STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 18-0974-TF

Tariff filing of Green Mountain Power Corporation requesting a 5.45%
increase in its base rates effective with bills rendered January 1, 2019, to
be fully offset by bill credits through September 30, 2019

PREFILED DIRECT TESTIMONY OF

RICHARD A. BAUDINO

ON BEHALF OF THE

VERMONT DEPARTMENT OF PUBLIC SERVICE

AUGUST 10, 2018

Summary: Mr. Baudino, of J. Kennedy Associates, provides expert testimony on behalf of
the Vermont Department regarding Green Mountain Power's ("GMP's") proposed capital
structure and cost-of-capital. Mr. Baudino finds that GMP's proposed rate of return on equity
("ROE") of 9.3% falls within the range of reasonableness. Mr. Baudino also recommends that
GMP's proposed cost of debt be reduce from 5.07% to 5.03%.

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Mr. Baudino Sponsors the Following Exhibits:

PSD-RAB-1 – Professional Resume

PSD-RAB-2 – GMP Proxy Group – Average Price, Dividend, and Dividend Yield

PSD-RAB-3 – GMP Proxy Group – DCF Growth Rate Analysis

PSD-RAB-4 – GMP Proxy Group – CAPM Analysis (estimated returns)

PSD-RAB-5 – GMP Proxy Group – CAPM Analysis (historic market premium)

I. QUALIFICATIONS AND SUMMARY

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

2 A1. My name is Richard A. Baudino. My business address is J. Kennedy and Associates,

3 Inc. ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell,

4 Georgia 30075.

5

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

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

8

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

10 A3. I received my Master of Arts degree with a major in Economics and a minor in

11 Statistics from New Mexico State University in 1982. I also received my Bachelor

12 of Arts Degree with majors in Economics and English from New Mexico State in

13 1979.

14

15 I began my professional career with the New Mexico Public Service Commission

16 Staff 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

1   In October 1989, I joined the utility consulting firm of Kennedy and Associates as a

2   Senior Consultant where my duties and responsibilities covered substantially the

3   same areas as those during my tenure with the New Mexico Public Service

4   Commission Staff. I became Manager in July 1992 and was named Director of

5   Consulting in January 1995. Currently, I am a consultant with Kennedy and

6   Associates.

7

8   PSD-RAB-1 summarizes my expert testimony experience.

9

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

11 A4.   I am testifying on behalf of the Vermont Department of Public Service ("DPS").

12

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

14 A5.   The purpose of my Direct Testimony is to address the allowed return on equity for

15   Green Mountain Power Corporation ("GMP" or "Company"). I will also address the

16   Company's requested capital structure and the cost of short-term and long-term debt.

17   Finally, I will respond to the Direct Testimony of Mr. James Coyne, witness for the

18   Company.

19

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

21 A6.   First, my independent analyses of the return on equity for GMP indicate a reasonable

22   investor required return on equity ("ROE") in the range of 8.70% - 9.35%. My

23   recommended ROE for GMP in this proceeding would be 9.10%. I note, however,

1   that the 9.3% 2019 ROE that GMP seeks in this calls falls within the range of my

2   DCF analyses in this proceeding and is quite close to my recommended ROE of

3   9.1%.

4   Second, I recommend that GMP's requested cost of short-term debt be accepted by

5   the Commission.

6

7   Third, I recommend that GMP's requested cost of debt be reduced by the

8   Commission. My recommendation includes lowering GMP's forecasted interest

9   rates for three projected bond issuances in 2018 and 2019. My recommended cost of

10   debt is 5.03%, slightly lower than GMP's requested 5.07% cost of debt.

11

12   Fourth, I recommend that the Commission adopt GMP's requested capital structure

13   for the rate year.

14

15   Fifth, I recommend that the Commission adopt my recommended weighted cost of

16   capital of 6.97%. This recommendation reflects the annualized rate year cost of

17   equity and long-term debt.

18

19   Sixth, in Section IV of my testimony I will respond to GMP's witness Coyne's

20   Direct Testimony and ROE recommendation.

21

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 10**

3   **years?**

4   A7.   Since 2007 and 2008, the overall trend in interest rates in the U.S. and the world

5   economy has been sharply lower. This trend was precipitated by the 2007 financial

6   crisis and severe recession that followed in December 2007. In response to this

7   economic crisis, the Federal Reserve ("Fed") undertook an unprecedented series of

8   steps to stabilize the economy, ease credit conditions, and lower unemployment and

9   interest rates. These steps are commonly known as Quantitative Easing ("QE") and

10   were implemented in three distinct stages: QE1, QE2, and QE3. The Fed's stated

11   purpose of QE was "to support the liquidity of financial institutions and foster

12   improved conditions in financial markets."[1]

13

14   **Q8.   Mr. Baudino, before you continue please provide a brief explanation of how the**

15   **Fed uses interest rates to improve conditions in the financial markets.**

16   A8.   Generally, the Fed uses monetary policy to implement certain economic goals. The

17   Fed explained its monetary policy as follows:

18   Monetary policy in the United States comprises the Federal
19   Reserve's actions and communications to promote maximum
20   employment, stable prices, and moderate long-term interest
21   rates--the three economic goals the Congress has instructed
22   the Federal Reserve to pursue.
23

---

[1]   (http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm).

1
2
3

> The Federal Reserve conducts the nation's monetary policy by
> managing the level of short-term interest rates and influencing
> the overall availability and cost of credit in the economy.[2]

4   One of the Fed's primary tools for conducting monetary policy is setting the federal

5   funds rate. The federal funds rate is the interest rate set by the Fed that banks and

6   credit unions charge each other for overnight loans of reserve balances.

7   Traditionally the federal funds rate directly influences short-term interest rates, such

8   as the Treasury bill rate and interest rates on savings and checking accounts. The

9   federal funds rate has a more indirect effect on long-term interest rates, such as the

10   30-Year Treasury bond and private and corporate long-term debt. Long-term interest

11   rates are set more by market forces that influence the supply and demand of loanable

12   funds.

13

14   **Q9.   Please continue with your discussion of the Fed's quantitative easing programs.**

15   A9.   QE1 was implemented from November 2008 through approximately March 2010.

16   During this time, the Fed cut its key Federal Funds Rate to nearly 0% and purchased

17    $1.25 trillion of mortgage-backed securities and $175 billion of agency debt

18   purchases. QE2 was implemented in November 2010 with the Fed announcing that

19   it would purchase an additional $600 billion of Treasury securities by the second

20   quarter of 2011.[3] Beginning in September 2011, the Fed initiated a "maturity

21   extension program" in which it sold or redeemed $667 billion of shorter-term

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[2]   From the Federal Reserve's web site and the section entitled "Monetary Policy".

[3]   (http://www.federalreserve.gov/newsevents/press/monetary/20101103a.htm)
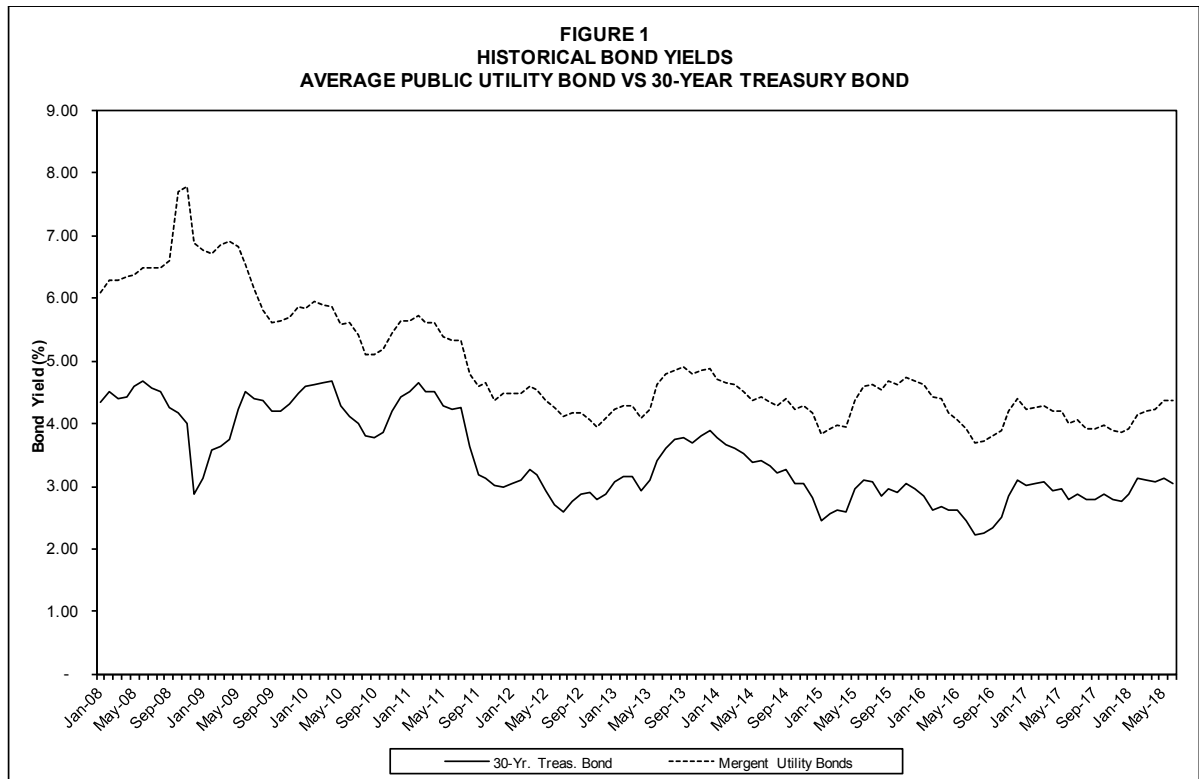
1   Treasury securities and used the proceeds to buy longer-term Treasury securities.

2   This program, also known as "Operation Twist," was designed by the Fed to lower

3   long-term interest rates and support the economic recovery. Finally, QE3 began in

4   September 2012 with the Fed announcing an additional bond purchasing program of

5    $40 billion per month of agency mortgage backed securities.

6

7   The Fed began to pare back its purchases of securities in the last few years. On

8   January 29, 2014 the Fed stated that beginning in February 2014 it would reduce its

9   purchases of long-term Treasury securities to $35 billion per month. The Fed

10   continued to reduce these purchases throughout the year and in a press release issued

11   October 29, 2014 announced that it decided to close this asset purchase program in

12   October.[4]

13

14   Figure 1 below presents a graph that tracks the 30-Year Treasury Bond yield and the

15   Mergent average utility bond yield.

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[4]   (http://www.federalreserve.gov/newsevents/press/monetary/20141029a.htm)

1

FIGURE 1
HISTORICAL BOND YIELDS
AVERAGE PUBLIC UTILITY BOND VS 30-YEAR TREASURY BOND

2

3

4   The Fed's QE program and federal funds rate cuts were effective in lowering the

5   long-term cost of borrowing in the United States. The 30-Year Treasury Bond yield

6   declined from 5.11% in July 2007 to a low of 2.59% in July 2012. The average

7   utility bond yield also fell substantially, from 6.28% in July 2007 to 4.12% in July

8   2012.   At the end of June 2018, the 30-Year Treasury yield stood at 3.05% and the

9   average utility bond yield stood at 4.37%.

10

11   **Q10.   Has the Fed recently indicated any important changes to its monetary policy?**

12   A10.   Yes. In March 2016, the Fed began to raise its target range for the federal funds rate,

13   increasing it to 1/4% to 1/2% from 0% to 1/4%. Since that time, the Fed increased

1 the federal funds rate several more times, with the most recent increase announced

2 on June 13, 2018. The federal funds rate now stands in the range of 1.75% - 2.0%.

3 In its press release dated June 13, 2018 the Fed stated the following:

4   Information received since the Federal Open Market
5   Committee met in May indicates that the labor market has
6   continued to strengthen and that economic activity has been
7   rising at a solid rate. Job gains have been strong, on average,
8   in recent months, and the unemployment rate has declined.
9   Recent data suggest that growth of household spending has
10   picked up, while business fixed investment has continued to
11   grow strongly. On a 12-month basis, both overall inflation and
12   inflation for items other than food and energy have moved
13   close to 2 percent. Indicators of longer-term inflation
14   expectations are little changed, on balance.
15
16   Consistent with its statutory mandate, the Committee seeks to
17   foster maximum employment and price stability. The
18   Committee expects that further gradual increases in the target
19   range for the federal funds rate will be consistent with
20   sustained expansion of economic activity, strong labor market
21   conditions, and inflation near the Committee's symmetric 2
22   percent objective over the medium term. Risks to the
23   economic outlook appear roughly balanced.
24
25   In view of realized and expected labor market conditions and
26   inflation, the Committee decided to raise the target range for
27   the federal funds rate to 1-3/4 to 2 percent. The stance of
28   monetary policy remains accommodative, thereby supporting
29   strong labor market conditions and a sustained return to 2
30   percent inflation."
31

32 The Fed also provided certain economic projections that accompanied its June 13,

33 2018 press release showing the following:

34 • Projected federal funds rate of 2.4% for 2018, 2.9% for 2019, 3.4% for 2020,

35   and 2.9% for the longer run.

36 • Inflation running at 1.9% for 2018 and 2.1% for 2019 and 2020.

1   The Fed has signaled that it will likely continue increasing the federal funds rate this

2   year and in 2019.

3

4   **Q11.   Mr. Baudino, why is it important to understand the Fed's actions over the last**

5   **10 years?**

6   A11.   The Fed's monetary policy actions since 2008 were deliberately undertaken to lower

7   interest rates and support economic recovery. Even with several recent increases in

8   the federal funds rate, the U.S. economy is still in a low interest rate environment.

9   This environment has affected the common stocks of regulated utilities, which are

10   interest rate sensitive due to their high concentration of fixed assets. Thus, as

11   interest rates increase in the general economy, the prices of utility common stocks

12   fall and their dividend yields rise. Alternatively, as interest rates fall, the dividend

13   yields on utility common stocks tend to fall as their prices rise.

14

15   **Q12.   Are current interest rates indicative of investor expectations regarding the**

16   **future direction of interest rates?**

17   A12.   Yes. Securities markets are efficient and most likely reflect investors' expectations

18   about future interest rates. As Dr. Roger Morin pointed out in *New Regulatory*

19   *Finance:*

20   A considerable body of empirical evidence indicates that U.S. capital markets
21   are efficient with respect to a broad set of information, including historical and
22   publicly available information.[5]
23

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

1   Dr. Morin also noted the following:

2   There is extensive literature concerning the prediction of
3   interest rates. From this evidence, it appears that the no-change
4   model of interest rates frequently provides the most accurate
5   forecasts of future interest rates while at other times, the experts
6   are more accurate. Naïve extrapolations of current interest rates
7   frequently outperform published forecasts. The literature
8   suggests that on balance, the bond market is very efficient in
9   that it is difficult to consistently forecast interest rates with
10   greater accuracy than a no-change model. The latter model
11   provides similar, and in some cases, superior accuracy than
12   professional forecasts.[6]

13   Despite recent increases in the general level of short-term interest rates since the

14   second half of 2016, the U.S. economy continues to operate in a low interest rate

15   environment. It is important to realize that investor expectations of higher future

16   interest rates, if any, are already likely already embodied in current securities prices,

17   which include debt securities and stock prices.

18

19   Moreover, the current low interest rate environment still favors lower risk regulated

20   utilities. Although the Fed anticipates raising the federal funds rate later this year

21   and in 2019, I still firmly believe that it would not be advisable for utility regulators

22   to raise ROEs in anticipation of higher forecasted interest rates that may or may not

23   occur**.**

24

25

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[6]   *Ibid* at 172.

1 **Q13. How has the increase in the federal funds rate since 2016 affected utility stocks**

2 **in terms of bond yields and stock prices?**

3 A13. Interestingly, the yield on the average utility bond is lower now than it was in

4 January 2016. Likewise, the Dow Jones Utility Index is substantially higher than it

5 was in January 2016. Table 1 shows the federal funds rate, the yield on the 30-Year

6 Treasury bond, the yield on the average utility bond, and the Dow Jones Utility

7 Average from January 2016 through June 2018.

TABLE 1

Bond Yields and DJUA

	Federal Funds Rate %	30-Year Treasury %	Avg. Utility Bond %	DJUA
2016				
January	0.34	2.86	4.62	611.35
February	0.38	2.62	4.44	620.70
March	0.36	2.68	4.40	668.57
April	0.37	2.62	4.16	654.44
May	0.37	2.63	4.06	659.44
June	0.38	2.45	3.93	716.52
July	0.39	2.23	3.70	711.42
August	0.40	2.26	3.73	666.87
September	0.40	2.35	3.80	668.13
October	0.40	2.50	3.90	675.23
November	0.41	2.86	4.21	632.67
December	0.54	3.11	4.39	645.86
2017				
January	0.65	3.02	4.24	668.87
February	0.66	3.03	4.25	703.16
March	0.79	3.08	4.30	697.28
April	0.90	2.94	4.19	704.35
May	0.91	2.96	4.19	726.62
June	1.04	2.80	4.01	706.91
July	1.15	2.88	4.06	726.48
August	1.16	2.80	3.92	743.24
September	1.15	2.78	3.93	723.60
October	1.15	2.88	3.97	753.20
November	1.16	2.80	3.88	770.39
December	1.30	2.77	3.85	723.37
2018				
January	1.41	2.88	3.91	699.25
February	1.42	3.13	4.15	668.81
March	1.51	3.09	4.21	692.63
April	1.69	3.07	4.24	707.01
May	1.70	3.13	4.36	695.21
June	1.82	3.05	4.37	707.87

Source: Federal Reserve, Mergent Bond Record, Yahoo! Finance

1   Note that as the federal funds rate rose from January through December 2017, the

2   30-Year Treasury yield declined. The DJUA rose throughout 2017, declined sharply

3   in December and through February 2018, then began to rise again through June

4   2018. Although the federal funds rate steadily increased from 2016, the 30-Year

5   Treasury yield was not much different in June 2018 than it was in January 2016. The

6   average utility bond yield was lower in June 2018 (4.37%) than it was is January

7   2016 (4.62%), despite the steep increases in the federal funds rate.

8

9   **Q14.   How does the investment community regard the electric utility industry**

10   **currently?**

11   A14.   The Value Line Investment Survey stated the following in its June 15, 2018 report on

12   the Electric Utility (Central) industry:

13   "This has not been a good year, so far, for most stocks in the Electric
14   Utility Industry. Investors are concerned about the likelihood of rising
15   interest rates. Beyond this, a pullback was likely anyway simply
16   because 2017 was such a strong year for the group. Nevertheless,
17   *interest rates are still low, by historical standards, and so is the*
18   *average dividend yield of stocks in the Electric Utility Industry*. This
19   is just 3.4%. For the 3- to 5-year period, the average total return
20   potential is just 4%. Many stocks in this group are trading within their
21   2021-2023 Target Price Range." (italics added)

22

23   **Q15.   In 2018, the Edison Electric Institute ("EEI") published its *2017 Financial***

24   ***Review* of the investor-owned electric utility industry. Please summarize EEI's**

25   **conclusions with respect to credit ratings for the electric utility industry.**

26   A15.   EEI's report noted the following favorable credit rating summary for 2017:

27   The industry's average credit rating in 2017 was BBB+,
28   remaining for a fourth straight year above the BBB average that

1 has held since 2004. Ratings activity, at 53 changes, was below
2 the industry's average for the last decade of 68 changes per
3 year. Upgrades were 73.6% of total actions, the third-highest
4 annual figure in our dataset and just above 2016's 73.1%. In
5 fact, the last five years have produced the five highest upgrade
6 percentages in our historical data.
7

8 EEI's report shows that the overall credit standing of the electric industry is still

9 quite strong and has been improving over the last five years.

10

11 **Q16. Please briefly describe the effect of the recently enacted Tax Cut and Jobs Act**

12 **("TCJA") of 2017.**

13 A16. Generally speaking, the credit rating agencies noted that there would be some near-

14 term pressure on the credit metrics of some utilities, with some longer term positive

15 effects in the future. The main negative mentioned was reduced cash flow coverages

16 due to the reduction in the federal income tax rate for corporations, which is one of

17 the factors the rating agencies use to calculate these coverages. The lower the tax

18 rate, the lower the overall cash coverage of interest expenses and funds from

19 operations.

20

21 Fitch noted in a January 24, 2018 report noted that there could be some negative

22 ratings actions "for issuers with limited headroom to absorb the leverage creep"[7].

23 However, Fitch also expected that the longer-term impact of the TCJA would be

24 modestly positive for utilities, noting that the sector will retain the deductibility of

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[7] *Tax Reform Impact on the U.S. Utilities, Power & Gas Sector,* Fitch Ratings, provided in response to DPS1.Q27.

1   interest expense and the exemption from 100% capital expenditure expensing. In

2   addition, a reduction in income tax expense would lower the cost to customers that

3   would provide the utilities "headroom to increase rates for capital investments,"

4   according to Fitch.

5

6   Moody's announced that it lowered the credit outlook for 25 U.S. regulated utilities

7   primarily due to tax reform in a report dated January 19, 2018.[8] Moody's stated that

8   the companies in this group of 25 "already had limited cushion in their rating for

9   deterioration in financial performance." Green Mountain Power was not included in

10   this group of 25 utilities.

11

12 **Q17. What are the current credit ratings and bond ratings for GMP?**

13 A17. GMP currently carries a strong, investment grade A- corporate credit rating and an A

14   senior secured debt rating from Standard and Poor's ("S&P").   These are the same

15   ratings GMP carried in its last rate proceeding before the Commission. S&P's

16   January 4, 2018 report on GMP noted its excellent business risk profile and that its

17   financial risk was significant. Among the credit strengths noted in the report were:

18   • Regulated electric operations provide stable cash flows

19   • Small percentage of non-utility investments

---

[8] *Moody's changes outlooks on 25 US regulated utilities primarily impacted by tax reform,* Moody's
Investors Service, report provided in response to DPS1.Q27

1   • Operations limited to one state

2   • Small customer base not concentrated in a single customer class

3   • Effective management of regulatory risk in Vermont

4   • Ratings include uplift from ownership by Energir Inc.[9]

5   Since GMP's last rate case, the Company has maintained its strong credit ratings,

6   which include a currently authorized 9.1% return on equity.

7

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[9]   See GMP response to DPS1.Q25, Attachment GMP.DPS1.Q25.a4

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

2   **Q18.   Please describe the methods you employed in estimating a fair rate of return for**

3   **GMP.**

4   A18.   I employed a Discounted Cash Flow ("DCF") analysis using the proxy group of 16

5   regulated electric utilities used by Mr. Coyne in the ROE analysis he submitted on

6   behalf of the Company. My DCF analysis is the standard constant growth form of

7   the model that employs four different growth rate forecasts from the Value Line

8   Investment Survey, Yahoo! Finance, and Zacks. I also employed Capital Asset

9   Pricing Model ("CAPM") analyses using both historical and forward-looking data.

10   Although I did not rely on the CAPM for my recommended ROE for GMP, the

11   results from the CAPM tend to support the reasonableness of my ROE

12   recommendation for GMP.

13

14   **Q19.   What are the main guidelines to which you adhere in estimating the cost of**

15   **equity for a firm?**

16   A19.   The estimated cost of equity should be comparable to the returns of other firms with

17   similar risk structures and should be sufficient for the firm to attract capital. These

18   are the basic standards set out by the United States Supreme Court in *Federal Power*

19   *Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) and *Bluefield W.W. &*

20   *Improv. Co. v. Public Service Comm'n*, 262 U.S. 679 (1922).

21

22   From an economist's perspective, the notion of "opportunity cost" plays a vital role

23   in estimating the return on equity. One measures the opportunity cost of an

1   investment equal to what one would have obtained in the next best alternative. For

2   example, let us suppose that an investor decides to purchase the stock of a publicly

3   traded electric utility. That investor made the decision based on the expectation of

4   dividend payments and perhaps some appreciation in the stock's value over time;

5   however, that investor's opportunity cost is measured by what she or he could have

6   invested in as the next best alternative. That alternative could have been another

7   utility stock, a utility bond, a mutual fund, a money market fund, or any other

8   number of investment vehicles.

9

10   The key determinant in deciding whether to invest, however, is based on

11   comparative levels of risk. Our hypothetical investor would not invest in a particular

12   electric company stock if it offered a return lower than other investments of similar

13   risk. The opportunity cost simply would not justify such an investment. Thus, the

14   task for the rate of return analyst is to estimate a return that is equal to the return

15   being offered by other risk-comparable firms.

16

17   **Q20.   What are the major types of risk faced by utility companies?**

18   A20.   In general, risk associated with the holding of common stock can be separated into

19   three major categories: business risk, financial risk, and liquidity risk. Business risk

20   refers to risks inherent in the operation of the business. Volatility of the firm's sales,

21   long-term demand for its product(s), the amount of operating leverage, and quality of

22   management are all factors that affect business risk. The quality of regulation at the

1   state and federal levels also plays an important role in business risk for regulated

2   utility companies.

3

4   Financial risk refers to the impact on a firm's future cash flows from the use of debt

5   in the capital structure. Interest payments to bondholders represent a prior call on the

6   firm's cash flows and must be met before income is available to the common

7   shareholders. Additional debt means additional variability in the firm's earnings,

8   leading to additional risk.

9

10 Liquidity risk refers to the ability of an investor to quickly sell an investment without

11 a substantial price concession. The easier it is for an investor to sell an investment

12 for cash, the lower the liquidity risk will be. Stock markets, such as the New York

13 and American Stock Exchanges, help ease liquidity risk substantially. Investors who

14 own stocks that are traded in these markets know on a daily basis what the market

15 prices of their investments are and that they can sell these investments fairly quickly.

16 Many electric utility stocks are traded on the New York Stock Exchange and are

17 considered liquid investments.

18

19 **Q21. Are there any sources available to investors that quantify the total risk of a**

20 **company?**

21 A21. Bond and credit ratings are tools that investors use to assess the risk comparability of

22 firms. Bond rating agencies such as Moody's and Standard and Poor's perform

1   detailed analyses of factors that contribute to the risk of an investment. The result of

2   their analyses is a bond and/or credit rating that reflect these risks.

3

4   **Discounted Cash Flow ("DCF") Model**

5   **Q22.   Please describe the basic DCF approach.**

6   A22.   The basic DCF approach is rooted in valuation theory. It is based on the premise that

7   the value of a financial asset is determined by its ability to generate future net cash

8   flows. In the case of a common stock, those future cash flows generally take the

9   form of dividends and appreciation in stock price. The value of the stock to

10   investors is the discounted present value of future cash flows. The general equation

11   then is:

12
$$V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \cdots \frac{R}{(1+r)^n}$$

13   *Where:*   *V = asset value*
14   *R = yearly cash flows*
15   *r = discount rate*

16   This is no different from determining the value of any asset from an economic point

17   of view; however, the commonly employed DCF model makes certain simplifying

18   assumptions. One is that the stream of income from the equity share is assumed to

19   be perpetual; that is, there is no salvage or residual value at the end of some maturity

20   date (as is the case with a bond). Another important assumption is that financial

21   markets are reasonably efficient; that is, they correctly evaluate the cash flows

22   relative to the appropriate discount rate, thus rendering the stock price efficient

23   relative to other alternatives. Finally, the model I typically employ also assumes a

1   constant growth rate in dividends. The fundamental relationship employed in the

2   DCF method is described by the formula:

3
$$k = \frac{D_1}{P_0} + g$$

4   *Where:* D_1 = *the next period dividend*
5   P_0 = *current stock price*
6   *g = expected growth rate*
7   *k = investor-required return*

8   Under the formula, it is apparent that "k" must reflect the investors' expected return.

9   Use of the DCF method to determine an investor-required return is complicated by

10   the need to express investors' expectations relative to dividends, earnings, and book

11   value over an infinite time horizon. Financial theory suggests that stockholders

12   purchase common stock on the assumption that there will be some change in the rate

13   of dividend payments over time. We assume that the rate of growth in dividends is

14   constant over the assumed time horizon, but the model could easily handle varying

15   growth rates if we knew what they were. Finally, the relevant time frame is

16   prospective rather than retrospective.

17

18 **Q23.   What was your first step in conducting your DCF analysis for GMP?**

19 A23.   My first step was to choose a proxy group of companies with a risk profile that is

20   reasonably similar to GMP. In this case as in the last GMP rate case, I chose to use

21   the same group of companies used by Company witness Coyne. Mr. Coyne

22   described his selection criteria on pages 32 through 33 of his Direct Testimony. For

23   purposes of this case, it is reasonable to proceed with the proxy group of 16

24   companies shown by Mr. Coyne in Figure 8 of his Prefiled Testimony.

1   **Q24.   How do the S&P credit ratings of Mr. Coyne's proxy group compare to GMP's**

2   **credit rating?**

3   A24.   Table 2 below shows the current S&P credit ratings of the companies in the proxy

4   group and GMP's current rating.

TABLE 2 S&P Credit Ratings Proxy Group and GMP	
ALLETE, Inc.	BBB+
Alliant Energy Corporation	A-
Ameren Corp.	BBB+
American Electric Power Co.	A-
Duke Energy	A-
El Paso Electric Co.	BBB
Hawaiian Electric	BBB-
IDACORP, Inc.	BBB
NextEra Energy, Inc.	A-
OGE Energy Corp.	BBB+
Pinnacle West Capital Corp.	A-
PNM Resources, Inc.	BBB+
Portland General Electric Company	BBB
PPL Corporation	A-
Southern Company	A-
Xcel Energy Inc.	A-
GMP	A-
Credit ratings retrieved July 2, 2018	

5

6

7   The overall group credit rating is slightly lower than GMP's credit rating of A-. This

8   is because 8 of the 16 companies have BBB/BBB+ credit ratings. This suggests that,

9   other things equal, GMP has lower risk and a slightly lower expected ROE than the

10   proxy group average.

1   **Q25. What was your first step in determining the DCF return on equity for the proxy**

2   **group?**

3   A25. 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   January through June 2018. I obtained historical prices and dividends from Yahoo!

7   Finance. The annualized dividend divided by the average monthly price represents

8   the average dividend yield for each month in the period.

9

10   The resulting average dividend yield for the comparison group is 3.60%. These

11   calculations are shown in PSD-RAB-2.

12

13   **Q26. Having established the average dividend yield, how did you determine the**

14   **investors' expected growth rate for the electric comparison group?**

15   A26. The investors' expected growth rate, in theory, correctly forecasts the constant rate

16   of growth in dividends. The dividend growth rate is a function of earnings growth

17   and the payout ratio, neither of which is known precisely for the future. We refer to

18   a perpetual growth rate since the DCF model has no arbitrary cut-off point. We must

19   estimate the investors' expected growth rate because there is no way to know with

20   absolute certainty what investors expect the growth rate to be in the short term, much

21   less in perpetuity.

22

1   For my analysis in this proceeding, I used three major sources of analysts' forecasts

2   for growth. These sources are The Value Line Investment Survey, Zacks, and

3   Yahoo! Finance. These are the sources I typically use for estimating growth for my

4   DCF calculations.

5

6   **Q27.**   **Please briefly describe Value Line, Zacks, and Yahoo! Finance.**

7   A27.   The Value Line Investment Survey is a widely used and respected source of investor

8   information that covers approximately 1,700 companies in its Standard Edition and

9   several thousand in its Plus Edition. It is updated quarterly and probably represents

10   the most comprehensive of all investment information services. It provides both

11   historical and forecasted information on a number of important data elements. Value

12   Line neither participates in financial markets as a broker nor works for the utility

13   industry in any capacity of which I am aware.

14

15   Zacks gathers opinions from a variety of analysts on earnings growth forecasts for

16   numerous firms including regulated electric utilities. The estimates of the analysts

17   responding are combined to produce consensus average estimates of earnings

18   growth. I obtained Zacks' earnings growth forecasts from its web site.

19

20   Like Zacks, Yahoo! Finance also compiles reports consensus analysts' forecasts of

21   earnings growth.

22

23

1   **Q28.   Why did you rely on analysts' forecasts in your analysis?**

2   A28.   Return on equity analysis is a forward-looking process. Five-year or ten-year

3   historical growth rates may not accurately represent investor expectations for

4   dividend growth. Analysts' forecasts for earnings and dividend growth provide

5   better proxies for the expected growth component in the DCF model than historical

6   growth rates. Analysts' forecasts are also widely available to investors and one can

7   reasonably assume that they influence investor expectations.

8

9   **Q29.   Please explain how you used analysts' dividend and earnings growth forecasts in**

10   **your constant growth DCF analysis.**

11   A29.   Page 1, Columns (1) through (4) of PSD-RAB-3 shows the forecasted dividend and

12   earnings growth rates from Value Line and the earnings growth forecasts from Zacks

13   and Yahoo! Finance. It is important to include dividend growth forecasts in the DCF

14   model since the model calls for forecasted cash flows received by the investor.

15   Value Line is the only sources of which I am aware that forecasts dividend growth

16   and my approach gives this forecast equal weight with the three earnings growth

17   forecasts.

18

19   **Q30.   How did you proceed to determine the DCF return of equity for the comparison**

20   **group?**

21   A30.   To estimate the expected dividend yield (D_1), the current dividend yield must be

22   moved forward in time to account for dividend increases over the next twelve

1   months. I estimated the expected dividend yield by multiplying the current dividend

2   yield by one plus one-half the expected growth rate.

3

4   Page 2 of DPS-RAB-3 presents my standard method of calculating dividend yields,

5   growth rates, and return on equity for the comparison group of companies. The DCF

6   Return on Equity Calculation section shows the application of each of four growth

7   rates I used in my analysis to the current group dividend yield of 3.62% to calculate

8   the expected dividend yield. I then added the expected growth rates to the expected

9   dividend yield. In evaluating investor expected growth rates, I use both the average

10   and the median values for the group under consideration. Method 1 uses the group

11   average expected growth rate and Method 2 uses the group median expected growth

12   rate. The calculations of the resulting DCF returns on equity for both methods are

13   presented on page 2 of DPS-RAB-3.

14

15 **Q31.   What are the results of your constant growth DCF model?**

16 A31.   For the average growth rates in Method 1, the results range from 8.81% to 9.33%,

17   with the average of these results being 9.01%. Using the median growth rates in

18   Method 2, the results range from 8.69% to 9.20%, with the average of these results

19   being 8.95%.

20

21

22

1   **Capital Asset Pricing Model**

2   **Q32.   Briefly summarize the Capital Asset Pricing Model ("CAPM") approach.**

3   A32.   The theory underlying the CAPM approach is that investors, through diversified

4   portfolios, may combine assets to minimize the total risk of the portfolio.

5   Diversification allows investors to diversify away all risks specific to a particular

6   company and be left only with market risk that affects all companies. Thus, the

7   CAPM theory identifies two types of risks for a security: company-specific risk and

8   market risk. Company-specific risk includes such events as strikes, management

9   errors, marketing failures, lawsuits, and other events that are unique to a particular

10   firm. Market risk includes inflation, business cycles, war, variations in interest rates,

11   and changes in consumer confidence. Market risk tends to affect all stocks and

12   cannot be diversified away. The idea behind the CAPM is that diversified investors

13   are rewarded with returns based on market risk.

14

15   Within the CAPM framework, the expected return on a security is equal to the risk-

16   free rate of return plus a risk premium that is proportional to the security's market, or

17   non-diversifiable, risk. Beta is the factor that reflects the inherent market risk of a

18   security and measures the volatility of a security relative to the overall market for

19   securities. For example, a stock with a beta of 1.0 indicates that if the market rises

20   by 15%, that stock will also rise by 15%. This stock moves in tandem with

21   movements in the overall market. Stocks with a beta of 0.5 will only rise or fall 50%

22   as much as the overall market. So with an increase in the market of 15%, this stock

23   will only rise 7.5%. Stocks with betas greater than 1.0 will rise and fall more than

1   the overall market. Thus, beta is the measure of the relative risk of individual

2   securities vis-à-vis the market.

3

4   Based on the foregoing discussion, the equation for determining the return for a

5   security in the CAPM framework is:

6

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

8   *Where:*   *K*   *= Required Return on equity*
9   *Rf*   *= Risk-free rate*
10   *MRP = Market risk premium*
11   *β*   *= Beta*

12

13   This equation tells us about the risk/return relationship posited by the CAPM.

14   Investors are risk averse and will only accept higher risk if they expect to receive

15   higher returns. These returns can be determined in relation to a stock's beta and the

16   market risk premium. The general level of risk aversion in the economy determines

17   the market risk premium. If the risk-free rate of return is 3.0% and the required

18   return on the total market is 15%, then the risk premium is 12%. Any stock's

19   required return can be determined by multiplying its beta by the market risk

20   premium. Stocks with betas greater than 1.0 are considered riskier than the overall

21   market and will have higher required returns. Conversely, stocks with betas less than

22   1.0 will have required returns lower than the market.

23

1   **Q33.   In general, are there concerns regarding the use of the CAPM in estimating the**

2   **return on equity?**

3   A33.   Yes. There is some controversy surrounding the use of the CAPM.[10] There is

4   evidence that beta is not the primary factor in determining the risk of a security. For

5   example, Value Line's "Safety Rank" is a measure of total risk, not its calculated

6   beta coefficient. Beta coefficients usually describe only a small amount of total

7   investment risk.

8

9   There is also substantial judgment involved in estimating the required market return.

10   In theory, the CAPM requires an estimate of the return on the total market for

11   investments, including stocks, bonds, real estate, etc. It is nearly impossible for the

12   analyst to estimate such a broad-based return. Often in utility cases, a market return

13   is estimated using the S&P 500 or the return on Value Line's stock market

14   composite. However, these are limited sources of information with respect to

15   estimating the investor's required return for all investments. In practice, the total

16   market return estimate faces significant limitations to its estimation and, ultimately,

17   its usefulness in quantifying the investor required ROE.

18

19   In the final analysis, a considerable amount of judgment must be employed in

20   determining the risk-free rate and market return portions of the CAPM equation.

21   The analyst's application of judgment can significantly influence the results obtained

---

[10]   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   from the CAPM. My experience with the CAPM indicates that it is prudent to use a

2   wide variety of data in estimating investor-required returns. Of course, the range of

3   results may also be wide, indicating the difficulty in obtaining a reliable estimate

4   from the CAPM.

5

6 **Q34. How did you estimate the market return portion of the CAPM?**

7 A34. The first source I used was the Value Line Investment Analyzer Plus Edition, for

8   July 25, 2018. This edition covers several thousand stocks. The Value Line

9   Investment Analyzer provides a summary statistical report detailing, among other

10   things, forecasted growth rates for earnings and book value for the companies Value

11   Line follows as well as the projected total annual return over the next 3 to 5 years. I

12   present these growth rates and Value Line's projected annual return on page 2 of

13   PSD-RAB-4. I included median earnings and book value growth rates. The

14   estimated market returns using Value Line's market data range from 10.00% to

15   10.83%. The average of these market returns is 10.41%.

16

17 **Q35. Why did you use median growth rate estimates rather than the average growth**

18   **rate estimates for the Value Line companies?**

19 A35. Using median growth rates is likely a more accurate approach to estimating the

20   central tendency of Value Line's large data set compared to the average growth rates.

21   Average earnings and book value growth rates may be unduly influenced by very

22   high or very low 3 - 5-year growth rates that are unsustainable in the long run. For

23   example, Value Line's Statistical Summary shows both the highest and lowest value

1   for earnings and book value growth forecasts. For earnings growth, Value Line

2   showed the highest earnings growth forecast to be 94.5% and the lowest growth rate

3   to be -31%. With respect to book value, the highest growth rate was 85.5% and the

4   lowest was a -26%. None of these growth rate projections is compatible with long-

5   run growth prospects for the market as a whole. The median growth rate is not

6   influenced by such extremes because it represents the middle value of a very wide

7   range of earnings growth rates.

8

9   **Q36.**   **Please continue with your market return analysis.**

10   A36.   I also considered a supplemental check to the Value Line projected market return

11   estimates. Duff and Phelps compiled a study of historical returns on the stock

12   market in its 2018 SBBI Yearbook. Some analysts employ this historical data to

13   estimate the market risk premium of stocks over the risk-free rate. The assumption is

14   that a risk premium calculated over a long period of time is reflective of investor

15   expectations going forward. PSD-RAB-5 presents the calculation of the market

16   returns using the historical data.

17

18   **Q37.**   **Please explain how this historical risk premium is calculated.**

19   A37.   DPS-RAB-5 shows both the geometric and arithmetic average of yearly historical

20   stock market returns over the historical period from 1926 - 2017. The average

21   annual income return for 20-year Treasury bond is subtracted from these historical

22   stocks returns to obtain the historical market risk premium of stock returns over

1   long-term Treasury bond income returns. The historical market risk premium range

2   is 5.2% - 7.1%.

3

4   **Q38.**   **Did you add an additional measure of the historical risk premium in this case?**

5   A38.   Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and Dr.

6   Peng Chen indicating that the historical risk premium of stock returns over long-term

7   government bond returns has been significantly influenced upward by substantial

8   growth in the price/earnings ("P/E") ratio for stocks from 1980 through 2001.[11] Duff

9   and Phelps noted that this growth in the P/E ratio for stocks was subtracted out of the

10   historical risk premium because "it is not believed that P/E will continue to increase

11   in the future." The adjusted historical arithmetic market risk premium is 6.04%,

12   which I have also included in DPS-RAB-5. This risk premium estimate falls near the

13   middle of the market risk premium range.

14

15   **Q39.**   **How did you determine the risk free rate?**

16   A39.   I used the average yields on the 30-year Treasury bond and five-year Treasury note

17   over the six-month period from January through June 2018. This was the latest

18   available data from the Federal Reserve's web site during the preparation of my

19   Direct Testimony. The 30-year Treasury bond is often used by rate of return analysts

20   as the risk-free rate, but it contains a significant amount of interest rate risk. The

21   five-year Treasury note carries less interest rate risk than the 30-year bond and is

---

[11]   *2018 SBBI Yearbook,* Duff and Phelps, pp. 10-28 through 10-30.

1   more stable than short-term Treasury bills. Therefore, I have employed both

2   securities as proxies for the risk-free rate of return. This approach provides a

3   reasonable range over which the CAPM return on equity may be estimated.

4

5   **Q40. How did you determine the value for beta?**

6   A40.   I obtained the betas for the companies in the electric company comparison group

7   from most recent Value Line reports. The average of the Value Line betas for the

8   comparison group is 0.68.

9

10   **Q41. Please summarize the CAPM results.**

11   A41.   For my forward-looking CAPM return on equity estimates, the CAPM results are

12   7.96% - 8.09%. Using historical risk premiums, the CAPM results are 6.62% -

13   7.92%.

14

15   **Conclusions and Recommendations**

16   **Q42. Please summarize the cost of equity results for your DCF and CAPM analyses.**

17   A42.   Table 3 below summarizes my return on equity results using the DCF and CAPM for

18   my comparison group of companies.

19

20

21

22

23

TABLE 3
SUMMARY OF ROE ESTIMATES

Baudino DCF Methodology:	
Average Growth Rates	
- High	9.33%
- Low	8.81%
- Average	9.01%
Median Growth Rates:	
- High	9.20%
- Low	8.69%
- Average	8.95%
CAPM:	
- 5-Year Treasury Bond	7.96%
- 30-Year Treasury Bond	8.09%
- Historical Returns	6.62% - 7.92%

Q43. What is your recommended return on equity for GMP?

A43. My independent analyses of the return on equity for GMP indicate a reasonable

investor required return on equity ("ROE") in the range of 8.70% - 9.35% based on

the DCF analyses I performed. My recommended ROE for GMP in this proceeding

would be 9.10%, which is slightly above the midpoint of this range. In my opinion,

a 9.1% ROE is reasonable for a low risk regulated electric company like GMP and

properly considers the probability of higher interest rates later this year.

As I mentioned earlier in my Direct Testimony, the DPS and GMP entered a

Memorandum of Understanding ("MOU") dated November 9, 2017 in Case No. 17-

3112-INV. Paragraph 21 of the MOU contains an agreement by the parties that

GMP's allowed ROE for 2018 shall be 9.1% and for 2019 shall be 9.3%. The 9.3%

2019 ROE from the MOU falls within the range of my DCF analyses in this

1   proceeding and is quite close to my recommended ROE of 9.1%. It is my

2   understanding that the DPS wishes to adhere to the ROE agreement in the MOU.

3   Therefore, I recommend that the Commission adopt the 9.3% from the MOU.

4

5   **Q44. Did you review GMP's requested cost of short-term debt?**

6   A44.   Yes. The Company's requested a cost of short-term debt is 1.83%. My review of the

7   Company's recent cost of short-term debt indicates that 1.83% is reasonable and I

8   recommend that the Commission adopt 1.83% for the cost of short-term debt.

9

10   **Q45. Did you review GMP's requested cost of long-term debt?**

11   A45.   Yes. GMP included several forecasted bond issuances in its requested capital

12   structure and cost of debt. These four forecasted issuances were included as follows:

13   • $25 million in September 2018 at a 4.50% yield

14   • $20 million in December 2018 at a 5.05% yield

15   • $30 million in May 2019 at a 5.25% yield

16   • $60 million in June 2019 at a 5.255 yield

17

18   **Q46. Do you agree with the cost of the projected issues of long-term debt?**

19   A46.   No, I do not agree with all of them. First, for now I recommend that the Commission

20   accept the 4.50% yield for the September 2018 issuance. This yield is close to the

21   current yield on average utility bonds that I presented in Table 1. However, I also

22   recommend that this yield be updated when GMP closes the transaction and has the

23   actual cost available from that September 2018 issuance.

1   Second, I recommend that the Commission reduce the cost of the three other projected

2   issuances to 4.50%. My Table 1 demonstrated that the average rate for public utility

3   debt in June 2018 was 4.37%. The 4.50% cost of new debt I recommend is reasonably

4   close to the cost that GMP should achieve this year and is within the range of long-

5   term utility debt cost so far in 2018.

6

7   I utilized the spreadsheet the Company provided with its filing entitled "Rate Year

8   2019 Capital Structure Preliminary", which presents the cost of capital for the test year

9   and rate year, to recalculate the cost of the projected three issuances of long-term debt

10   using 4.50%. The impact on the overall cost of long-term debt for GMP was relatively

11   small. My recommend cost of debt for the test year is 5.03% and for the 9-month rate

12   year is 3.79%.

13

14   **Q47.   What is your recommended weighted cost of capital?**

15   A47.   My recommended weighted cost of capital is 6.97% using the cost of debt and equity

16   for the test year. Table 4 below presents the calculation. I accepted GMP's requested

17   capital structure and, specifically, its requested equity percentage of 49.85%.   Please

18   note that the cost of debt of 5.03% is for a full 12-month rate year, which differs from

19   the Company's use of a 9-month rate year in its filing. For the 9-month rate year the

20   cost of debt would be 3.79%.

21

22

23

TABLE 4

**Weighted Cost of Capital
Green Mountain Power**

Source	Percentage	Cost	Weighted Cost
Bonds	44.35%	5.03%	2.23%
Bank Loans	5.80%	1.83%	0.11%
Equity	49.85%	9.30%	4.64%
Totals	100.00%		6.97%

1

2

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

2   **Q48.   Have you reviewed the Direct Testimony of Mr. Coyne?**

3   A48.   Yes. Although Mr. Coyne and I disagree on our recommended cost of equity based

4   on our respective analyses, we do agree that the cost of equity for purposes of this

5   case should be 9.30% per the MOU between the Department and GMP. However, I

6   will nonetheless respond to Mr. Coyne's ROE analyses and point out areas with

7   which I have disagreements.

8

9   **Q49.   Please summarize Mr. Coyne's testimony and approach to return on equity.**

10   A49.   As he did in GMP's last rate case, Mr. Coyne employed four methods to estimate the

11   investor required rate of return for GMP: (1) the constant growth DCF model, (2) the

12   multi-stage DCF model, (3) the CAPM, and (4) the Risk Premium model.

13

14   For his constant growth DCF approach, Mr. Coyne used Value Line, Thomson First

15   Call, and Zacks for the investor expected growth rate. Mr. Coyne's mean growth rate

16   ROE results for his proxy group of companies ranged from 8.62% to 8.91%. GMP

17   Witness Coyne Direct at 46, Figure 10.

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

22   in years 6 – 10 using linear interpolations of near-term and long-term growth rates.

1   The mean results using projected and historical GDP growth ranged from 8.05% to

2   9.36%. Witness Coyne Direct at 49, Figure 11.

3   With respect to the CAPM, Mr. Coyne's results ranged from 10.33% to 11.60%.

4   Witness Coyne Direct at 53, lines 12 – 16.

5

6   Mr. Coyne's formulation of the bond yield plus risk premium approach resulted in a

7   ROE estimate range of 9.87% - 10.34%. Witness Coyne Direct at 56, Figure 13.

8

9   Mr. Coyne also discussed making an adjustment for flotation costs to his

10   recommended ROE, but did not make an explicit adjustment. Witness Coyne Direct

11   at 67.

12

13   Based on the results of his analyses and judgment, Mr. Coyne recommended a ROE

14   range for GMP of 9.9% to 10.4%, with a recommendation of 10.0%.

15

16   **Constant Growth DCF Analyses**

17 **Q50. How do the results of your constant growth DCF analyses compare with those**

18   **of Mr. Coyne's?**

19 A50. Our results are rather consistent in this case, although Mr. Coyne's results are

20   somewhat lower. We used the same proxy group and sources for expected growth

21   rates.   I also included Value Line's forecasted dividend growth, while Mr. Coyne

22   did not.

23

1   **Q51.   On pages 40 through 43 of his Prefiled Testimony, Mr. Coyne discussed the**

2   **higher stock valuations and lower dividend yield for utility companies,**

3   **concluding on page 43 that "the DCF models "are understating the cost of**

4   **equity under current market conditions due to the low-interest-rate**

5   **environment that has reduced dividend yields and raised valuations on utility**

6   **shares to unsustainable levels." Please respond to Mr. Coyne's conclusion**

7   **regarding the DCF model.**

8   A51.   I disagree with Mr. Coyne's conclusion regarding the accuracy of the DCF model in

9   today's current economic environment. The fact that dividend yields are relatively

10   low currently does not preclude the use of an accurately formulated DCF model to

11   estimate the current cost of equity for GMP in particular and for regulated utilities

12   generally. Here's why.

13

14   It is critically important to focus upon what investors are willing to pay right now for

15   utility stocks when estimating and setting the allowed ROE for GMP. Indeed,

16   current stock prices tell us how investors value utility stocks compared to all other

17   available investment opportunities. This is the principle of "opportunity cost" that I

18   described earlier in my testimony. The bidding upward of utility stock prices, with

19   the concomitant reduction in dividend yields, is likely reflective of a lower required

20   return generally in financial markets due to the low interest rate environment that

21   both Mr. Coyne and I have described to the Commission. It also likely reflects

22   investors' preference for the stability and lower risk that utility stocks provide

1   relative to the general market. This is supported by the average beta of the proxy

2   group, 0.68, which is well below the market beta of 1.0.

3

4   Finally, with respect to Mr. Coyne's analysis of utility company P/E ratios, Mr.

5   Coyne provided no guidance or opinion on what the utility industry P/E should be to

6   the extent that it is allegedly inflated currently by low interest rates. Indeed, if

7   investors in the common stock of utility companies expected stock prices to

8   "correct" at some much lower level, then they would have already adjusted stock

9   prices to that level in order to avoid capital losses.

10

11   **Q52.**   **On page 42 of his Prefiled Testimony, Mr. Coyne cited an Order from the**

12   **Federal Energy Regulatory Commission ("FERC") that described so-called**

13   **"anomalous conditions" in current capital markets. Please respond to Mr.**

14   **Coyne's testimony on this point.**

15   A52.   I strongly disagree with the FERC's finding with respect to so-called "anomalous"

16   market conditions and the alleged impact on the DCF model results. The FERC

17   Order that Mr. Coyne cited in his footnote No. 37 was dated June 30, 2016.

18   Referring to my Table 1, the January 2016 30-Year Treasury yield was 2.86%, only

19   slightly lower than the yield in June 2018 (3.05%). Despite several recent increases

20   to the federal funds rate, long-term interest rates today are not much different from

21   the levels seen in January 2016. With two additional years since the FERC Order

22   cited by Mr. Coyne, financial markets to date have experience several years of

1   relatively low interest rates. This situation can hardly be considered a short-term

2   "aberration" or "anomalous".

3

4   Finally, simply because the FERC made a decision regarding the use of the DCF

5   model does not mean that the Commission should follow suit and agree with the

6   FERC in this case.

7

8   **Q53.   Is there support for the position that today's currently low interest rates is part**

9   **of a long-term trend?**

10   A53.   Yes. In a weekly blog at the Brookings Institution, former Federal Reserve

11   Chairman Ben Bernanke wrote the following:[12]

12   Interest rates around the world, both short-term and long-term,
13   are exceptionally low these days. The U.S. government can
14   borrow for ten years at a rate of about 1.9 percent, and for thirty
15   years at about 2.5 percent. Rates in other industrial countries
16   are even lower: For example, the yield on ten-year government
17   bonds is now around 0.2 percent in Germany, 0.3 percent in
18   Japan, and 1.6 percent in the United Kingdom. In Switzerland,
19   the ten-year yield is currently slightly negative, meaning that
20   lenders must pay the Swiss government to hold their money!
21   The interest rates paid by businesses and households are
22   relatively higher, primarily because of credit risk, but are still
23   very low on an historical basis.
24
25   Low interest rates are not a short-term aberration, but part of a
26   long-term trend. As the figure below shows, ten-year
27   government bond yields in the United States were relatively
28   low in the 1960s, rose to a peak above 15 percent in 1981, and
29   have been declining ever since. That pattern is partly explained
30   by the rise and fall of inflation, also shown in the figure. All
31   else equal, investors demand higher yields when inflation is

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[12]   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   high to compensate them for the declining purchasing power of

2   the dollars with which they expect to be repaid. But yields on

3   inflation-protected bonds are also very low today; the real or

4   inflation-adjusted return on lending to the U.S. government for

5   five years is currently about *minus* 0.1 percent.

6

7 **Q54. Mr. Baudino, should the Commission rely on the DCF results for its decision on**

8   **the allowed ROE for GMP?**

9 A54. Yes, most definitely. The DCF model employs current stock prices, which are the

10   best indicators of investors' return requirements that we have. The DCF also

11   includes earnings and dividend growth forecasts that influence investors' decision-

12   making. The DCF model is the most reliable and accurate model for the

13   Commission to rely upon in this proceeding and I continue to recommend its use.

14

15 **Q55. Mr. Coyne also presented the low mean and high mean DCF results in Figure**

16   **10, page 46 of his Prefiled Testimony. Should the Commission rely on the low**

17   **and high mean results of his DCF analyses?**

18 A55. No. The high and low mean results have no real value for purposes of setting the

19   ROE for GMP in this case. They merely report on the range around the mean, or

20   average, results from Mr. Coyne's DCF analyses. Mr. Coyne made a similar

21   presentation for his multi-stage DCF results. Rather, it is the mean results that are

22   relevant for purposes of setting the ROE in this proceeding and it is this approach I

23   used as Method 1 in presenting my DCF recommendation to the Commission. The

24   median is another useful measure of central tendency for required ROEs and I used

25   the median as Method 2 in my analyses.

1   **Multi-stage DCF Model**

2   **Q56.**   **On page 49 of his Prefiled Direct Testimony, Mr. Coyne presented the results of**

3   **his multi-stage DCF model. What are your conclusions with respect to Mr.**

4   **Coyne's analyses?**

5   A56.   The range of Mr. Coyne's mean estimates is 8.05% - 9.36%. Mr. Coyne's multi-

6   stage DCF results are reasonably consistent with the constant growth DCF results.

7   This due mainly to his estimates of long-term GDP growth, which range from 4.21%

8   - 5.45%. These GDP growth rates are similar to the earnings growth rates he used in

9   his constant growth DCF analyses.

10

11   Although I do not necessarily agree with all the assumptions in Mr. Coyne's

12   analysis, his multi-stage DCF model show that relying on GDP growth for long-term

13   earnings growth does not produce significantly different results from the constant

14   growth DCF model.

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

20   4.10%. Mr. Coyne did not consider any shorter maturity bonds, such as the 5-year

21   Treasury note.

22

1   For the market risk premium, Mr. Coyne conducted a constant growth DCF analysis

2   on each of the S&P 500 companies and then calculated the expected total market

3   return weighted by the market capitalization for each company. He subtracted the

4   total market return of 14.72% from the projected risk-free rate of 4.10% to derive his

5   recommended market risk premium of 10.62%.

6

7   Mr. Coyne used two different estimates for beta from Bloomberg (0.587) and Value

8   Line (0.706).

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

12   market data and expectations of investors, including expectations of changing future

13   interest rates. The forecasted bond yield used by Mr. Coyne is speculative at best

14   and may never come to pass. Current interest rates provide tangible and verifiable

15   market evidence of investor return requirements today, and these are the interest

16   rates and bond yields that should be used in both the CAPM and in the bond yield

17   plus risk premium analyses. To the extent that investors give forecasted interest

18   rates any weight at all, they are already incorporated in current securities prices.

19

20   Furthermore, Mr. Coyne's 4.10% forcasted 30-year Treasury Bond yield is grossly

21   excessive compared to current long-term bond yields. As of June 2018, the yield on

22   the 30-year Treasury Bond was 3.05%. Mr. Coyne's forecasted yield of 4.10% is

23   105 basis points greater than the current yield for 30-year Treasury bonds. Given

1   how far off the Blue Chip forecast is from current yields, I strongly recommend that

2   Mr. Coyne's CAPM results be rejected out of hand.

3

4   Finally, as a practical matter it is not appropriate to rely on forecasted interest rates

5   from Blue Chip Financial Forecasts in either the CAPM or the Risk Premium

6   models. Forecasts are often wrong and should not be used to set the ROE in

7   regulatory proceedings. Current interest rates already embody investors'

8   expectations of future increases in interest rates, if any.

9

10   **Q59.** **Should Mr. Coyne have considered shorter-term Treasury yields in his CAPM**

11   **analyses?**

12   A59. Yes. In theory, the risk-free rate should have no interest rate risk. 30-year Treasury

13   Bonds do face this risk, which is the risk that interest rates could rise in the future

14   and lead to a capital loss for the bondholder. Typically, the longer the duration of

15   the bond, the greater the interest rate risk. The 5-year Treasury note has much less

16   interest rate risk than 30-year Treasury Bonds and may be considered one reasonable

17   proxy for a risk-free security.

18

19   **Q60.** **Is the S&P 500 a good proxy for the market when estimating a CAPM return on**

20   **equity?**

21   A60. No. This is because the S&P 500 is limited to the stocks of the 500 largest

22   companies in the United States. The market return portion of the CAPM should

23   represent the most comprehensive estimate of the total return for all investment

1   alternatives, not just a small subset of publicly traded stocks. In practice, of course,

2   finding such an estimate is difficult and is one of the thornier problems in estimating

3   an accurate ROE when using the CAPM. If one limits the market return to stocks,

4   then there are more comprehensive measures of the stock market available, such as

5   the Value Line Investment Survey that I used in my CAPM analysis. Value Line's

6   projected earnings growth used a sample of 2,019 stocks and its book value growth

7   estimate used 1,562 stocks. Value Line's projected annual percentage return included

8   1,696 stocks. These are much broader samples than Mr. Coyne's limited sample of

9   the S&P 500.

10

11   **Q61.   Do the market returns you used in your CAPM suggest that Mr. Coyne's**

12   **estimated market returns are excessive?**

13   A61.   Yes, they certainly do. The market returns I estimated from Value Line ranged from

14   10.0% to 10.83%, far lower than Mr. Coyne's estimated return of 14.72% on the

15   S&P 500.

16

17   In my opinion, the forecasted market growth rate of 12.70% in Mr. Coyne's analysis

18   is greatly overstated. This is by no means a long-run sustainable growth rate. It is

19   more than twice as large as Mr. Coyne's own long-term GDP forecasts (4.21% -

20   5.45%). If forecasted GDP growth is used as the long-term expected growth rate for

21   the market, then both Mr. Coyne's and my own market return estimates would fall

22   significantly.

1   **Bond Yield Plus Risk Premium Analysis**

2   **Q62.   Please summarize Mr. Coyne's risk premium approach.**

3   A62.   Mr. Coyne developed a historical risk premium using Commission-allowed returns

4   for regulated electric utility companies and forecasted 30-year Treasury bond yields

5   from 1992 through February 28, 2018. He used regression analysis to estimate the

6   value of the inverse relationship between interest rates and risk premiums during that

7   period. Applying the regression coefficients to the average risk premium and using

8   both current and projected 30-year Treasury yields, Mr. Coyne's risk premium ROE

9   estimate ranges from 9.87% to 10.34%. Witness Coyne Prefiled Testimony at 56.

10

11   **Q63.   Please respond to Mr. Coyne's risk premium analysis.**

12   A63.   First, the bond yield plus risk premium approach is imprecise and can only provide

13   very general guidance on the current authorized ROE for a regulated electric utility.

14   Risk premiums can change substantially over time. As such, this approach is a

15   "blunt instrument" for estimating the ROE in regulated proceedings. In my view, a

16   properly formulated DCF model using current stock prices and growth forecasts is

17   far more reliable and accurate than the bond yield plus risk premium approach,

18   which relies on a 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 10.06 - 10.34%, the highest of the three results shown Mr. Coyne's Figure

1   8. Changing Mr. Coyne's analysis only to use the current 30-Year Treasury yield,

2   without addressing other potential shortcomings of that analysis, would result in a

3   ROE of 9.87%.

4

5   **Business Risks and Flotation Costs**

6   **Q64.   Beginning on page 57 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   A64.   I agree with Mr. Coyne that economic literature recognizes that smaller companies

10   may be considered riskier by investors and command higher required returns as a

11   result. However, the fact that GMP is a regulated utility 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

14   recovering its costs and earning its required return on equity. I would not

15   recommend that the Commission consider GMP's size relative to the companies in

16   the proxy group when deciding its allowed return on equity. Mr. Coyne also

17   declined to make a size adjustment in his recommended ROE.

18

19   **Q65.   What do the S&P credit ratings tell us with respect to GMP's risk relative to the**

20   **proxy group?**

21   A65.   My Table 2 shows that GMP's credit rating of A- is slightly higher than the proxy

22   group. This suggests that GMP has somewhat lower risk relative to the proxy group

23   average. It should be noted that any concerns with respect to size and regulatory risk

1   are already considered in the credit rating of GMP and the companies in the proxy

2   group.

3

4   **Q66.   On page 67 of his Prefiled Testimony, Mr. Coyne discussed adding an**

5   **adjustment for flotation costs, though he made no explicit adjustment to his**

6   **recommendation. Should the Commission add a flotation cost adjustment to**

7   **the cost of equity for GMP?**

8   A66.   No. In my opinion, it is likely that flotation costs are already accounted for in

9   current stock prices and that adding an adjustment for flotation costs amounts to

10   double counting. A DCF model using current stock prices should already account

11   for investor expectations regarding the collection of flotation costs. Multiplying the

12   dividend yield by a 4% flotation cost adjustment, for example, essentially assumes

13   that the current stock price is wrong and that it must be adjusted downward to

14   increase the dividend yield and the resulting cost of equity. I do not believe that this

15   is an appropriate assumption. Current stock prices most likely already account for

16   flotation costs, to the extent that such costs are even accounted for by investors.

17

18

19

20

21

22

1   **Q67.** **On page 70 of his Prefiled Testimony, Mr. Coyne stated that GMP's requested**

2   **ROE of 9.3% is "well below the low end of the reasonable range supported by**

3   **my analysis, for the rate period January 1, 2019 to September 30, 2019." Please**

4   **respond to Mr. Coyne's position with respect to the 9.3% ROE agreement in the**

5   **MOU.**

6   A67.   The 9.3% ROE is definitely not below a reasonable ROE that an investor in today's

7   stock market would require for a low-risk regulated electric utility like GMP. As I

8   noted earlier, the 9.3% is near the top end of my DCF range and is at the top of the

9   multi-stage DCF results calculated by Mr. Coyne. The lower bound of Mr. Coyne's

10   recommended ROE range, 9.9%, obviously excludes the entirety of his DCF results.

11   I disagree with Mr. Coyne's complete exclusion of the results of the valid and widely

12   used DCF method. I would also note once again that GMP maintained its strong A-

13   credit rating with a 9.1% ROE agreed to in the MOU.

14

15   **Q68.** **Does this complete your Direct Testimony?**

16   A68.   Yes.