I received my Master of Arts degree with a major in Economics and a minor in
12 Statistics from New Mexico State University in 1982. I also received my Bachelor of
13 Arts Degree with majors in Economics and English from New Mexico State in 1979.

14
15 I began my professional career with the New Mexico Public Service Commission Staff
16 in October 1982 and was employed there as a Utility Economist. During my
17 employment with the Staff, my responsibilities included the analysis of a broad range
18 of issues in the ratemaking field. Areas in which I testified included cost of service,
19 rate of return, rate design, revenue requirements, analysis of sale/leasebacks of
20 generating plants, utility finance issues, and generating plant phase-ins.

21
22 In October 1989, I joined the utility consulting firm of Kennedy and Associates as a
23 Senior Consultant where my duties and responsibilities covered substantially the same
24 areas as those during my tenure with the New Mexico Public Service Commission

1 Staff. I became Manager in July 1992 and was named Director of Consulting in
2 January 1995. Currently, I am a consultant with Kennedy and Associates.

3

4 Exhibit PSD-RAB-1 summarizes my expert testimony experience.

5

6 **Q4. On whose behalf are you testifying?**

7 A4. I am testifying on behalf of the Vermont Department of Public Service (“PSD” of the
8 “Department”).

9

10 **Q5. What is the purpose of your Direct Testimony?**

11 A5. The purpose of my Direct Testimony is to address the allowed return on equity for
12 Green Mountain Power Corporation ("GMP" or "Company"). I will also address the
13 Company's requested capital structure and the cost of short-term and long-term debt.
14 Finally, I will respond to the Direct Testimony of Mr. James Coyne, witness for the
15 Company.

16

17 **Q6. Please summarize your conclusions and recommendations.**

18 A6. First, based on current financial market conditions, I recommend that the Vermont
19 Public Utility Commission (“Commission”) adopt a 8.75% return on equity for GMP in
20 this proceeding. My recommendation is based on the results of a Discounted Cash
21 Flow ("DCF") model analysis. My DCF analysis incorporates my standard approach to
22 estimating the investor required return on equity and employs a group of 12 proxy

1 companies and dividend and earnings growth forecasts from the Value Line Investment
2 Survey, First Call/IBES, and Zacks.

3
4 I also included two Capital Asset Pricing Model ("CAPM") analyses for additional
5 information. I did not incorporate the results of the CAPM in my recommendation,
6 however the results from the CAPM support my 8.75% ROE recommendation for
7 GMP. In fact, my CAPM results are lower than my DCF results.

8
9 Second, I recommend that GMP's requested cost of short-term debt be accepted by the
10 Commission.

11
12 Third, I recommend that GMP's requested cost of new debt be set at 4.20% for
13 purposes of this case.

14
15 Fourth, I recommend that the Commission adopt GMP's requested capital structure.

16
17 Fifth, my recommended adjusted weighted cost of capital for GMP is 6.70%.

18
19 Sixth, I recommend that the Commission reject Mr. Coyne's recommended 9.50% cost
20 of equity. For reasons that I shall explain in Section IV of my testimony, a cost of
21 equity of 9.50% is overstated, inconsistent with current market required returns, and
22 would result in an excessive revenue requirement for GMP.

23

1 **II. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS**

2 **Q7. Mr. Baudino, what has the trend been in long-term capital costs over the last few**
3 **years?**

4 A7. Long-term capital costs as measured by the general level of interest rates in the
5 economy have declined over the last few years, though they have increased since the
6 November 2016 election. Exhibit PSD-RAB-2 presents a graphic depiction of the trend
7 in interest rates from January 2008 through June 2017. The interest rates shown in this
8 exhibit are for the 20-year U.S. Treasury Bond and the average public utility bond from
9 the Mergent Bond Record. In January 2008, the average public utility bond yield was
10 6.08% and the 20-year Treasury Bond yield was 4.35%. As of June 2017, the average
11 public utility bond yield was 4.01%, representing a decline of 207 basis points, or
12 2.07%, from January 2008. Likewise, the 20-year Treasury bond stood at 2.54% in
13 June 2017, a decline of 1.81 percentage points (181 basis points) from January 2008.

14
15 **Q8. Was there a significant change in Federal Reserve policy during the historical**
16 **period shown in Exhibit PSD-RAB-2 that affected the general level of interest**
17 **rates?**

18 A8. Yes. In response to the 2007 financial crisis and severe recession that followed in
19 December 2007, the Federal Reserve (“Fed”) undertook a series of steps to stabilize the
20 economy, ease credit conditions, and lower unemployment and interest rates. These
21 steps are commonly known as Quantitative Easing (“QE”) and were implemented in
22 three distinct stages: QE1, QE2, and QE3. The Fed's stated purpose of QE was "to

1 support the liquidity of financial institutions and foster improved conditions in financial
2 markets."¹

3
4 QE1 was implemented from November 2008 through approximately March 2010.
5 During this time, the Fed cut its key Federal Funds Rate to nearly 0% and purchased
6 \$1.25 trillion of mortgage-backed securities and \$175 billion of agency debt purchases.

7
8 QE2 was implemented in November 2010 with the Fed announcing that it would
9 purchase an additional \$600 billion of Treasury securities by the second quarter of
10 2011.²

11
12 Beginning in September 2011, the Fed initiated a "maturity extension program" in
13 which it sold or redeemed \$667 billion of shorter-term Treasury securities and used the
14 proceeds to buy longer-term Treasury securities. This program, also known as
15 "Operation Twist," was designed by the Fed to lower long-term interest rates and
16 support the economic recovery.

17
18 QE3 began in September 2012 with the Fed announcing an additional bond purchasing
19 program of \$40 billion per month of agency mortgage backed securities. The Fed

¹ Federal Reserve, *The Federal Reserve's response to the financial crisis and actions to foster maximum employment and price stability*, viewed at http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm.

² Federal Reserve, November 2, 2010 FOMC Statement (press release), viewed at <http://www.federalreserve.gov/newsevents/press/monetary/20101103a.htm>.

1 began to pare back its purchases of securities in the last few years. On January 29,
2 2014, the Fed stated that beginning in February 2014, it would reduce its purchases of
3 long-term Treasury securities to \$35 billion per month. The Fed continued to reduce
4 these purchases throughout the year and in a press release issued October 29, 2014
5 announced that it decided to close this asset purchase program in October.³
6

7 **Q9. Has the Fed recently indicated any important changes to its monetary policy?**

8 A9. Yes. In March 2016, the Fed began to raise its target range for the federal funds rate,
9 increasing it to 1/4% to 1/2% from 0% to 1/4%. The Fed further increased the target
10 range to 1/2% to 3/4% in a press release dated December 14, 2016. On June 14, 2017,
11 the Fed announced a further increase to 1% - 1 1/4%. In its press release on that date,
12 the Fed noted the following:

13 “Information received since the Federal Open Market Committee
14 met in May indicates that the labor market has continued to
15 strengthen and that economic activity has been rising moderately so
16 far this year. Job gains have moderated but have been solid, on
17 average, since the beginning of the year, and the unemployment rate
18 has declined. Household spending has picked up in recent months,
19 and business fixed investment has continued to expand. On a 12-
20 month basis, inflation has declined recently and, like the measure
21 excluding food and energy prices, is running somewhat below 2
22 percent. Market-based measures of inflation compensation remain
23 low; survey-based measures of longer-term inflation expectations
24 are little changed, on balance.
25

26 Consistent with its statutory mandate, the Committee seeks to foster
27 maximum employment and price stability. The Committee continues
28 to expect that, with gradual adjustments in the stance of monetary
29 policy, economic activity will expand at a moderate pace, and labor
30 market conditions will strengthen somewhat further. Inflation on a

³ Federal Reserve, October 29, 2014 FOMC Statement (presse release), viewed at <http://www.federalreserve.gov/newsevents/press/monetary/20141029a.htm>.

1 12-month basis is expected to remain somewhat below 2 percent in
2 the near term but to stabilize around the Committee's 2 percent
3 objective over the medium term. Near-term risks to the economic
4 outlook appear roughly balanced, but the Committee is monitoring
5 inflation developments closely.
6

7 In view of realized and expected labor market conditions and
8 inflation, the Committee decided to raise the target range for the
9 federal funds rate to 1 to 1-1/4 percent. The stance of monetary
10 policy remains accommodative, thereby supporting some further
11 strengthening in labor market conditions and a sustained return to 2
12 percent inflation.
13

14 In determining the timing and size of future adjustments to the target
15 range for the federal funds rate, the Committee will assess realized
16 and expected economic conditions relative to its objectives of
17 maximum employment and 2 percent inflation. This assessment will
18 take into account a wide range of information, including measures
19 of labor market conditions, indicators of inflation pressures and
20 inflation expectations, and readings on financial and international
21 developments. The Committee will carefully monitor actual and
22 expected inflation developments relative to its symmetric inflation
23 goal. The Committee expects that economic conditions will evolve
24 in a manner that will warrant gradual increases in the federal funds
25 rate; the federal funds rate is likely to remain, for some time, below
26 levels that are expected to prevail in the longer run. However, the
27 actual path of the federal funds rate will depend on the economic
28 outlook as informed by incoming data."⁴

29
30 **Q10. Mr. Baudino, why is it important to understand the Fed's actions since 2008?**

31 A10. The Fed's monetary policy actions since 2008 were deliberately undertaken to lower
32 interest rates and support economic recovery. The Fed's actions have been quite
33 successful in lowering interest rates given that the 20-year Treasury Bond yield in June
34 2007 was 5.29% and the public utility bond yield was 6.34%. The U.S. economy is

⁴ <https://www.federalreserve.gov/monetarypolicy/files/monetary20170614a1.pdf>

1 currently in a low interest rate environment. As I will demonstrate later in my
2 testimony, low interest rates have also significantly lowered investors' required return
3 on equity for the stocks of regulated utilities.

4
5 **Q11. Are current interest rates indicative of investor expectations regarding the future**
6 **direction of interest rates?**

7 A11. Yes. Securities markets are efficient and most likely reflect investors' expectations about
8 future interest rates. As Dr. Roger Morin pointed out in *New Regulatory Finance*:

9 "A considerable body of empirical evidence indicates that U.S.
10 capital markets are efficient with respect to a broad set of
11 information, including historical and publicly available
12 information."⁵

13 Despite recent increases in the general level of interest rates since the second half of
14 2016, the U.S. economy continues to operate in a low interest rate environment. It is
15 important to realize that investor expectations of higher future interest rates, if any, are
16 already embodied in current securities prices, which include debt securities and stock
17 prices.

18
19 Moreover, the current low interest rate environment favors lower risk regulated utilities.
20 It would not be advisable for utility regulators to raise ROEs in anticipation of higher
21 interest rates that may or may not occur.

22

⁵ Morin, Roger A., *New Regulatory Finance*, Public Utilities Reports, Inc. (2006) at 279.

1 **Q12. How has the increase in interest rates last year affected utility stocks in terms of**
 2 **bond yields and stock prices?**

3 A12. Table 1 below tracks movements in the 20-year Treasury bond yield, the Mergent
 4 average utility bond yield, and the Dow Jones Utilities Average (“DJUA”) from
 5 January 2016 through June 2017.

TABLE 1			
Bond Yields and DJUA			
	<u>20-Year Treasury %</u>	<u>Avg. Utility Bond %</u>	<u>DJUA</u>
<u>2016</u>			
January	2.49	4.62	611.35
February	2.20	4.44	620.70
March	2.28	4.40	668.57
April	2.21	4.16	654.44
May	2.22	4.06	659.44
June	2.02	3.93	716.52
July	1.82	3.70	711.42
August	1.89	3.73	666.87
September	2.02	3.80	668.13
October	2.17	3.90	675.23
November	2.54	4.21	632.67
December	2.84	4.39	645.86
<u>2017</u>			
January	2.75	4.24	668.87
February	2.76	4.25	703.16
March	2.83	4.30	697.28
April	2.67	4.19	704.35
May	2.70	4.19	726.62
June	2.54	4.01	706.91

6

7 Table 1 shows that the 20-year Treasury bond yield was slightly higher in June 2017
 8 than it was in January 2016 before the Fed began raising short-term interest rates.

9 However, the yield on the Mergent average public utility bond was substantially lower

1 in June 2017 than in January 2016. Similarly, the DJUA was substantially higher in
2 June 2017 than it was in January 2016.

3
4 My conclusion from this data is that even though the Federal Reserve raised short-term
5 interest rates since March 2016, utility bond yields are still lower and the DJUA is
6 higher than they were at the beginning of 2016.

7 **Q13. How does the investment community regard the electric utility industry currently?**

8 A13. The Value Line Investment Survey noted the following in its June 16, 2017 report on
9 the Electric Utility (Central) Industry:

10 “Most electric utility stocks have fared well in the first half of 2017.
11 The prices of most issues have risen at a high single-digit or low
12 double-digit percentage. (The exceptions can be attributed to
13 company-specific reasons.)

14
15 Investors are still reaching for yield, and are not fearful of the
16 expectation that the Federal Reserve will raise interest rates. The
17 high valuation of stocks in the Electric Utility Industry is evident by
18 a few ways of measuring this. The group’s average dividend yield,
19 at 3.3%, is comfortably above the median of all stocks under our
20 coverage. However, this yield is low, by historical standards. In
21 addition, for many years electric utility equities had a price-earnings
22 ratio well below that of the market. Thus, the relative price-earnings
23 ratio shown on our pages was below 1.00. Last year, this figure was
24 right around 1.00 for many electric utility stocks. Today, many
25 issues have a price-earnings ratio above 20. We also note that the
26 majority of electric utility equities are trading within their 3- to 5-
27 year Target Price Range.”

28
29 Value Line’s remarks with respect to the electric utility industry indicate that despite
30 the recent increase in interest rates, utility stocks continue to be highly valued
31 investments in today’s marketplace. The safety and relatively high dividend yields for
32 regulated utilities are attractive to investors.

1

2 **Q14. In 2017, the Edison Electric Institute (“EEI”) published its *2016 Financial Review***
3 **of the investor-owned electric utility industry. Please summarize EEI’s**
4 **conclusions with respect to credit ratings for the electric utility industry.**

5 A14. EEI’s report noted the following with respect to the industry’s credit ratings:

6 “The industry’s average credit rating was BBB+ in 2016, remaining for a
7 third straight year above the BBB average that has held since 2004.
8 Ratings activity, at 67 changes, was in line with the industry’s annual
9 average of 70 changes per year since 2008. Upgrades were 73.1% of total
10 actions, the third-highest annual figure for upgrades in our dataset. In fact,
11 the last four years have produced the four highest annual upgrade
12 percentages in our historical data. EEI captures upgrades and downgrades
13 at the subsidiary level; multiple actions within a parent holding company
14 are included in the upgrade/downgrade totals. The industry’s average
15 credit rating and outlook are based on the unweighted averages of all
16 Standard & Poor’s (S&P) parent company ratings and outlooks.

17

18 While the industry’s average rating was unchanged at BBB+, the
19 underlying data show a modest strengthening. Six companies received
20 upgrades at the parent level while only two were downgraded. Our
21 universe of U.S. “parent” company electric utilities includes a few that
22 are either a subsidiary of an independent power producer, a subsidiary of
23 a foreign-owned company, or that have been acquired by an investment
24 firm; three of the year’s upgrades focused on a relationship with that
25 ultimate parent company. Two other upgrades cited a reduced focus on
26 merchant generation and an improved business risk profile. At January 1,
27 2017, 74.0% of ratings outlooks were “stable”, 18.0% were “negative” or
28 “watch-negative”, 6.0% were “positive” or “watch-positive”, and 2.0%
29 were “developing”.

30

31 EEI’s analysis shows that the investor-owned electric utility industry had strong, stable,
32 and slightly improving credit metrics in 2016.

33

34

35

1 **Q15. What are the current credit ratings and bond ratings for GMP?**

2 A15. GMP currently carries a strong, investment grade A- issuer credit rating and an A
3 senior secured debt rating from Standard and Poor's ("S&P"). S&P reaffirmed these
4 ratings in an action issued on December 14, 2016. S&P noted the following in its
5 report:⁶

- 6 • "We have revised our designation of the relationship between U.S.
7 regulated utility Green Mountain Power Corp. (GMP) and its parent,
8 Gaz Metro Inc. (GMI), to reflect our view of a higher level of
9 commitment from the parent.
- 10 • We are affirming our 'A-' issuer credit rating on GMP which is based on
11 the company's low-risk regulated utility strategy, constructive
12 regulation in Vermont, small scale and limited diversity, and FFO/debt
13 in the 16-18% range. The outlook is stable.
- 14 • The stable outlook reflects our expectation that the company will
15 continue to limit its business risk by focusing on low-risk utility
16 operations while maintaining credit protection metrics that are
17 commensurate with its current ratings."

18

⁶ The S&P report was provided by GMP in response to PSD1.Q2.

1 **III. DETERMINATION OF FAIR RATE OF RETURN**

2 **Q16. Please describe the methods you employed in estimating a fair rate of return for**
3 **GMP.**

4 A16. I employed a Discounted Cash Flow (“DCF”) analysis using the group of 12 regulated
5 electric utilities used by Mr. Coyne in the ROE analysis he submitted on behalf of the
6 Company. My DCF analysis is the standard constant growth form of the model that
7 employs four different growth rate forecasts from the Value Line Investment Survey,
8 First Call/IBES, and Zacks. I also employed Capital Asset Pricing Model (“CAPM”)
9 analyses using both historical and forward-looking data. Although I did not rely on the
10 CAPM for my recommended ROE for GMP, the results from the CAPM tend to
11 support the reasonableness of my recommendation.

12
13 **Q17. What are the main guidelines to which you adhere in estimating the cost of equity**
14 **for a firm?**

15 A17. The estimated cost of equity should be comparable to the returns of other firms with
16 similar risk structures and should be sufficient for the firm to attract capital. These are
17 the basic standards set out by the United States Supreme Court in *Federal Power*
18 *Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) and *Bluefield W.W. & Improv.*
19 *Co. v. Public Service Comm'n*, 262 U.S. 679 (1922).

20
21 From an economist’s perspective, the notion of “opportunity cost” plays a vital role in
22 estimating the return on equity. One measures the opportunity cost of an investment
23 equal to what one would have obtained in the next best alternative. For example, let us

1 suppose that an investor decides to purchase the stock of a publicly traded electric
2 utility. That investor made the decision based on the expectation of dividend payments
3 and perhaps some appreciation in the stock's value over time; however, that investor's
4 opportunity cost is measured by what she or he could have invested in as the next best
5 alternative. That alternative could have been another utility stock, a utility bond, a
6 mutual fund, a money market fund, or any other number of investment vehicles.

7
8 The key determinant in deciding whether to invest, however, is based on comparative
9 levels of risk. Our hypothetical investor would not invest in a particular electric
10 company stock if it offered a return lower than other investments of similar risk. The
11 opportunity cost simply would not justify such an investment. Thus, the task for the
12 rate of return analyst is to estimate a return that is equal to the return being offered by
13 other risk-comparable firms.

14
15 **Q18. What are the major types of risk faced by utility companies?**

16 A18. In general, risk associated with the holding of common stock can be separated into
17 three major categories: business risk, financial risk, and liquidity risk. Business risk
18 refers to risks inherent in the operation of the business. Volatility of the firm's sales,
19 long-term demand for its product(s), the amount of operating leverage, and quality of
20 management are all factors that affect business risk. The quality of regulation at the
21 state and federal levels also plays an important role in business risk for regulated utility
22 companies.

23

1 Financial risk refers to the impact on a firm's future cash flows from the use of debt in
2 the capital structure. Interest payments to bondholders represent a prior call on the
3 firm's cash flows and must be met before income is available to the common
4 shareholders. Additional debt means additional variability in the firm's earnings,
5 leading to additional risk.

6
7 Liquidity risk refers to the ability of an investor to quickly sell an investment without a
8 substantial price concession. The easier it is for an investor to sell an investment for
9 cash, the lower the liquidity risk will be. Stock markets, such as the New York and
10 American Stock Exchanges, help ease liquidity risk substantially. Investors who own
11 stocks that are traded in these markets know on a daily basis what the market prices of
12 their investments are and that they can sell these investments fairly quickly. Many
13 electric utility stocks are traded on the New York Stock Exchange and are considered
14 liquid investments.

15
16 **Q19. Are there any sources available to investors that quantify the total risk of a**
17 **company?**

18 A19. Bond and credit ratings are tools that investors use to assess the risk comparability of
19 firms. Bond rating agencies such as Moody's and Standard and Poor's perform detailed
20 analyses of factors that contribute to the risk of an investment. The result of their
21 analyses is a bond and/or credit rating that reflect these risks.

22

1 **Discounted Cash Flow (“DCF”) Model**

2 **Q20. Please describe the basic DCF approach.**

3 A20. The basic DCF approach is rooted in valuation theory. It is based on the premise that
4 the value of a financial asset is determined by its ability to generate future net cash
5 flows. In the case of a common stock, those future cash flows generally take the form
6 of dividends and appreciation in stock price. The value of the stock to investors is the
7 discounted present value of future cash flows. The general equation then is:

8
$$V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \dots + \frac{R}{(1+r)^n}$$

9 *Where:* $V =$ asset value
10 $R =$ yearly cash flows
11 $r =$ discount rate

12 This is no different from determining the value of any asset from an economic point of
13 view; however, the commonly employed DCF model makes certain simplifying
14 assumptions. One is that the stream of income from the equity share is assumed to be
15 perpetual; that is, there is no salvage or residual value at the end of some maturity date
16 (as is the case with a bond). Another important assumption is that financial markets are
17 reasonably efficient; that is, they correctly evaluate the cash flows relative to the
18 appropriate discount rate, thus rendering the stock price efficient relative to other
19 alternatives. Finally, the model I typically employ also assumes a constant growth rate
20 in dividends. The fundamental relationship employed in the DCF method is described
21 by the formula:

22
$$k = D_1/P_0 + g$$

23 *Where:* $D_1 =$ the next period dividend
24 $P_0 =$ current stock price

1 g = *expected growth rate*
2 k = *investor-required return*

3 Under the formula, it is apparent that “k” must reflect the investors’ expected return.
4 Use of the DCF method to determine an investor-required return is complicated by the
5 need to express investors’ expectations relative to dividends, earnings, and book value
6 over an infinite time horizon. Financial theory suggests that stockholders purchase
7 common stock on the assumption that there will be some change in the rate of dividend
8 payments over time. We assume that the rate of growth in dividends is constant over
9 the assumed time horizon, but the model could easily handle varying growth rates if we
10 knew what they were. Finally, the relevant time frame is prospective rather than
11 retrospective.

12
13 **Q21. What was your first step in conducting your DCF analysis for GMP?**

14 A21. My first step was to choose a proxy group of companies with a risk profile that is
15 reasonably similar to GMP. In this case, I chose to use the same group of companies
16 used by Company witness Coyne. Mr. Coyne described his selection criteria on pages
17 21 through 22 of his Direct Testimony. Although my typical selection criteria are
18 somewhat different from Mr. Coyne's, his proxy group contains many electric utilities
19 that I have included in my comparison groups in other recent cases. For purposes of
20 this case, it is reasonable to proceed with the proxy group of 12 companies shown by
21 Mr. Coyne in Figure 4, page 22, of his Prefiled Testimony.

22
23

1 **Q22. How do the S&P credit ratings of Mr. Coyne's proxy group compare to GMP's**
2 **credit rating?**

3 A22. Table 2 below shows the current S&P credit ratings of the companies in the proxy
4 group and GMP's current rating.

ALLETE, Inc.	BBB+
Alliant Energy Corporation	A-
Ameren Corp.	BBB+
American Electric Power Co.	A-
El Paso Electric Co.	BBB
IDACORP, Inc.	BBB
PG&E Corporation	A-
Pinnacle West Capital Corp.	A-
PNM Resources, Inc.	BBB+
Portland General Electric Company	BBB
PPL Corporation	A-
Xcel Energy Inc.	A-
GMP	A-
Credit ratings retrieved July 17, 2017	

5
6
7
8
9
10
11

The overall group credit rating is slightly lower than GMP's credit rating of A-. This is because six of the twelve companies have BBB/BBB+ credit ratings. This suggests that, other things equal, GMP has lower risk and a slightly lower expected ROE than the proxy group average.

1 **Q23. What was your first step in determining the DCF return on equity for the proxy**
2 **group?**

3 A23. I first determined the current dividend yield, D_1/P_0 , from the basic equation. My
4 general practice is to use six months as the most reasonable period over which to
5 estimate the dividend yield. The six-month period I used covered the months from
6 February through July 2017. I obtained historical prices and dividends from Yahoo!
7 Finance. The annualized dividend divided by the average monthly price represents the
8 average dividend yield for each month in the period.

9
10 The resulting average dividend yield for the comparison group is 3.09%. These
11 calculations are shown in Exhibit PSD-RAB-3.

12
13 **Q24. Having established the average dividend yield, how did you determine the**
14 **investors' expected growth rate for the electric comparison group?**

15 A24. The investors' expected growth rate, in theory, correctly forecasts the constant rate of
16 growth in dividends. The dividend growth rate is a function of earnings growth and the
17 payout ratio, neither of which is known precisely for the future. We refer to a perpetual
18 growth rate since the DCF model has no arbitrary cut-off point. We must estimate the
19 investors' expected growth rate because there is no way to know with absolute certainty
20 what investors expect the growth rate to be in the short term, much less in perpetuity.

21
22 For my analysis in this proceeding, I used three major sources of analysts' forecasts for
23 growth. These sources are The Value Line Investment Survey, Zacks, and First

1 Call/IBES. This is the method I typically use for estimating growth for my DCF
2 calculations.

3
4 **Q25. Please briefly describe Value Line, Zacks, and First Call/IBES.**

5 A25. The Value Line Investment Survey is a widely used and respected source of investor
6 information that covers approximately 1,700 companies in its Standard Edition and
7 several thousand in its Plus Edition. It is updated quarterly and probably represents the
8 most comprehensive of all investment information services. It provides both historical
9 and forecasted information on a number of important data elements. Value Line neither
10 participates in financial markets as a broker nor works for the utility industry in any
11 capacity of which I am aware.

12
13 Zacks gathers opinions from a variety of analysts on earnings growth forecasts for
14 numerous firms including regulated electric utilities. The estimates of the analysts
15 responding are combined to produce consensus average estimates of earnings growth. I
16 obtained Zacks' earnings growth forecasts from its web site.

17
18 Like Zacks, First Call/IBES also compiles and reports consensus analysts' forecasts of
19 earnings growth. I obtained these forecasts from Yahoo! Finance.

20
21 **Q26. Why did you rely on analysts' forecasts in your analysis?**

22 A26. Return on equity analysis is a forward-looking process. Five-year or ten-year historical
23 growth rates may not accurately represent investor expectations for dividend growth.

1 Analysts' forecasts for earnings and dividend growth provide better proxies for the
2 expected growth component in the DCF model than historical growth rates. Analysts'
3 forecasts are also widely available to investors and one can reasonably assume that they
4 influence investor expectations.

5
6 **Q27. Is there an exceptional circumstance with any of your sources for earnings growth
7 that you would like to explain?**

8 A27. Yes. The earnings growth forecast for Xcel Energy from Yahoo! Finance was not
9 available at the time I prepared by testimony and analyses. Normally, Yahoo! Finance
10 provides a 5-year earnings growth forecast for Xcel Energy. I referred to Reuters and
11 CNN Money and discovered that these sources had a 5-year earnings growth forecast
12 for Xcel Energy of 5.32%. This forecast is close to the Yahoo! Finance growth forecast
13 of 5.65% used by Mr. Coyne in his testimony. For purposes of my DCF analysis in my
14 Direct Testimony, I will use the 5.65% forecast from Mr. Coyne's testimony. I will
15 update my analyses in my Rebuttal Testimony with the most recent numbers at that
16 time.

17
18 **Q28. Please explain how you used analysts' dividend and earnings growth forecasts in
19 your constant growth DCF analysis.**

20 A28. Page 1, Columns (1) through (5) of Exhibit PSD-RAB-4 shows the forecasted dividend,
21 earnings, and retention growth rates from Value Line and the earnings growth forecasts
22 from First Call/IBES and Zacks. In my analysis I used four of these growth rates:
23 dividend and earnings growth from Value Line and earnings growth from Zacks and

1 First Call/IBES. It is important to include dividend growth forecasts in the DCF model
2 since the model calls for forecasted cash flows. Value Line is the only sources of
3 which I am aware that forecasts dividend growth and my approach gives this forecast
4 equal weight with the three earnings growth forecasts.

5
6 **Q29. How did you proceed to determine the DCF return of equity for the comparison**
7 **group?**

8 A29. To estimate the expected dividend yield (D_1), the current dividend yield must be moved
9 forward in time to account for dividend increases over the next twelve months. I
10 estimated the expected dividend yield by multiplying the current dividend yield by one
11 plus one-half the expected growth rate.

12
13 Page 2 of Exhibit PSD-RAB-4 presents my standard method of calculating dividend
14 yields, growth rates, and return on equity for the comparison group of companies. The
15 DCF Return on Equity Calculation section shows the application of each of four growth
16 rates I used in my analysis to the current group dividend yield of 3.09% to calculate the
17 expected dividend yield. I then added the expected growth rates to the expected
18 dividend yield. In evaluating investor expected growth rates, I use both the average and
19 the median values for the group under consideration. Method 1 uses the group average
20 expected growth rate and Method 2 uses the group median expected growth rate. The
21 calculations of the resulting DCF returns on equity for both methods are presented on
22 page 2 of Exhibit PSD-RAB-4.

23

1 **Q30. What are the results of your constant growth DCF model?**

2 A30. For the average growth rates in Method 1, the results range from 8.25% to 9.01%, with
3 the average of these results being 8.77%. Using the median growth rates in Method 2,
4 the results range from 8.62% to 8.77%, with the average of these results being 8.68%.

5

6

Capital Asset Pricing Model

7 **Q31. Briefly summarize the Capital Asset Pricing Model ("CAPM") approach.**

8 A31. The theory underlying the CAPM approach is that investors, through diversified
9 portfolios, may combine assets to minimize the total risk of the portfolio.

10 Diversification allows investors to diversify away all risks specific to a particular
11 company and be left only with market risk that affects all companies. Thus, the CAPM
12 theory identifies two types of risks for a security: company-specific risk and market
13 risk. Company-specific risk includes such events as strikes, management errors,
14 marketing failures, lawsuits, and other events that are unique to a particular firm.
15 Market risk includes inflation, business cycles, war, variations in interest rates, and
16 changes in consumer confidence. Market risk tends to affect all stocks and cannot be
17 diversified away. The idea behind the CAPM is that diversified investors are rewarded
18 with returns based on market risk.

19

20 Within the CAPM framework, the expected return on a security is equal to the risk-free
21 rate of return plus a risk premium that is proportional to the security's market, or non-
22 diversifiable, risk. Beta is the factor that reflects the inherent market risk of a security
23 and measures the volatility of a particular security relative to the overall market for

1 securities. For example, a stock with a beta of 1.0 indicates that if the market rises by
2 15%, that stock will also rise by 15%. This stock moves in tandem with movements in
3 the overall market. Stocks with a beta of 0.5 will only rise or fall 50% as much as the
4 overall market. So with an increase in the market of 15%, this stock will only rise
5 7.5%. Stocks with betas greater than 1.0 will rise and fall more than the overall market.
6 Thus, beta is the measure of the relative risk of individual securities vis-à-vis the
7 market.

8
9 Based on the foregoing discussion, the equation for determining the return for a security
10 in the CAPM framework is:

$$K = Rf + \beta(MRP)$$

11
12
13 *Where:* K = *Required Return on equity*
14 Rf = *Risk-free rate*
15 MRP = *Market risk premium*
16 β = *Beta*

17
18 This equation tells us about the risk/return relationship posited by the CAPM. Investors
19 are risk averse and will only accept higher risk if they expect to receive higher returns.

20 These returns can be determined in relation to a stock's beta and the market risk
21 premium. The general level of risk aversion in the economy determines the market risk
22 premium. If the risk-free rate of return is 3.0% and the required return on the total
23 market is 15%, then the risk premium is 12%. Any stock's required return can be
24 determined by multiplying its beta by the market risk premium. Stocks with betas
25 greater than 1.0 are considered riskier than the overall market and will have higher

1 required returns. Conversely, stocks with betas less than 1.0 will have required returns
2 lower than the market as a whole.

3
4 **Q32. In general, are there concerns regarding the use of the CAPM in estimating the**
5 **return on equity?**

6 A32. Yes. There is some controversy surrounding the use of the CAPM.⁷ There is evidence
7 that beta is not the primary factor in determining the risk of a security. For example,
8 Value Line's "Safety Rank" is a measure of total risk, not its calculated beta coefficient.
9 Beta coefficients usually describe only a small amount of total investment risk.

10
11 There is also substantial judgment involved in estimating the required market return. In
12 theory, the CAPM requires an estimate of the return on the total market for investments,
13 including stocks, bonds, real estate, etc. It is nearly impossible for the analyst to
14 estimate such a broad-based return. Often in utility cases, a market return is estimated
15 using the S&P 500 or the return on Value Line's stock market composite. However,
16 these are limited sources of information with respect to estimating the investor's
17 required return for all investments. In practice, the total market return estimate faces
18 significant limitations to its estimation and, ultimately, its usefulness in quantifying the
19 investor required ROE.

20

⁷ For a more complete discussion of some of the controversy surrounding the use of the CAPM,
refer to *A Random Walk Down Wall Street* by Burton Malkiel, pp. 206 - 211, 2007 edition.

1 In the final analysis, a considerable amount of judgment must be employed in
2 determining the risk-free rate and market return portions of the CAPM equation. The
3 analyst's application of judgment can significantly influence the results obtained from
4 the CAPM. My past experience with the CAPM indicates that it is prudent to use a
5 wide variety of data in estimating investor-required returns. Of course, the range of
6 results may also be wide, indicating the difficulty in obtaining a reliable estimate from
7 the CAPM.

8
9 **Q33. How did you estimate the market return portion of the CAPM?**

10 A33. The first source I used was the Value Line Investment Analyzer, Plus Edition, for July
11 17, 2017. This edition covers several thousand stocks. The Value Line Investment
12 Analyzer provides a summary statistical report detailing, among other things, forecasted
13 growth rates for earnings and book value for the companies Value Line follows as well
14 as the projected total annual return over the next 3 to 5 years. I present these growth
15 rates and Value Line's projected annual return on page 2 of Exhibit PSD-RAB-5. I
16 included median earnings and book value growth rates. The estimated market returns
17 using Value Line's market data range from 9.00% to 9.63%. The average of these
18 market returns is 9.31%.

19
20 **Q34. Why did you use median growth rate estimates rather than the average growth
21 rate estimates for the Value Line companies?**

22 A34. Using median growth rates is likely a more accurate method of estimating the central
23 tendency of Value Line's large data set compared to the average growth rates. Average

1 earnings and book value growth rates may be unduly influenced by very high or very
2 low 3 - 5-year growth rates that are unsustainable in the long run. For example, Value
3 Line's Statistical Summary shows both the highest and lowest value for earnings and
4 book value growth forecasts. For earnings growth, Value Line showed the highest
5 earnings growth forecast to be 140.4% and the lowest growth rate to be -30.5%. The
6 highest book value growth rate was 88.5% and the lowest was -29%. Neither of these
7 levels of growth is compatible with long-run growth prospects for the market as a
8 whole. The median growth rate is not influenced by such extremes because it
9 represents the middle value of a very wide range of earnings growth rates.

10
11 **Q35. Please continue with your market return analysis.**

12 A35. I also considered a supplemental check to the Value Line projected market return
13 estimates. Duff and Phelps compiled a study of historical returns on the stock market in
14 its 2017 SBBI Yearbook. Some analysts employ this historical data to estimate the
15 market risk premium of stocks over the risk-free rate. The assumption is that a risk
16 premium calculated over a long period of time is reflective of investor expectations
17 going forward. Exhibit PSD-RAB-6 presents the calculation of the market returns
18 using the historical data.

19
20 **Q36. Please explain how this historical risk premium is calculated.**

21 A36. Exhibit PSD-RAB-6 shows both the geometric and arithmetic average of yearly
22 historical stock market returns over the historical period from 1926 - 2016. The
23 average annual income return for 20-year Treasury bond is subtracted from these

1 historical stocks returns to obtain the historical market risk premium of stock returns
2 over long-term Treasury bond income returns. The historical market risk premium
3 range is 5.0% - 7.0%.

4
5 **Q37. Did you add an additional measure of the historical risk premium in this case?**

6 A37. Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and Dr.
7 Peng Chen indicating that the historical risk premium of stock returns over long-term
8 government bond returns has been significantly influenced upward by substantial
9 growth in the price/earnings ("P/E") ratio for stocks from 1980 through 2001.⁸ Duff
10 and Phelps noted that this growth in the P/E ratio for stocks was subtracted out of the
11 historical risk premium because "it is not believed that P/E will continue to increase in
12 the future." The adjusted historical arithmetic market risk premium is 5.97%, which I
13 have also included in Exhibit PSD-RAB-6. This risk premium estimate falls near the
14 middle of the market risk premium range.

15
16 **Q38. How did you determine the risk free rate?**

17 A38. I used the average yields on the 20-year Treasury bond and five-year Treasury note
18 over the six-month period from January through June 2017. This was the latest
19 available data from the Federal Reserve's Selected Interest Rates (Daily) H.15 web site
20 during the preparation of my Direct Testimony. The 20-year Treasury bond is often
21 used by rate of return analysts as the risk-free rate, but it contains a significant amount

⁸ 2017 *SBBi Yearbook*, Duff and Phelps, pp. 10-28 through 10-30.

1 of interest rate risk. The five-year Treasury note carries less interest rate risk than the
2 20-year bond and is more stable than three-month Treasury bills. Therefore, I have
3 employed both securities as proxies for the risk-free rate of return. This approach
4 provides a reasonable range over which the CAPM return on equity may be estimated.
5

6 **Q39. How did you determine the value for beta?**

7 A39. I obtained the betas for the companies in the electric company comparison group from
8 most recent Value Line reports. The average of the Value Line betas for the
9 comparison group is 0.69.
10

11 **Q40. Please summarize the CAPM results.**

12 A40. For my forward-looking CAPM return on equity estimates, the CAPM results are
13 7.02% - 7.28%. Using historical risk premiums, the CAPM results are 6.17% - 7.55%.
14

15 **Conclusions and Recommendations**

16 **Q41. Please summarize the cost of equity results for your DCF and CAPM analyses.**

17 A41. Table 3 below summarizes my return on equity results using the DCF and CAPM for my
18 comparison group of companies.

TABLE 3
SUMMARY OF ROE ESTIMATES

Baudino DCF Methodology:	
Average Growth Rates	
- High	9.01%
- Low	8.25%
- Average	8.77%
Median Growth Rates:	
- High	8.77%
- Low	8.62%
- Average	8.68%
CAPM:	
- 5-Year Treasury Bond	7.02%
- 20-Year Treasury Bond	7.28%
- Historical Returns	6.17% - 7.55%

1

2

3 **Q42. What is your recommended return on equity for GMP?**

4 A42. I recommend that the Commission adopt an 8.75% return on equity for GMP. My
5 recommendation is consistent with the average DCF results from my constant growth
6 DCF model. Based on current market evidence, an 8.75% return on equity is fair and
7 reasonable for A-rated, lower risk electric utility company like GMP. In fact, as I
8 demonstrated in Table 2, GMP has a credit rating that slightly exceeds that of the proxy
9 group. Thus, a reasonable case could be made that GMP's ROE should be set slightly
10 lower than the overall results for the proxy group. However, 8.75% is certainly a
11 reasonable allowed ROE for the Company in today's low interest rate environment.

12

13 **Q43. Did you review GMP's requested cost of short-term debt?**

14 A43. Yes. The Company's requested a cost of short-term debt is 1.55%. My review of the
15 Company's recent cost of short-term debt indicates that 1.55% is reasonably consistent

1 with its cost over the last 12 months. I recommend that the Commission adopt 1.55%
2 for the cost of short-term debt.

3
4 **Q44. Did you review GMP's requested cost of long-term debt?**

5 A44. Yes. In addition to the cost of its existing long-term debt, the Company included two
6 projected issues of long-term debt: a \$35 million issue with a projected cost of 4.25%
7 and a \$30 million issue with a projected cost of 4.50%.

8
9 **Q45. Do you agree with the cost of the projected issues of long-term debt?**

10 A45. No. I recommend that the Commission reduce the cost of both of these projected issues
11 slightly based on interest rate trends in 2017. I showed in Table 1 that the average rate
12 for public utility debt in 2017 ranged from 4.01% in June to 4.30% in March. Despite
13 recent increases in the Federal Funds Rate, the interest rate on long-term utility debt has
14 actually declined. Further, GMP completed a long-term debt issue in April 2017 with
15 an interest rate of 4.17%.

16
17 I recommend that for purposes of this case, the Commission set the rate for the two
18 projected long-term debt issues at 4.20%. This is reasonably close to the cost that GMP
19 achieved this year and is within the range of long-term utility debt cost so far in 2017.

20
21 I utilized the spreadsheet the Company provided supporting Attachment B, Schedule 3,
22 which presents the cost of capital for the test year and rate year, to recalculate the cost
23 of long-term debt using 4.20% for the projected debt issues. However, the impact on

1 the overall cost of long-term debt for GMP was small and did not change the overall
2 cost of long-term debt from 5.14%. Therefore, I will accept this cost of long-term debt
3 in my weighted cost of capital recommendation.

4
5 **Q46. What is your recommended weighted cost of capital?**

6 A46. My recommended weighted cost of capital is 6.70%. Table 4 below presents the
7 calculation. I accepted GMP's requested capital structure and, specifically, its
8 requested equity percentage of 48.63%. I reviewed GMP's historical capital structures
9 and the requested equity ratio of 48.63% is lower than the Company's equity ratios
10 from 2011 through 2016.⁹

<u>Source</u>	<u>Percentage</u>	<u>Cost</u>	<u>Weighted</u> <u>Cost</u>
Bonds	46.02%	5.14%	2.37%
Bank Loans	5.35%	1.55%	0.08%
Equity	48.63%	8.75%	4.26%
Totals	100.00%		6.71%

11
12

⁹ GMP provided historical capital structures from 2010 through 2017 in response to PSD Set 1, Question 7.

1 **IV. RESPONSE TO GREEN MOUNTAIN POWER ROE TESTIMONY**

2 **Q47. Have you reviewed the Direct Testimony of Mr. Coyne?**

3 A47. Yes.

4

5 **Q48. Please summarize Mr. Coyne's testimony and approach to return on equity.**

6 A48. Mr. Coyne employed four methods to estimate the investor required rate of return for
7 GMP: (1) the constant growth DCF model, (2) the multi-stage DCF model, (3) the
8 CAPM, and (4) the Risk Premium model.

9

10 For his constant growth DCF approach, Mr. Coyne used Value Line, First Call, and
11 Zacks for the investor expected growth rate. Mr. Coyne's mean growth rate ROE results
12 for his proxy group of companies ranged from 8.60% to 8.69%. GMP Witness Coyne
13 Direct at 28, Figure 5.

14

15 With respect to the DCF model, Mr. Coyne used 30-day, 90-day, and 180-day average
16 stock prices ending February 28, 2017 to estimate the dividend yield for the companies
17 in his proxy group.

18

19 With respect to his multi-stage DCF analysis, Mr. Coyne used the expected growth
20 rates from his constant growth DCF analysis for years 1 – 5, two long-term GDP
21 forecasts for the long-term growth rate for years 11 forward, and a transition period in
22 years 6 – 10 using linear interpolations of near-term and long-term growth rates. The

1 mean results using projected and historical GDP growth ranged from 8.06% to 9.08%.

2 Witness Coyne Direct at 31, Figure 6.

3
4 With respect to the CAPM, Mr. Coyne's results ranged from 9.58% to 10.08%.

5 Witness Coyne Direct at 36, lines 16 – 20.

6
7 Mr. Coyne's formulation of the bond yield plus risk premium approach resulted in a
8 ROE estimate range of 9.88% - 10.39%. Witness Coyne Direct at 39, Figure 8.

9
10 Mr. Coyne also discussed making an adjustment for flotation costs to his recommended
11 ROE, but did not make an explicit adjustment. Witness Coyne Direct at 47.

12
13 Based on the results of his analyses and judgment, Mr. Coyne recommended a ROE
14 range for GMP of 9.50%.

15
16 **Constant Growth DCF Analyses**

17 **Q49. How do the results of your constant growth DCF analyses compare with those of**
18 **Mr. Coyne's?**

19 A49. Our results are rather consistent. We used the same proxy group and sources for
20 expected growth rates. I also included Value Line's forecasted dividend growth, while
21 Mr. Coyne did not. Nevertheless, the range of Mr. Coyne's mean DCF results are only
22 a few basis points different from my results.

23

1 **Q50. On pages 13 through 15 of his Prefiled Testimony, Mr. Coyne discussed the higher**
2 **stock valuations and lower dividend yield for utility companies, concluding on**
3 **page 15 that “the DCF model is likely understating the forward-looking cost of**
4 **equity for the proxy group companies.” Please respond to Mr. Coyne’s conclusion**
5 **regarding the DCF model.**

6 A50. I disagree with Mr. Coyne’s conclusion regarding the accuracy of the DCF model in
7 today’s current economic environment.

8
9 Mr. Coyne cited Value Line projections that the price/earnings (“P/E”) ratios for the
10 companies in the proxy group “will correct” in the next few years. Coyne Prefiled
11 Testimony at 15. It is important to note that this is based on forecasts of P/E ratios over
12 the next few years that may or may not come to pass. It is far more important to focus
13 upon what investors are willing to pay right now for utility stocks when estimating and
14 setting the allowed ROE for GMP. Indeed, current stock prices tell us how investors
15 value utility stocks compared to all other available investment opportunities. This is the
16 principle of “opportunity cost” that I described earlier in my testimony. It is likely that
17 investors are aware of the Value Line forecasts that Mr. Coyne cited, but their
18 preferences for utility stocks are revealed by the prices they are willing to pay currently
19 for those stocks. Therefore, current P/E ratios are a correct reflection of the current
20 investor required return on equity.

21
22 If Value Line’s forecasts come to pass and the investor required return rises, GMP
23 could file for an increased ROE in a future base rate proceeding.

1

2 **Q51. On page 16 of his Prefiled Testimony, Mr. Coyne cited so-called “anomalous**
3 **conditions” in current capital markets. Please respond to Mr. Coyne’s testimony**
4 **on this point.**

5 A51. I agree that the economy is in a low interest rate environment that has been supported
6 quite deliberately by Federal Reserve policy. Nonetheless, current financial market
7 conditions do indeed provide a representative basis for estimating the cost of equity capital
8 for GMP and for utilities generally. The fact that interest rates are relatively low by
9 historical standards does not preclude the rate of return analyst from making a reasonable
10 assessment of investor required ROEs using current stock prices and interest rates.

11

12 **Q52. Is there support for the position that today's currently low interest rates is part of**
13 **a long-term trend?**

14 A52. Yes. In a weekly blog at the Brookings Institution, former Federal Reserve Chairman
15 Ben Bernanke wrote the following:¹⁰

16 Interest rates around the world, both short-term and long-term, are
17 exceptionally low these days. The U.S. government can borrow for
18 ten years at a rate of about 1.9 percent, and for thirty years at about
19 2.5 percent. Rates in other industrial countries are even lower: For
20 example, the yield on ten-year government bonds is now around 0.2
21 percent in Germany, 0.3 percent in Japan, and 1.6 percent in the
22 United Kingdom. In Switzerland, the ten-year yield is currently
23 slightly negative, meaning that lenders must pay the Swiss
24 government to hold their money! The interest rates paid by
25 businesses and households are relatively higher, primarily because
26 of credit risk, but are still very low on an historical basis.
27

¹⁰ Ben S. Bernanke, "Why Are Interest Rates So Low", Weekly Blog, Brookings, March 30, 2015.
<https://www.brookings.edu/blog/ben-bernanke/2015/03/30/why-are-interest-rates-so-low/>

1 Low interest rates are not a short-term aberration, but part of a long-
2 term trend. As the figure below shows, ten-year government bond
3 yields in the United States were relatively low in the 1960s, rose to
4 a peak above 15 percent in 1981, and have been declining ever since.
5 That pattern is partly explained by the rise and fall of inflation, also
6 shown in the figure. All else equal, investors demand higher yields
7 when inflation is high to compensate them for the declining
8 purchasing power of the dollars with which they expect to be repaid.
9 But yields on inflation-protected bonds are also very low today; the
10 real or inflation-adjusted return on lending to the U.S. government
11 for five years is currently about *minus* 0.1 percent.
12

13 Why are interest rates so low? Will they remain low? What are the
14 implications for the economy of low interest rates?
15

16 If you asked the person in the street, “Why are interest rates so
17 low?”, he or she would likely answer that the Fed is keeping them
18 low. That’s true only in a very narrow sense. The Fed does, of
19 course, set the benchmark nominal short-term interest rate. The
20 Fed’s policies are also the primary determinant of inflation and
21 inflation expectations over the longer term, and inflation trends
22 affect interest rates, as the figure above shows. But what matters
23 most for the economy is the real, or inflation-adjusted, interest rate
24 (the market, or nominal, interest rate minus the inflation rate). The
25 real interest rate is most relevant for capital investment decisions,
26 for example. The Fed’s ability to affect real rates of return,
27 especially longer-term real rates, is transitory and limited. Except in
28 the short run, real interest rates are determined by a wide range of
29 economic factors, including prospects for economic growth—not by
30 the Fed.
31

32 **Q53. Mr. Baudino, should the Commission rely on the DCF results for its decision on**
33 **the allowed ROE for GMP?**

34 A53. Yes. The DCF model employs current stock prices, which are the best indicators of
35 investors’ return requirements that we have. The DCF also includes earnings and
36 dividend growth forecasts that influence investors’ decision-making. The DCF model
37 is the most reliable and accurate model for the Commission to rely upon in this
38 proceeding.

1

2 **Q54. Mr. Coyne also presented the low mean and high mean DCF results in Figure 5.**

3 **Should the Commission rely on the low and high mean results of his DCF**
4 **analyses?**

5 A54. No. The high and low mean results have no real value for purposes of setting the ROE
6 for GMP in this case. They merely report on the range of mean, or average, results
7 from MR. Coyne's DCF analyses. Mr. Coyne made a similar presentation for his
8 multi-stage DCF results. Rather, it is the mean results that are relevant for purposes of
9 setting the ROE in this proceeding and it is this approach I used in presenting my DCF
10 recommendation.

11

12

Multi-stage DCF Model

13 **Q55. On page 31 of his Prefiled Direct Testimony, Mr. Coyne presented the results of**
14 **his multi-stage DCF model. What are your conclusions with respect to Mr.**
15 **Coyne's analyses?**

16 A55. The range of Mr. Coyne's mean estimates is 8.06% - 9.08%. The midpoint of this
17 range is 8.57%.

18

19 Mr. Coyne's multi-stage DCF results are reasonably consistent with the constant
20 growth DCF results. This due mainly to his estimates of long-term GDP growth, which
21 range from 4.35% - 5.50%. These GDP growth rates are similar to the earnings growth
22 rates he used in his constant growth DCF analyses.

23

1 Although I do not necessarily agree with all the assumptions in Mr. Coyne's analysis,
2 his multi-stage DCF model show that relying on GDP growth for long-term earnings
3 growth does not produce significantly different results from the constant growth DCF
4 model.

5
6 **Q56. On page 32 of his Prefiled Testimony Mr. Coyne cited to a recent Federal Energy
7 Regulatory Commission ("FERC") Order that expressed concerns regarding the
8 DCF model. Please respond to this portion of Mr. Coyne's testimony.**

9 A56. I disagree with the FERC's finding with respect to so-called "anomalous" market
10 conditions and the alleged impact on the DCF model results. I discussed the notion of
11 anomalous market conditions in greater detail earlier in my testimony and why I
12 recommend that the Commission rely on the DCF model in this proceeding. Simply
13 because the FERC made a decision regarding the use of the DCF model does not mean
14 that the Commission should follow suit and agree with the FERC in this case.

15
16 **CAPM**

17 **Q57. Briefly summarize the main elements of Mr. Coyne's CAPM approach.**

18 A57. On page 35 of his Prefiled Testimony, Mr. Coyne testified that he used the projected
19 yield on the 30-year Treasury bond from Blue Chip. This projected yield was 4.20%.
20 Mr. Coyne did not consider any shorter maturity bonds, such as the 5-year Treasury
21 note.

22

1 For the market risk premium, Mr. Coyne conducted a constant growth DCF analysis on
2 each of the S&P 500 companies and then calculated the expected total market return
3 weighted by the market capitalization for each company. He subtracted the total
4 market return of 12.71% from the projected risk-free rate of 4.20% to derive his
5 recommended market risk premium of 8.51%.

6
7 Mr. Coyne used two different estimates for beta from Bloomberg (0.632) and Value
8 Line (0.692).

9
10 **Q58. Is it appropriate to use forecasted or projected bond yields in the CAPM?**

11 A58. Definitely not. Current interest rates and bond yields embody all of the relevant market
12 data and expectations of investors, including expectations of changing future interest
13 rates. The forecasted bond yield used by Mr. Coyne is speculative at best and may
14 never come to pass. Current interest rates provide tangible and verifiable market
15 evidence of investor return requirements today, and these are the interest rates and bond
16 yields that should be used in both the CAPM and in the bond yield plus risk premium
17 analyses. To the extent that investors give forecasted interest rates any weight at all,
18 they are already incorporated in current securities prices.

19
20 Furthermore, Mr. Coyne's 4.20% forecasted 30-year Treasury Bond yield is grossly
21 excessive compared to current long-term bond yields. My 6-month average 20-year
22 Treasury Bond yield is 2.71%. As of July 18, 2017 the yield on the 30-year Treasury
23 Bond was 2.85%. Mr. Coyne's forecasted yield of 4.20% is 135 basis points greater

1 than the current yield for 30-year Treasury bonds. Given how far off the Blue Chip
2 forecast is from current yields, I strongly recommend that Mr. Coyne's CAPM results
3 be rejected out of hand.

4
5 **Q59. Beginning on page 17 of his Prefiled Testimony, Mr. Coyne described expectations**
6 **of higher interest rates from Blue Chip Financial Forecasts in support of his use of**
7 **forecasted 30-Year Treasury bond yields. Please comment on this portion of Mr.**
8 **Coyne's testimony.**

9 A59. It is not appropriate to rely on forecasted interest rates from Blue Chip Financial
10 Forecasts in either the CAPM or the Risk Premium models. Forecasts are often wrong
11 and should not be used to set the ROE in regulatory proceedings. Current interest rates
12 already embody investors' expectations of future increases in interest rates, if any.

13
14 **Q60. What would Mr. Coyne's mean CAPM result be using the current yield on 30-year**
15 **Treasury bonds?**

16 A60. Using the current yield on the 30-year Treasury bond requires a recalculation of Mr.
17 Coyne's Market DCF Derived risk premium shown on Exhibit Petitioner JMC-5.
18 Subtracting the current 30-year Treasury bond yield of 2.30% from Mr. Coyne's S&P
19 500 Market Return of 13.62% results is a market risk premium of 11.32%. Averaging
20 this market premium with Mr. Coyne's historical risk premium of 7.0% results in an
21 average market risk premium of 9.16%

22
23 The revised result for Mr. Coyne's CAPM would be as follows:

1	30-Year Risk-free Rate (June 30, 2016)	2.85%
2	Average Bloomberg and Value Line betas	.662
3	Market Risk Premium	<u>8.51%</u>
4	<i>Revised CAPM Return on equity</i>	8.48%

5

6 This revised CAPM result is higher than my CAPM results, but is still below my
7 recommended ROE for GMP of 8.75%.

8

9 **Q61. Should Mr. Coyne have considered shorter-term Treasury yields in his CAPM**
10 **analyses?**

11 A61. Yes. In theory, the risk-free rate should have no interest rate risk. 30-year Treasury
12 Bonds do face this risk, which is the risk that interest rates could rise in the future and
13 lead to a capital loss for the bondholder. Typically, the longer the duration of the bond,
14 the greater the interest rate risk. The 5-year Treasury note has much less interest rate
15 risk than 20-year or 30-year Treasury Bonds and may be considered one reasonable
16 proxy for a risk-free security. My CAPM analysis shows that the ROE using a 5-year
17 Treasury note would be only 7.05% using the expected market return. This is much
18 lower than any of the CAPM estimates provided by Mr. Coyne.

19

20 **Q62. Is the S&P 500 a good proxy for the market when estimating a CAPM return on**
21 **equity?**

22 A62. No. That is because the S&P 500 is limited to the stocks of the 500 largest companies
23 in the United States. The market return portion of the CAPM should represent the most

1 comprehensive estimate of the total return for all investment alternatives, not just a
2 small subset of publicly traded stocks. In practice, of course, finding such an estimate
3 is difficult and is one of the more thorny problems in estimating an accurate ROE when
4 using the CAPM. If one limits the market return to stocks, then there are more
5 comprehensive measures of the stock market available, such as the Value Line
6 Investment Survey that I used in my CAPM analysis. Value Line's projected earnings
7 growth used a sample of 2,114 stocks and its book value growth estimate used 1,525
8 stocks. Value Line's projected annual percentage return included 1,683 stocks. These
9 are much broader samples than Mr. Coyne's limited sample of the S&P 500.

10
11 **Q63. Do the market returns you used in your CAPM suggest that Mr. Coyne's**
12 **estimated market returns are excessive?**

13 A63. Yes. The market returns I estimated from Value Line ranged from 9.00% to 9.63%, far
14 lower than Mr. Coyne's estimated return of 12.71% on the S&P 500.

15
16 In my opinion, the forecasted market growth rate of 10.58% in Mr. Coyne's analysis is
17 overstated. This is by no means a long-run sustainable growth rate. It is nearly twice
18 as large as Mr. Coyne's own GDP forecasts (4.35% - 5.50%). If forecasted GDP
19 growth is used as the long-term expected growth rate for the market, then both Mr.
20 Coyne's and my own market return estimates would fall significantly.

21
22

1 **Bond Yield Plus Risk Premium Analysis**

2 **Q64. Please summarize Mr. Coyne's risk premium approach.**

3 A64. Mr. Coyne developed a historical risk premium using Commission-allowed returns for
4 regulated electric utility companies and forecasted 30-year Treasury bond yields from
5 1992 through December 31, 2016. He used regression analysis to estimate the value of
6 the inverse relationship between interest rates and risk premiums during that period.
7 Applying the regression coefficients to the average risk premium and using both current
8 and projected 30-year Treasury yields, Mr. Coyne's risk premium ROE estimate ranges
9 from 9.88% to 10.39%. Witness Coyne Prefiled Testimony at 39.

10
11 **Q65. Please respond to Mr. Coyne's risk premium analysis.**

12 A65. First, the bond yield plus risk premium approach is imprecise and can only provide very
13 general guidance on the current authorized ROE for a regulated electric utility. Risk
14 premiums can change substantially over time. As such, this approach is a "blunt
15 instrument" for estimating the ROE in regulated proceedings. In my view, a properly
16 formulated DCF model using current stock prices and growth forecasts is far more
17 reliable and accurate than the bond yield plus risk premium approach, which relies on a
18 historical risk premium analysis over a certain period of time.

19
20 Second, I recommend that the Commission reject the use of the forecasted Treasury
21 bond yields for the same reasons I described in my response to Mr. Coyne's CAPM
22 approach. The Blue Chip Consensus 30-Year Treasury yield forecasts resulted in
23 ROEs of 10.07 - 10.39%, the highest of the three results shown Mr. Coyne's Figure 8.

1 Changing Mr. Coyne's analysis only to use the current 30-Year Treasury yield, without
2 addressing other potential shortcomings of that analysis, would result in a ROE of
3 9.88%.

4
5 **Business Risks and Flotation Costs**

6 **Q66. Beginning on page 40 of his Prefiled Testimony, Mr. Coyne discusses his view of**
7 **how GMP's relatively small size affects its risk profile. Please respond to Mr.**
8 **Coyne's testimony on this point.**

9 A66. I agree with Mr. Coyne that economic literature recognizes that smaller companies may
10 be considered riskier by investors and command higher required returns as a result.
11 However, the fact that GMP is a regulated utility would substantially reduce its risk
12 compared to smaller, unregulated companies. Indeed, the Commission has approved
13 regulatory mechanisms and rate treatment for GMP that reduces its risk of recovering
14 its costs and its required return. I would not recommend that the Commission consider
15 GMP's size relative to the companies in the proxy group when deciding its allowed
16 return on equity. Mr. Coyne also declined to make a size adjustment in his
17 recommended ROE.

18
19 **Q67. Mr. Coyne presented an analysis of regulatory risk in his Exhibit GMP-JMC-10.**
20 **In your opinion, do the regulatory rankings shown in this exhibit suggest that the**
21 **Commission provide a higher ROE to GMP?**

22 A67. No, not at all. Vermont received an Average/3 regulatory rank from the Regulatory
23 Research Associates, albeit with a slightly lower number than the average ranking for

1 the proxy group. All things considered, the Commission's regulation has been broadly
2 constructive for GMP for the reasons I cited earlier.

3
4 **Q68. What do the S&P credit ratings tell us with respect to GMP's risk relative to the**
5 **proxy group?**

6 A68. My Table 2 shows that GMP's credit rating of A- is slightly higher than the proxy
7 group. This suggests that GMP has somewhat lower risk relative to the proxy group
8 average. It should be noted that any concerns with respect to size and regulatory risk
9 are already considered in the credit rating of GMP and the companies in the proxy
10 group.

11
12 **Q69. On page 47 of his Prefiled Testimony, Mr. Coyne discussed adding an adjustment**
13 **for flotation costs, though he made no explicit adjustment to his recommendation.**
14 **Should the Commission add a flotation cost adjustment to the cost of equity for**
15 **GMP?**

16 A69. No. In my opinion, it is likely that flotation costs are already accounted for in current
17 stock prices and that adding an adjustment for flotation costs amounts to double
18 counting. A DCF model using current stock prices should already account for investor
19 expectations regarding the collection of flotation costs. Multiplying the dividend yield
20 by a 4% flotation cost adjustment, for example, essentially assumes that the current
21 stock price is wrong and that it must be adjusted downward to increase the dividend
22 yield and the resulting cost of equity. I do not believe that this is an appropriate

1 assumption. Current stock prices most likely already account for flotation costs, to the
2 extent that such costs are even accounted for by investors.

3

4 **Q70. Does this complete your Direct Testimony?**

5 A70. Yes.