

Public Service Company of New Hampshire
d/b/a Eversource Energy
Docket No. DE 19-057
Supplemental Testimony of Ann E. Bulkley
July 16, 2020

STATE OF NEW HAMPSHIRE
BEFORE THE
NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

DOCKET NO. DE 19-057
REQUEST FOR PERMANENT DELIVERY RATES

SUPPLEMENTAL TESTIMONY OF
ANN E. BULKLEY

Return on Equity

On behalf of Public Service Company of New Hampshire
d/b/a Eversource Energy

July 16, 2020

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STATE OF NEW HAMPSHIRE
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SUPPLEMENTAL TESTIMONY OF ANN E. BULKLEY
PETITION OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
d/b/a EVERSOURCE ENERGY
REQUEST FOR PERMANENT RATES

July 16, 2020

Docket No. DE 19-057

1 I. INTRODUCTION

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

3 A. My name is Ann E. Bulkley. I am a Senior Vice President of Concentric Energy Advisors,
4 Inc. (“Concentric”), located at 293 Boston Post Road West, Suite 500, Marlborough,
5 Massachusetts 01752.

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

7 A. I am submitting this supplemental testimony before the New Hampshire Public Utilities
8 Commission (“Commission”) on behalf of Public Service Company of New Hampshire
9 (“PSNH” or the “Company”), d/b/a Eversource Energy (“Eversource”).

10 Q. Did you previously submit testimony in this proceeding?

11 A. Yes. I submitted Direct Testimony and Rebuttal Testimony regarding the appropriate
12 Return on Equity (“ROE”) and capital structure for PSNH in this proceeding.

1 **II. PURPOSE AND OVERVIEW OF TESTIMONY**

2 **Q. What is the purpose of your Supplemental Testimony?**

3 A. As directed by the Commission in Order No. 26,363, this Supplemental Testimony
4 provides updated information on the return on equity and capital structure for PSNH. In
5 addition, I provide an update on capital market conditions that have affected the investor
6 required return.

7 **Q. Please summarize your Supplemental Testimony.**

8 A. This Supplemental Testimony provides an update on current market conditions and the
9 effect of those conditions on the risk perceived by investors in holding equity. In addition,
10 this Supplemental Testimony updates the results of my ROE estimation models for market
11 conditions through May 2020. This Supplemental Testimony demonstrates the following:

12 i) Capital market conditions have changed dramatically since the Opposing Witnesses¹
13 filed their testimony in December 2019 and since my Rebuttal Testimony was filed on
14 March 3, 2020.

15 ii) Both the Discounted Cash Flow (“DCF”) model and the Capital Asset Pricing Model
16 (“CAPM”) are showing higher return estimates based on market data as of June 30,
17 2020, than at the time the Opposing Witnesses filed their testimony and

¹ The Opposing Witnesses include Dr. J. Randall Woolridge on behalf of the Commission Staff, Dr. Pradip K. Chattopadhyay on behalf of the Office of Consumer Advocate, and Steve W. Chriss on behalf of Walmart, Inc.

1 recommendations in December 2019. These higher results are consistent with other
2 market indicators suggesting that the cost of equity has increased since that time.

3 iii) Although government bond yields have decreased due to actions of the Federal Reserve
4 and the U.S. Congress to provide unprecedented support for the U.S. economy during
5 the COVID-19 pandemic, these lower yields on U.S. Treasury bonds are not the sole
6 determining factor in setting the authorized ROE for PSNH in this proceeding. Other
7 market indicators suggest that the cost of equity has risen, offsetting the effect of lower
8 interest rates in the valuation. These indicators include heightened volatility in equity
9 and bond markets; much wider credit spreads between government and utility bonds;
10 and significantly higher Beta coefficients (the measure of risk in the CAPM) from both
11 Bloomberg and Value Line.

12 The totality of these updates indicates that there is greater risk to equity investors in the
13 market today than when the Opposing Witnesses filed their testimonies and I provided
14 Rebuttal Testimony. These circumstances create strong affirmation for the ROE I am
15 recommending in this case. Furthermore, this evidence demonstrates that credit rating
16 agencies remain concerned about the financial metrics relating to utilities.

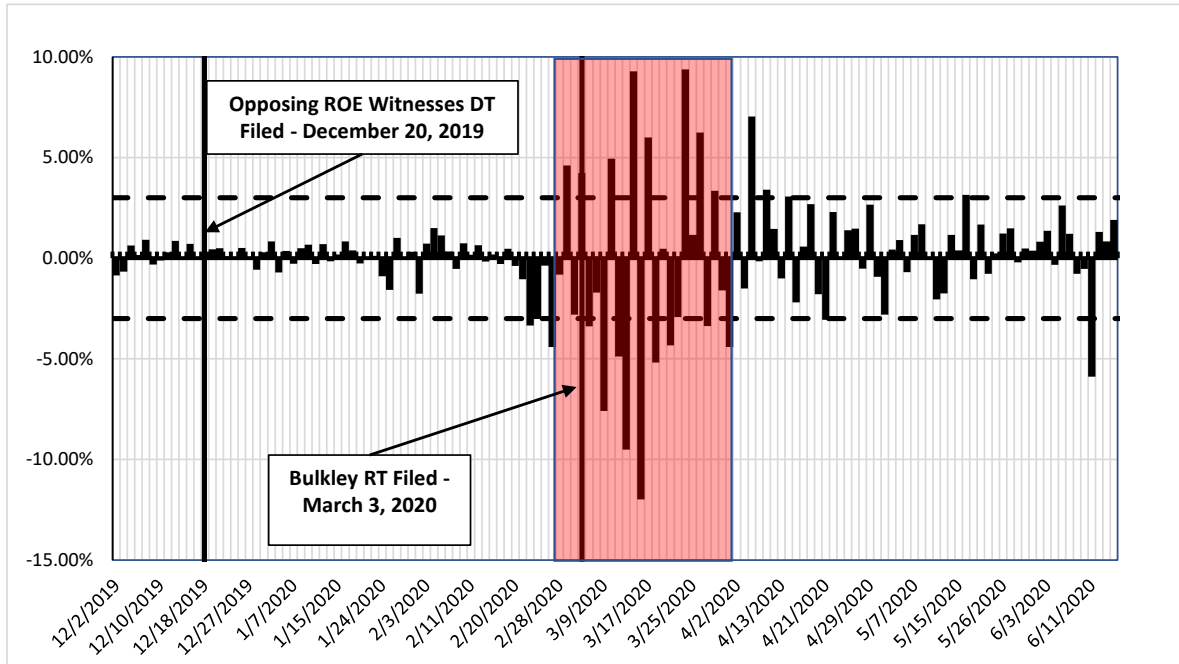
17 **III. CAPITAL MARKET CONDITIONS**

18 **Q. Please summarize the changes in capital market conditions since the filing of your**
19 **Direct and Rebuttal Testimonies.**

20 **A.** As discussed in my Direct and Rebuttal Testimonies, in addition to the analytical results of
21 the ROE estimation models, it is also necessary to evaluate current market conditions. The

1 evaluation of market conditions is critically important in determining how the assumptions
2 used in the ROE estimation models are being affected by market conditions and whether
3 the results of the models are reasonable when placed in context with market conditions.
4 Since the preparation of the analyses that are presented in my Direct Testimony, market
5 conditions have been extremely volatile, creating increased risk to investors in equities.
6 There has been very significant volatility in both the prices of utility stocks and the yields
7 on Treasury bonds that have affected the results of the models overall, and in very
8 significant ways over the short time period since the beginning of the current global health
9 pandemic. As shown in Figure 1 below, the S&P 500 Index swung more than 3 percent in
10 16 of the 22 trading days in March of 2020.

1 **Figure 1: S&P 500 Index – Daily Price Change – December 2019 – June 16, 2020²**



2

3 **Q. Have you reviewed any other indicators that measure volatility in the financial**
4 **markets?**

5 A. Yes, I reviewed two other measures of volatility in financial markets: (1) the CBOE
6 Volatility Index (“VIX”), and (2) the U.S. Treasury Note Volatility Index (“TYVIX”). The
7 VIX measures investors’ expectation of volatility in the S&P 500 over the next 30 days.
8 The TYVIX, also published by CBOE, measures investors’ expectation of volatility in the
9 10-year Treasury Bond over the next 30 days. As shown in Figure 2 below, the VIX and
10 TYVIX have recently reached levels not seen since the Great Recession of 2008-2009. For
11 example, the VIX was 82.69 on March 16, 2020. The VIX has not reached 80.00 since
12 November of 2008. In fact, the highest level reached during the Great Recession of 2008-

² Source: S&P Global Market Intelligence.

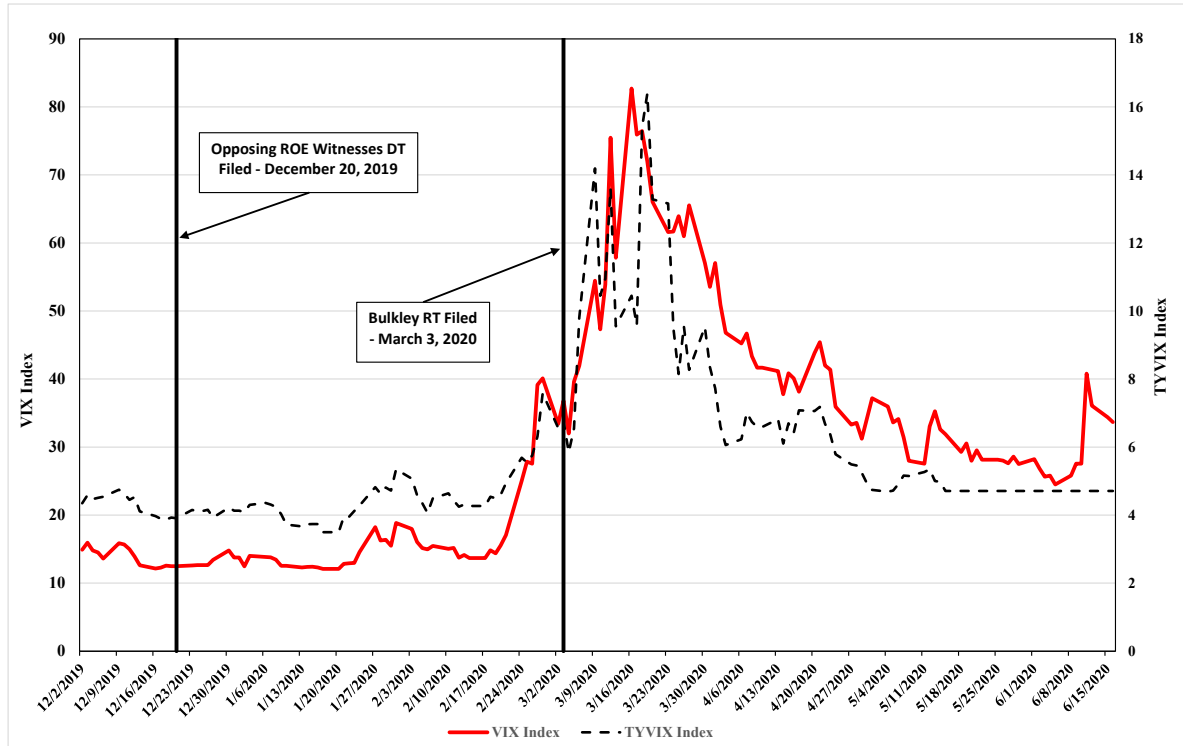
1 2009 was 80.86.³ Similarly, the TYVIX was 16.39 on March 19, 2020. Since at least
2 January 2003, the TYVIX has never exceeded 15.00, including during the Great Recession
3 of 2008-2009.⁴ These indicators show that COVID-19 has caused a dramatic increase in
4 the level of uncertainty and volatility in the market, which exceeded what occurred during
5 the Great Recession of 2008-2009.

6 Furthermore, as shown in Figure 2 below, while the VIX has declined in April and May,
7 this measure of volatility still remains well above levels seen prior to COVID-19 in January
8 and February. It is important to view the declines in the VIX in the context of the
9 unprecedented response by the Federal Reserve and Congress. As discussed in more detail
10 below, the Federal Reserve's corporate bond buying programs are providing liquidity to
11 bond markets and therefore reducing some of the uncertainty that was driving the volatility
12 seen in March. However, there is still much uncertainty regarding the near-term effect of
13 COVID-19 on the economy and the financial markets, which is why the VIX is still above
14 its long-term average.

³ *Ibid.*

⁴ *Ibid.*

Figure 2: CBOE VIX and TYVIX – January 2, 2003 – June 16, 2020⁵



Q. Have you reviewed any indicators that measure the uncertainty in the global economy related to COVID-19?

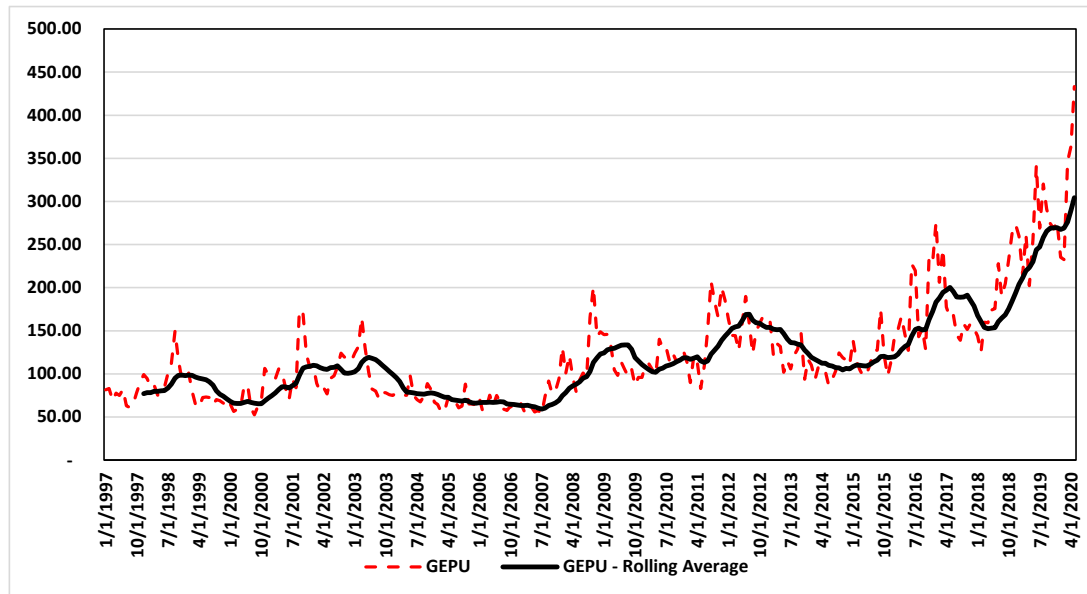
A. Yes, I have. I reviewed the global economic policy uncertainty index developed by economists Scott Baker, Nicholas Bloom and Steven Davis. The index is a GDP-weighted average of the economic policy uncertainty index of 21 countries. The economic policy uncertainty index measures the frequency that articles in publications of a country discuss economic policy uncertainty.⁶ As shown in Figure 3 below, uncertainty regarding global economic policy is at its highest level since at least 1997, with the largest increase occurring

⁵ Source: Bloomberg Professional.

⁶ Source: Economic Policy Uncertainty: <https://www.policyuncertainty.com/index.html>.

1 in the last two years as a result of the escalating trade dispute between the U.S. and China
2 and the spread of COVID-19.

3 **Figure 3: Global Economic Policy Uncertainty Index**



4
5 **Q. Have rating agencies commented on the effects of current market conditions on**
6 **regulated utilities?**

7 **A.** Yes. Standard & Poor's ("S&P") recently downgraded the outlook on the entire North
8 American utilities sector. S&P indicated that 25 percent of the industry was previously on
9 a negative outlook or CreditWatch with negative implications. Also, S&P expected that
10 COVID-19 would increase pressure on utilities and that a recession would lead to an
11 increasing number of downgrades and negative outlooks.⁷

⁷ Standard & Poor's Ratings Direct, COVID-19: The Outlook for North American Regulated Utilities Turns Negative, April 2, 2020.

1 **Q. What steps have the Federal Reserve and Congress taken to stabilize financial**
2 **markets and support the economy?**

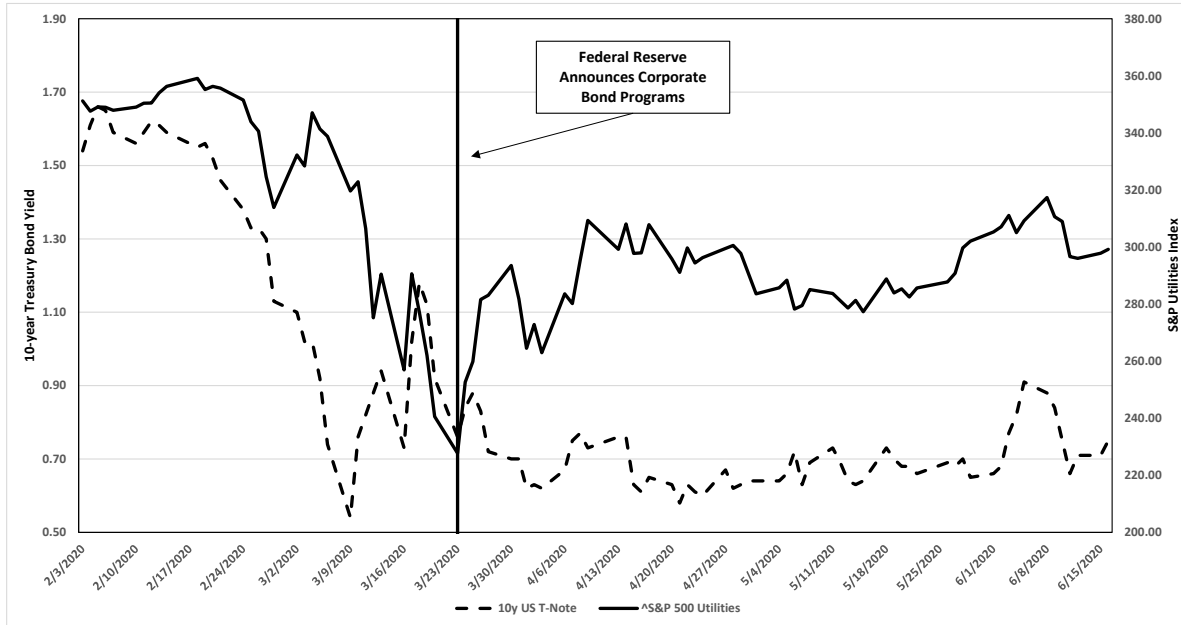
3 A. On March 23, 2020, the Federal Reserve began expansive programs to support credit to
4 large employers; the Primary Market Corporate Credit Facility (“PMCCF”) to provide
5 liquidity for new issuances of corporate bonds, and the Secondary Market Corporate Credit
6 Facility (“SMCCF”) to provide liquidity for outstanding corporate debt issuances. Further,
7 the Federal Reserve supported the flow of credit to consumers and businesses through the
8 Term Asset-Backed Securities Loan Facility (“TALF”). Additionally, on March 27, 2020,
9 the Coronavirus Aid, Relief, and Economic Security (“CARES”) Act was signed into law
10 as a large fiscal stimulus package aimed at also mitigating the economic effects of the
11 coronavirus. Although these expansive programs have provided for greater price stability,
12 as shown in Figure 2, both the VIX and the TYVIX remained well above long-term
13 historical normal levels.

14 **Q. How has the market responded to the unprecedented intervention by the Federal**
15 **Reserve?**

16 A. The uncertainty surrounding the spread of COVID-19 resulted in a flight-to-quality as
17 investors purchased safer assets such as U.S. Treasuries due to increased fears of a
18 recession. This has been increasingly evident over the past few months as investors
19 responded to news of the number of COVID-19 cases outside of China and the economic
20 effects of the policies enacted to contain COVID-19. However, as discussed above, in late
21 March, the Federal Reserve began expansive programs with the purpose of maintaining
22 access to capital markets for corporate borrowers. These unprecedented programs resulted
23 in lower borrowing costs for corporate firms and thus continued access to the capital

needed to offset the economic effects of COVID-19. As a result, interest rates have remained low and stability has been restored in the corporate bond market. For investors, this led to allocating more funds to equities. As shown in Figure 4 below, while the yield on the 10-year Treasury Bond has remained relatively stable and in the range of 0.58 percent to 0.91 percent between March 23, 2020 and June 16, 2020, the S&P Utilities Index increased drastically following the Federal Reserve's announcement on March 23, 2020. Therefore, the policies of the Federal Reserve, while resulting in stability in the bond markets, have resulted in higher equity prices as investors search for returns given the current low interest rate environment.

Figure 4: 10-year U.S. Treasury Bond Yield and S&P Utilities Index⁸



⁸ Source: S&P Global Market Intelligence.

1 **Q. What are your conclusions regarding the recent market volatility and its effect on the**
2 **cost of equity for PSNH?**

3 A. As discussed above, investors responded to the spread of COVID-19 by divesting higher-
4 risk assets and purchasing lower-risk assets such as U.S. Treasury bonds. However, while
5 utilities have historically been “safe haven” investments in times of market volatility, in
6 the current market conditions, this dynamic has not held true. Instead, utility stocks have
7 traded more like the market overall, demonstrating greater risk to holding equity in these
8 companies. For example, the Beta for utilities, which measures the risk of utilities
9 compared to the overall stock market, has increased substantially from 0.59 to Bloomberg’s
10 0.81, which is based on the most current data.

11 The constant news regarding the spread of COVID-19 and its economic effects has resulted
12 in unprecedented volatility in financial markets as investors have rotated in and out of
13 various asset classes, including utilities, responding to both positive and negative
14 developments.

15 Thus, although the policies of the Federal Reserve have stabilized the corporate bond
16 market, the result has been an increase in equity prices as investors have had to move along
17 the risk spectrum in search of returns.

18 The ROE estimation models filed in my Direct and Rebuttal Testimonies and the Opposing
19 Witnesses testimonies rely on market data that preceded the global pandemic and is no
20 longer representative of the cost of equity for the time period that PSNH’s rate will be in
21 effect.

1 As discussed below, I have updated my ROE estimation models to rely on recent market
2 data, but this data must be interpreted with extreme caution. For example, the Constant
3 Growth DCF model relies on the average share prices for the proxy companies, which have
4 been extremely volatile in the last several months and are likely currently influenced by
5 the recent policies of the Federal Reserve.

6 There are two key factors that must be considered when determining the ROE for PSNH
7 using my updated ROE model results: (1) current and prospective market conditions should
8 be considered when determining where within the range of results PSNH's ROE should be
9 set; and (2) where possible, it is necessary to consider projected market data in each of the
10 models which reflect economists' expectations for the market conditions that will prevail
11 during the period that PSNH's rates will be in effect.

12 IV. UPDATED RESULTS

13 **Q. Have you updated the results of the ROE estimation methodologies and capital**
14 **structure analyses that you presented in your Direct Testimony?**

15 A. Yes. I updated the results of each of the ROE estimation methodologies presented in my
16 Direct Testimony with market data through May 29, 2020. I also updated the capital
17 structure analysis presented in my Direct Testimony through the first quarter of 2020.

18 **Q. Are the methodologies you relied on consistent with those outlined in your Direct**
19 **Testimony?**

20 A. Yes.

1 **Q. How have the recent market conditions that you discussed above affected the results**
2 **of the ROE estimation models?**

3 A. Market conditions have affected both the DCF and CAPM models. The revaluation of
4 utility stocks in the market as a result of COVID-19 affected the assumptions used in the
5 DCF and the volatility in the market and the Federal Reserve's intervention in the market
6 affected the CAPM.

7 **Q. Please discuss the effect of recent market conditions on the DCF.**

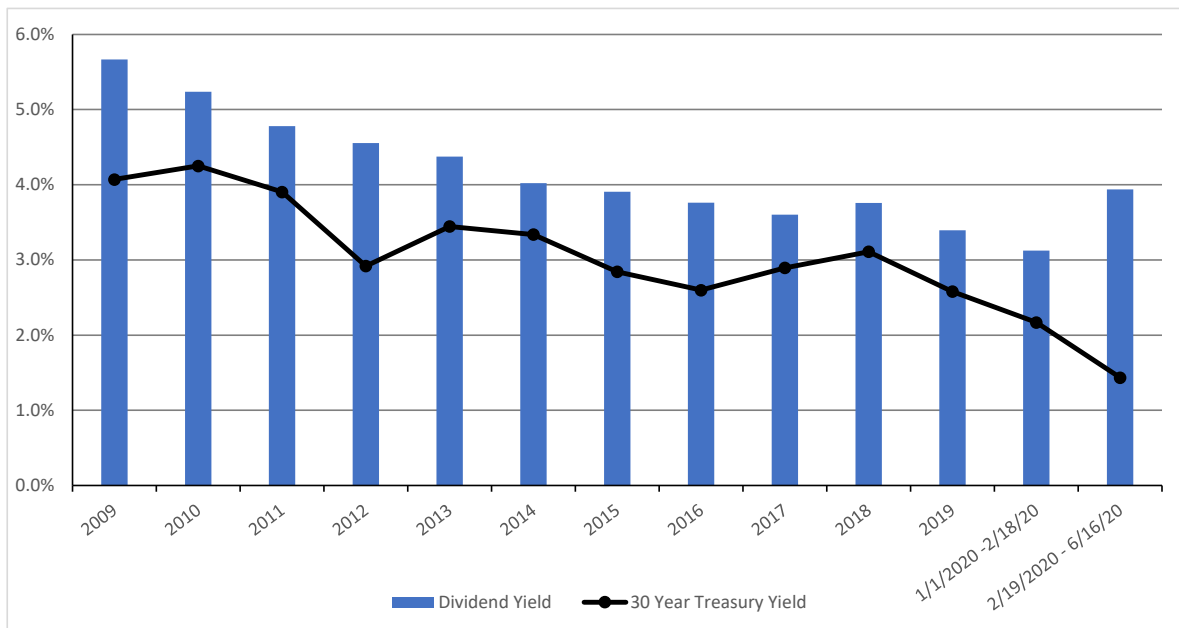
8 A. The effect of recent market conditions is evidenced in the dividend yield for the proxy
9 group companies. As shown in Figure 5 below, the dividend yield for the proxy group was
10 well below historical levels prior to the market correction caused by COVID-19. In
11 response to the recent market volatility, stock prices of the proxy group companies have
12 declined, resulting in an increase in dividend yields. For comparison purposes, at the time
13 that the Opposing Witnesses filed testimony in December 2019, the dividend yield for my
14 proxy group was 3.20 percent and the dividend yield for Dr. Woolridge's proxy group was
15 3.15 percent. As shown in Attachment AEB-Supplemental-2, the current dividend yield
16 for my proxy group, is 4.13 percent,⁹ an increase of 93 basis points. Furthermore, the
17 average growth rate in December 2019 was 4.36 percent.¹⁰ As shown in Attachment AEB-
18 Supplemental-2, the average growth rate for my proxy group has increased to 4.82 percent,
19 an increase of 46 basis points. In total, this represents an increase of 139 basis points. This

⁹ Based on a 30-day average stock price as of May 29, 2020.

¹⁰ Attachment JRW-9, pages 5 and 6. The average is calculated for the projected EPS growth rates reported by Value Line, Yahoo and Zacks for the Bulkley Proxy Group.

demonstrates that since the filing of the Opposing Witnesses testimony, the cost of equity has increased.

Figure 5: Proxy Group Dividend Yields – January 2009 – June 16, 2020



Q. Why is this important?

A. It is important to understand the drivers in each of the models and how the results are affected by those drivers. In my updated analysis, I present 30-, 90- and 180-trading day average stock price scenarios. The 30- and 90-day averages demonstrate the effects of the recent market conditions since COVID-19. The 180-day average also includes this data; however, that average encompasses data prior to the change in market conditions.

1 **Q. Why have you included the 180-day averages if those averages do not reflect the**
2 **changes in current market conditions, which was the purpose of the Commission's**
3 **request for updated information?**

4 **A.** I recognize that the 180-day scenario does not isolate the effects of the recent market
5 conditions for the Commission, however I have updated this scenario because it was
6 included in my Direct Testimony. If the Commission's interest relates to the effect of
7 current conditions on the cost of equity, the 180-day scenario should receive less weight,
8 since it includes trading days prior to the COVID-19 pandemic, when utility stocks were
9 priced at an all- time highs. Charles Schwab, who recently downgraded the utility sector to
10 underperform, noted that:

11 [h]owever, amid the drop in stocks in February and March, the
12 historically low-equity-beta Utilities sector simply didn't play its
13 traditional relative safe-haven role. The sharp drop in interest rates
14 would normally be expected to provide relative support to this sectors,
15 which relies on high levels of debt and tends to pay relatively high
16 dividends—often an attraction for investors when yields on fixed
17 income investments are low. However, there were unique
18 circumstances that outweighed these historical relationships.
19

20 For one thing, because some investors had already been reaching for
21 yield before the crisis began, the high-dividend-paying Utilities sector
22 had been bid up to record-high valuation levels. Even
23 underperformance year-to-date hasn't fully reversed those relatively
24 high valuations, so we're not confident the sector will return to its
25 defensive roots if markets sell off again.
26

1 Additionally, with improving prospects for economic growth, longer-
2 term yields have begun to nudge higher, which further reduces the
3 sector's attractiveness. The fundamentals of the sector remain relatively
4 strong, owing to still-low interest rates supporting capital expenditure
5 needs and stability of earnings growth expectations. However, the
6 sector's short-term relative performance has lagged amid a turn towards
7 more cyclical sectors. Therefore, we are underweighting Utilities,
8 despite expected bouts of volatility in the overall market.¹¹

9 As noted by Charles Schwab, because the high valuations of utility stocks have not
10 reversed, analysts expect that utility stock prices will not rebound even if the market were
11 to experience additional corrections. Therefore, the 180-day stock prices reflect an
12 overvaluation that investors do not expected to continue and therefore should not be
13 considered in the determination of the cost of equity.

14 **Q. Please explain the effects of market conditions on the CAPM.**

15 A. As mentioned previously, the market experienced and continues to experience significant
16 volatility as a result of COVID-19. In such circumstances utilities have historically
17 represented safe-havens. However, the historically high valuations of utilities prior to the
18 pandemic resulted in investors searching for other alternatives once the economic effects
19 of COVID-19 became more apparent. Thus, utility stocks have traded more like the overall
20 market. This has resulted in an increase in the Beta coefficients for utility stocks.

21 **Q. How do the current Beta coefficients compare with the Beta coefficients used in the**
22 **intervenor testimony in December 2020?**

23 A. The current Beta coefficients have increased substantially. In December 2020, the average
24 Beta coefficient for my proxy group was 0.59 whereas currently the Beta coefficients for

¹¹ Charles Schwab, Utilities Sector Rating: Underperform, June 18, 2020.

1 my proxy group using Value Line are 0.69 and based on Bloomberg's more current data,
2 0.81.

3 **Q. Is that increase included in your updated CAPM analysis?**

4 A. It is only partially captured in the results through the end of May. As discussed in my
5 Direct Testimony, I relied on both Bloomberg and Value Line for estimates of the Beta
6 coefficients for the proxy group companies. Bloomberg calculates Betas on an ongoing
7 basis, while Value Line reports on the electric utilities industry in three segments over time.
8 Value Line reported its update for the companies in the East region on May 15, 2020, which
9 captured the effects of volatility on those stocks. The remaining company reports were not
10 issued as of the end of May. The Central region was issued as of June 13, 2020 and the
11 West Region is not scheduled to be issued until late July. Therefore, only one region of
12 Value Line's updated market data was updated to reflect the effects of market conditions
13 as of the analytical period used in my update.

14 **Q. How did the Betas change in the updates for the companies that Value Line covers in**
15 **the East region?**

16 A. The Betas increased significantly. As shown in Figure 6 below, the average Beta for this
17 segment increased from 0.53 to 0.87. As shown in Attachment AEB-Supplemental-8, the
18 updated Betas for the Value Line East region are more in line with the Bloomberg Betas
19 used in my updated analyses.

Figure 6: Comparison of Value Line Betas

Value Line Electric East	Ticker	May Value Line Beta	February Value Line Beta
Avangrid, Inc.	AGR	0.80	0.40
Dominion Resources, Inc.	D	0.80	0.50
Duke Energy Corporation	DUK	0.85	0.45
Consolidated Edison, Inc.	ED	0.75	0.40
Eversource Energy	ES	0.90	0.55
Exelon Corporation	EXC	0.90	0.65
FirstEnergy Corporation	FE	0.85	0.60
NextEra Energy, Inc.	NEE	0.85	0.50
Public Service Enterprise Group, Inc.	PEG	0.90	0.60
PPL Corporation	PPL	1.05	0.65
Southern Company	SO	0.90	0.50
Average		0.87	0.53
Date		5/15/2020	2/14/2020

Q. Has Value Line updated the Betas for other regions?

A. Yes. Value Line updated the Betas for the Central region in June. Because my analysis uses prices as of the end of May, the Betas for the Central region were not incorporated into my analysis. However, as shown in Attachment AEB-Supplemental-8, the Betas for the Central region have also increased from 0.57 to 0.88. Furthermore, Value Line will report an update to the West region in July. The last publication for the West region was April 24, 2020. Although this publication date was after the start of the pandemic, Value Line's analytical results may not incorporate much data from the current market conditions due to the production schedule. It is reasonable to expect that the July report would demonstrate a similar increase in Betas as has been seen in the East and Central regions.

Q. What is your conclusion about the CAPM results using the Value Line Betas?

A. Based on the reporting schedule for Value Line, the effects of market conditions are lagging and are not reflected in the analysis as of May 29, 2020. Therefore, since the Bloomberg

1 Betas are updated to reflect how current market conditions have affected each of the proxy
2 group companies, it is more appropriate to rely on the CAPM results using the Bloomberg
3 Betas.

4 **Q. Are there other assumptions that have been affected by recent market conditions?**

5 A. Yes. The yield on the 30-year Treasury bond is likely to be understated by steps taken by
6 the Federal Reserve and Congress to stabilize the markets.

7 **Q. Please summarize the results of your updated analysis.**

8 A. As shown in Figure 7 below and in Attachment AEB-Supplemental-1 through Attachment
9 AEB-Supplemental-7, I have updated the DCF and CAPM analyses presented in my Direct
10 Testimony to include market data through May 29, 2020. The mean DCF results using
11 EPS growth rates range from 9.32 percent to 9.53 percent. Using the high growth rate
12 scenario, the DCF results range from 9.34 percent to 10.02 percent. When both EPS and
13 the retention growth rate are relied upon, the high end of the range is 10.31 percent. For
14 CAPM, the results range from range from 9.54 percent to 11.32 percent.

Figure 7: Summary of Analytical Results¹²

<i>Constant Growth DCF using Earnings Growth Rates</i>			
	Mean Low	Mean	Mean High
30-Day Average	9.25%	9.43%	10.02%
90-Day Average	9.29%	9.32%	9.56%
180-Day Average	9.66%	9.53%	9.34%
<i>Constant Growth DCF using Earnings and Retention Growth Rates</i>			
	Mean Low	Mean	Mean High
30-Day Average	8.27%	9.04%	10.31%
90-Day Average	9.15%	8.86%	9.85%
180-Day Average	9.05%	8.63%	9.62%
<i>CAPM</i>			
	Current Risk-Free Rate (1.33%)	Q3 2020 – Q3 2021 Projected Risk-Free Rate (1.68%)	2022-2026 Projected Risk-Free Rate (3.00%)
Bloomberg Beta	11.00%	11.06%	11.32%
Value Line Beta	9.54%	9.65%	10.07%
<i>Treasury Yield Plus Risk Premium</i>			
	Current Risk-Free Rate (1.33%)	Q3 2020 – Q3 2021 Projected Risk-Free Rate (1.68%)	2022-2026 Projected Risk-Free Rate (3.00%)
Risk Premium Analysis	9.06%	9.22%	9.82%
Risk Premium Mean Result	9.37%		

Q. What are your conclusions regarding the results of your updated ROE analyses?

A. All of the market indicators discussed in my Supplemental Testimony demonstrate that there is increased risk in the financial markets as a result of the economic effects of COVID-19, which results in an increase in the investor-required return on equities. The market assumptions used in the CAPM better reflect these risk factors, which suggests it is

¹² The analytical results included in Figure 7 reflect the results of the Constant Growth DCF analysis excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent. Based on the low-end outlier test, scenarios with lower growth rates can result in a higher ROE than scenarios that rely on higher growth rates.

1 appropriate to place greater weight on the results of the CAPM analysis. In addition, while
2 it is also true that the share prices of utilities have declined as a result of COVID-19, the
3 valuations of utilities are still well-above long-term averages. Moreover, as shown in
4 Figure 4, the share prices of utilities have increased since the Federal Reserve's
5 unprecedented intervention to stabilize bond markets. As a result, the DCF model is still
6 likely understating the cost of equity for the period that PSNH's rates will be in effect.

7 While I recognize that short-term averages of the current the risk-free rate used in the
8 CAPM have also been affected by the intervention of the Federal Reserve, the use of
9 investors' expectations for the yield on Treasury bonds is consistent with the intention of
10 the analytical exercise, which is to estimate the investor-required return on equity.
11 Moreover, the Betas, in particular the Bloomberg Betas, which have the ability to capture
12 market changes without the lag effect of Value Line's publication schedule, demonstrate
13 that utilities have been trading more like the overall market in the current market
14 conditions. Based on these assumptions, the CAPM can provide a reasonable estimate of
15 the cost of equity using current market conditions and investor expectations. Based on this
16 analysis, it is reasonable to place greater weight on the results of the updated CAPM when
17 determining the ROE for PSNH.

18 **Q. Please summarize the results of your updated capital structure analysis.**

19 A. As shown in Attachment AEB-Supplemental-10, I updated the capital structure analysis to
20 include the most recently available eight quarters of reported capital structure data for the
21 proxy group companies. As in my Direct Testimony, this analysis is based on the capital

1 structures of the utility operating companies of the proxy group companies. As shown in
2 Attachment AEB-Supplemental-10, the equity ratio as of the end of the first quarter of
3 2020 was 52.80 percent and the average over the eight quarters was 53.55 percent. The
4 high end of the range is 58.34 percent for first quarter 2020 and 60.08 percent for the most
5 recent eight quarters.

6 **Q. How does the Company's proposed capital structure compare with the capital**
7 **structures of the proxy group companies?**

8 A. The Company's actual five-quarter average equity ratio as of June 30, 2020 is 55.09
9 percent. I understand that the Company has sought authorization from the NHPUC to issue
10 up to \$200 million of long-term debt. In addition, pending approval from the Commission,
11 the Company expects to issue at least \$150 million of debt by August 31, 2020.
12 Incorporating this new issuance into the capital structure, without making any other
13 adjustments to the capital structure would result in a five-quarter equity ratio of 54.41
14 percent. Based on the analysis presented in Attachment AEB-Supplemental-10, the
15 Company's proposed capital structure is well within the range of the capital structures of
16 the utility operating companies in the proxy group and therefore is reasonable.

17 **V. RECENTLY AUTHORIZED RETURNS IN OTHER JURISDICTIONS**

18 **Q. Have you reviewed the returns that have been authorized in other jurisdictions since**
19 **the filing of your Rebuttal Testimony?**

20 A. Yes. Figure 2 in my Rebuttal Testimony summarizes recently authorized ROEs for the
21 period from January 2009 through January 2020 and compares those returns with the
22 recommendations of Dr. Woolridge and Dr. Chattopadhyay. As shown in that chart, the
23 average annual authorized return over the last few years was approximately 125 to 150

1 basis points above the returns recommended by these witnesses. Since that time, there
2 have been some additional cases that have been finalized. As shown in Attachment AEB-
3 Supplemental-9, the range of returns that have been authorized since January 2020 is 9.10
4 percent to 10.00 percent with a mean of 9.54 percent.¹³ Furthermore, it is important to note
5 that the range established by the fully litigated cases has been somewhat higher; 9.25
6 percent to 10.00 percent with a mean of 9.64 percent, which is generally consistent with
7 the range established in the data set that was reviewed in my Rebuttal Testimony.

8 **VI. CONCLUSION AND RECOMMENDATION**

9 **Q. What is your conclusion regarding a fair return on equity for PSNH?**

10 A. Based on my updated analyses, I conclude that my ROE recommendation of 10.40 percent
11 remains reasonable for PSNH. A return at this level is:

- 12 1. Supported by the range of results contained in my Direct and Rebuttal Testimonies
13 and this Supplemental Testimony;
- 14 2. Consistent with the increased return to equity resulting from current capital market
15 conditions; and
- 16 3. Consistent with the range of ROEs awards for electric utilities in other state
17 jurisdictions.

18 **Q. Does this conclude your Supplemental Testimony?**

19 A. Yes, it does.

¹³ Source: SNL Energy. Data excludes the Central Maine Power ROE of 8.25 percent authorized on February 19, 2020 because it included a penalty of 100 basis points for management performance.

SUMMARY OF ROE ANALYSES RESULTS¹

Constant Growth DCF - Earnings Growth			
	Mean Low	Mean	Mean High
30-Day Average	9.25%	9.43%	10.02%
90-Day Average	9.29%	9.32%	9.56%
180-Day Average	9.66%	9.53%	9.34%
Constant Growth Average	9.40%	9.42%	9.64%
Constant Growth DCF - Earnings & Retention Growth			
	Mean Low	Mean	Mean High
30-Day Average	8.27%	9.04%	10.31%
90-Day Average	9.15%	8.86%	9.85%
180-Day Average	9.05%	8.63%	9.62%
Constant Growth Average	8.82%	8.84%	9.93%
CAPM			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Bloomberg Beta	11.00%	11.06%	11.32%
Value Line Beta	9.54%	9.65%	10.07%
Treasury Yield Plus Risk Premium			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Risk Premium Analysis	9.06%	9.22%	9.82%
Risk Premium Mean Result	9.37%		

Notes:

[1] The analytical results included in the table reflect the results of the Constant Growth analysis excluding the results for individual companies that did not meet the minimum threshold of 7 percent.

30-DAY CONSTANT GROWTH DCF -- PSNH PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	All Proxy Group			With Exclusions		
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	[9]	[10]	[11]	[12]	[13]	[14]
ALLETE, Inc.	ALE	\$2.47	\$55.35	4.46%	4.60%	5.50%	7.00%	NA%	6.25%	10.09%	10.85%	11.62%	10.09%	10.85%	11.62%
Alliant Energy Corporation	LNT	\$1.52	\$48.09	3.16%	3.25%	6.50%	5.65%	5.50%	5.88%	8.75%	9.14%	9.76%	8.75%	9.14%	9.76%
Avangrid, Inc.	AGR	\$1.76	\$42.61	4.13%	4.25%	6.00%	6.30%	5.50%	5.93%	9.74%	10.19%	10.56%	9.74%	10.19%	10.56%
FirstEnergy Corporation	FE	\$1.56	\$41.53	3.76%	3.92%	8.50%	Negative	NA%	8.50%	12.42%	12.42%	12.42%	12.42%	12.42%	12.42%
Hawaiian Electric Industries, Inc.	HE	\$1.32	\$38.46	3.43%	3.48%	3.50%	3.30%	1.70%	2.83%	5.16%	6.31%	6.99%			
NorthWestern Corporation	NWE	\$2.40	\$57.75	4.16%	4.22%	2.50%	3.66%	3.40%	3.19%	6.71%	7.41%	7.89%		7.41%	7.89%
Portland General Electric Company	POR	\$1.54	\$45.18	3.41%	3.48%	4.00%	4.15%	5.30%	4.48%	7.48%	7.97%	8.80%	7.48%	7.97%	8.80%
PPL Corporation	PPL	\$1.66	\$25.55	6.50%	6.55%	2.50%	0.50%	NA%	1.50%	7.01%	8.05%	9.08%	7.01%	8.05%	9.08%
Mean				4.13%	4.22%	4.88%	4.37%	4.28%	4.82%	8.42%	9.04%	9.64%	9.25%	9.43%	10.02%

Notes:

- [1] Source: Bloomberg Professional.
[2] Source: Bloomberg Professional, equals 30-day average as of May 29, 2020
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])
[12] Equals [9] if greater than 7.00%
[13] Equals [10] if greater than 7.00%
[14] Equals [11] if greater than 7.00%

90-DAY CONSTANT GROWTH DCF -- PSNH PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	All Proxy Group			With Exclusions		
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	[9]	[10]	[11]	[12]	[13]	[14]
										Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.47	\$65.91	3.75%	3.86%	5.50%	7.00%	NA%	6.25%	9.35%	10.11%	10.88%	9.35%	10.11%	10.88%
Alliant Energy Corporation	LNT	\$1.52	\$51.84	2.93%	3.02%	6.50%	5.65%	5.50%	5.88%	8.51%	8.90%	9.53%	8.51%	8.90%	9.53%
Avangrid, Inc.	AGR	\$1.76	\$46.81	3.76%	3.87%	6.00%	6.30%	5.50%	5.93%	9.36%	9.80%	10.18%	9.36%	9.80%	10.18%
FirstEnergy Corporation	FE	\$1.56	\$44.08	3.54%	3.69%	8.50%	Negative	NA%	8.50%	12.19%	12.19%	12.19%	12.19%	12.19%	12.19%
Hawaiian Electric Industries, Inc.	HE	\$1.32	\$43.16	3.06%	3.10%	3.50%	3.30%	1.70%	2.83%	4.78%	5.94%	6.61%			
NorthWestern Corporation	NWE	\$2.40	\$65.27	3.68%	3.74%	2.50%	3.66%	3.40%	3.19%	6.22%	6.92%	7.40%			7.40%
Portland General Electric Company	POR	\$1.54	\$51.56	2.99%	3.05%	4.00%	4.15%	5.30%	4.48%	7.05%	7.54%	8.37%	7.05%	7.54%	8.37%
PPL Corporation	PPL	\$1.66	\$28.59	5.81%	5.85%	2.50%	0.50%	NA%	1.50%	6.32%	7.35%	8.38%		7.35%	8.38%
Mean				3.69%	3.77%	4.88%	4.37%	4.28%	4.82%	7.97%	8.59%	9.19%	9.29%	9.32%	9.56%

Notes:

- [1] Source: Bloomberg Professional.
[2] Source: Bloomberg Professional, equals 90-day average as of May 29, 2020
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])
[12] Equals [9] if greater than 7.00%
[13] Equals [10] if greater than 7.00%
[14] Equals [11] if greater than 7.00%

180-DAY CONSTANT GROWTH DCF -- PSNH PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	All Proxy Group			With Exclusions		
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	[9]	[10]	[11]	[12]	[13]	[14]
ALLETE, Inc.	ALE	\$2.47	\$74.56	3.31%	3.42%	5.50%	7.00%	NA%	6.25%	8.90%	9.67%	10.43%	8.90%	9.67%	10.43%
Alliant Energy Corporation	LNT	\$1.52	\$52.63	2.89%	2.97%	6.50%	5.65%	5.50%	5.88%	8.47%	8.86%	9.48%	8.47%	8.86%	9.48%
Avangrid, Inc.	AGR	\$1.76	\$48.50	3.63%	3.74%	6.00%	6.30%	5.50%	5.93%	9.23%	9.67%	10.04%	9.23%	9.67%	10.04%
FirstEnergy Corporation	FE	\$1.56	\$45.97	3.39%	3.54%	8.50%	Negative	NA%	8.50%	12.04%	12.04%	12.04%	12.04%	12.04%	12.04%
Hawaiian Electric Industries, Inc.	HE	\$1.32	\$44.09	2.99%	3.04%	3.50%	3.30%	1.70%	2.83%	4.72%	5.87%	6.55%			
NorthWestern Corporation	NWE	\$2.40	\$68.84	3.49%	3.54%	2.50%	3.66%	3.40%	3.19%	6.03%	6.73%	7.21%			7.21%
Portland General Electric Company	POR	\$1.54	\$53.79	2.86%	2.93%	4.00%	4.15%	5.30%	4.48%	6.92%	7.41%	8.24%		7.41%	8.24%
PPL Corporation	PPL	\$1.66	\$31.05	5.35%	5.39%	2.50%	0.50%	NA%	1.50%	5.86%	6.89%	7.91%			7.91%
Mean				3.49%	3.57%	4.88%	4.37%	4.28%	4.82%	7.77%	8.39%	8.99%	9.66%	9.53%	9.34%

Notes:

- [1] Source: Bloomberg Professional.
[2] Source: Bloomberg Professional, equals 180-day average as of May 29, 2020
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])
[12] Equals [9] if greater than 7.00%
[13] Equals [10] if greater than 7.00%
[14] Equals [11] if greater than 7.00%

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RETENTION GROWTH

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
		All Dividends to Net Profit Projection Year 1	All Dividends to Net Profit Projection Year 2	All Dividends to Net Profit Projection Years 3-5	Average Retention Ratio	Return on Common Equity Projection Year 1	Return on Common Equity Projection Year 2	Return on Common Equity Projection Years 3-5	Average Return on Common Equity	B x R	Common Shares Outstanding Year 0	Common Shares Outstanding Years 3-5	Common Shares Outstanding Growth Rate	Price Projection Years 3-5 High	Price Projection Years 3-5 Low	Price Projection Years 3-5 Mid	Projected Book Value per Share Years 3-5	Market-to-Book Ratio	S	V	S x V	BR + SV
ALLETE, Inc.	ALE	69.00%	69.00%	67.00%	32.00%	7.50%	8.00%	8.50%	8.00%	2.56%	51.70	53.00	0.50%	\$ 90.00	\$ 65.00	\$ 77.50	52.50	1.48	0.74%	32.26%	0.24%	2.80%
Alliant Energy Corporation	LNT	63.00%	64.00%	67.00%	35.33%	10.50%	10.00%	10.50%	10.33%	3.65%	245.02	260.00	1.19%	\$ 55.00	\$ 40.00	\$ 47.50	28.80	1.65	1.97%	39.37%	0.78%	4.43%
Avangrid, Inc.	AGR	81.00%	76.00%	72.00%	23.67%	4.50%	4.50%	5.50%	4.83%	1.14%	309.01	309.00	0.00%	\$ 55.00	\$ 40.00	\$ 47.50	52.50	0.90	0.00%	-10.53%	0.00%	1.14%
FirstEnergy Corporation	FE	85.00%	58.00%	60.00%	32.33%	14.00%	19.00%	15.50%	16.17%	5.23%	540.65	575.00	1.24%	\$ 60.00	\$ 45.00	\$ 52.50	20.25	2.59	3.21%	61.43%	1.97%	7.20%
Hawaiian Electric Industries, Inc.	HE	67.00%	67.00%	71.00%	31.67%	9.00%	9.00%	9.00%	9.00%	2.85%	108.97	114.00	0.91%	\$ 50.00	\$ 35.00	\$ 42.50	25.00	1.70	1.54%	41.18%	0.63%	3.48%
NorthWestern Corporation	NWE	69.00%	70.00%	70.00%	30.33%	8.50%	8.50%	8.50%	8.50%	2.58%	50.45	53.00	0.99%	\$ 85.00	\$ 65.00	\$ 75.00	45.75	1.64	1.62%	39.00%	0.63%	3.21%
Portland General Electric Company	POR	64.00%	64.00%	67.00%	35.00%	8.50%	8.50%	9.00%	8.67%	3.03%	89.39	90.00	0.14%	\$ 60.00	\$ 45.00	\$ 52.50	33.75	1.56	0.21%	35.71%	0.08%	3.11%
PPL Corporation	PPL	69.00%	68.00%	67.00%	32.00%	13.50%	13.00%	12.50%	13.00%	4.16%	767.23	780.00	0.33%	\$ 45.00	\$ 35.00	\$ 40.00	21.25	1.88	0.62%	46.88%	0.29%	4.45%
Mean																						3.73%

Notes:

- [1] Source: Value Line
[2] Source: Value Line
[3] Source: Value Line
[4] Equals 1 - Average ([1], [2], [3])
[5] Source: Value Line
[6] Source: Value Line
[7] Source: Value Line
[8] Equals Average ([5], [6], [7])
[9] Equals [4] x [8]
[10] Source: Value Line
[11] Source: Value Line
[12] Equals ([11] / [12]) ^ 0.2 - 1
[13] Source: Value Line
[14] Source: Value Line
[15] Equals Average ([13], [14])
[16] Source: Value Line
[17] Equals [15] / [16]
[18] Equals [12] x [17]
[19] Equals 1 - (1 / [17])
[20] Equals [18] x [19]
[21] Equals [9] + [20]

30-DAY CONSTANT GROWTH DCF -- PSNH PROXY GROUP																
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	All Proxy Group [11]			[13]	With Exclusions [14]	
					Expected	Value Line	Yahoo!	Zacks	Retention	Average						
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Dividend Yield	Earnings Growth	Finance Earnings Growth	Earnings Growth	Growth Rate	Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.47	\$55.35	4.46%	4.58%	5.50%	7.00%	NA%	2.80%	5.10%	7.32%	9.68%	11.62%	7.32%	9.68%	11.62%
Alliant Energy Corporation	LNT	\$1.52	\$48.09	3.16%	3.25%	6.50%	5.65%	5.50%	4.43%	5.52%	7.66%	8.77%	9.76%	7.66%	8.77%	9.76%
Avangrid, Inc.	AGR	\$1.76	\$42.61	4.13%	4.23%	6.00%	6.30%	5.50%	1.14%	4.74%	5.30%	8.96%	10.56%		8.96%	10.56%
FirstEnergy Corporation	FE	\$1.56	\$41.53	3.76%	3.90%	8.50%	Negative	NA%	7.20%	7.85%	11.09%	11.75%	12.42%	11.09%	11.75%	12.42%
Hawaiian Electric Industries, Inc.	HE	\$1.32	\$38.46	3.43%	3.48%	3.50%	3.30%	1.70%	3.48%	3.00%	5.16%	6.48%	6.99%			
NorthWestern Corporation	NWE	\$2.40	\$57.75	4.16%	4.22%	2.50%	3.66%	3.40%	3.21%	3.19%	6.71%	7.42%	7.89%		7.42%	7.89%
Portland General Electric Company	POR	\$1.54	\$45.18	3.41%	3.48%	4.00%	4.15%	5.30%	3.11%	4.14%	6.57%	7.62%	8.80%		7.62%	8.80%
PPL Corporation	PPL	\$1.66	\$25.55	6.50%	6.58%	2.50%	0.50%	NA%	4.45%	2.48%	7.01%	9.06%	11.09%	7.01%	9.06%	11.09%
Mean				4.13%	4.21%	4.88%	4.37%	4.28%	3.73%	4.50%	7.10%	8.72%	9.89%	8.27%	9.04%	10.31%

Notes:

- [1] Source: Bloomberg Professional.
[2] Source: Bloomberg Professional, equals 30-day average as of May 29, 2020
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [9])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Source: Attachment AEB-Supplemental-3
[9] Equals Average ([5], [6], [7], [8])
[10] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7], [8]) + Minimum ([5], [6], [7], [8])
[11] Equals [4] + [9]
[12] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7], [8]) + Maximum ([5], [6], [7], [8])
[13] Equals [10] if greater than 7.00%
[14] Equals [11] if greater than 7.00%
[15] Equals [12] if greater than 7.00%

90-DAY CONSTANT GROWTH DCF -- PSNH PROXY GROUP																		
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	All Proxy Group [11]			[12]	[13]	With Exclusions [14]		[15]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Retention Growth Rate	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE		
ALLETE, Inc.	ALE	\$2.47	\$65.91	3.75%	3.84%	5.50%	7.00%	NA%	2.80%	5.10%	6.60%	8.94%	10.88%		8.94%	10.88%		
Alliant Energy Corporation	LNT	\$1.52	\$51.84	2.93%	3.01%	6.50%	5.65%	5.50%	4.43%	5.52%	7.42%	8.53%	9.53%	7.42%	8.53%	9.53%		
Avangrid, Inc.	AGR	\$1.76	\$46.81	3.76%	3.85%	6.00%	6.30%	5.50%	1.14%	4.74%	4.93%	8.58%	10.18%		8.58%	10.18%		
FirstEnergy Corporation	FE	\$1.56	\$44.08	3.54%	3.68%	8.50%	Negative	NA%	7.20%	7.85%	10.87%	11.53%	12.19%	10.87%	11.53%	12.19%		
Hawaiian Electric Industries, Inc.	HE	\$1.32	\$43.16	3.06%	3.10%	3.50%	3.30%	1.70%	3.48%	3.00%	4.78%	6.10%	6.61%					
NorthWestern Corporation	NWE	\$2.40	\$65.27	3.68%	3.74%	2.50%	3.66%	3.40%	3.21%	3.19%	6.22%	6.93%	7.40%			7.40%		
Portland General Electric Company	POR	\$1.54	\$51.56	2.99%	3.05%	4.00%	4.15%	5.30%	3.11%	4.14%	6.14%	7.19%	8.37%		7.19%	8.37%		
PPL Corporation	PPL	\$1.66	\$28.59	5.81%	5.88%	2.50%	0.50%	NA%	4.45%	2.48%	6.32%	8.36%	10.39%		8.36%	10.39%		
Mean				3.69%	3.77%	4.88%	4.37%	4.28%	3.73%	4.50%	6.66%	8.27%	9.44%	9.15%	8.86%	9.85%		

Notes:

[1] Source: Bloomberg Professional.
[2] Source: Bloomberg Professional, equals 90-day average as of May 29, 2020
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [9])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Source: Attachment AEB-Supplemental-3
[9] Equals Average ([5], [6], [7], [8])
[10] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7], [8]) + Minimum ([5], [6], [7], [8])
[11] Equals [4] + [9]
[12] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7], [8]) + Maximum ([5], [6], [7], [8])
[13] Equals [10] if greater than 7.00%
[14] Equals [11] if greater than 7.00%
[15] Equals [12] if greater than 7.00%

180-DAY CONSTANT GROWTH DCF -- PSNH PROXY GROUP																	
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	All Proxy Group [11]			[12]	[13]	With Exclusions [14]	
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Retention Growth Rate	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE	
ALLETE, Inc.	ALE	\$2.47	\$74.56	3.31%	3.40%	5.50%	7.00%	NA%	2.80%	5.10%	6.16%	8.50%	10.43%		8.50%	10.43%	
Alliant Energy Corporation	LNT	\$1.52	\$52.63	2.89%	2.97%	6.50%	5.65%	5.50%	4.43%	5.52%	7.38%	8.49%	9.48%	7.38%	8.49%	9.48%	
Avangrid, Inc.	AGR	\$1.76	\$48.50	3.63%	3.71%	6.00%	6.30%	5.50%	1.14%	4.74%	4.79%	8.45%	10.04%		8.45%	10.04%	
FirstEnergy Corporation	FE	\$1.56	\$45.97	3.39%	3.53%	8.50%	Negative	NA%	7.20%	7.85%	10.72%	11.38%	12.04%	10.72%	11.38%	12.04%	
Hawaiian Electric Industries, Inc.	HE	\$1.32	\$44.09	2.99%	3.04%	3.50%	3.30%	1.70%	3.48%	3.00%	4.72%	6.03%	6.55%				
NorthWestern Corporation	NWE	\$2.40	\$68.84	3.49%	3.54%	2.50%	3.66%	3.40%	3.21%	3.19%	6.03%	6.73%	7.21%			7.21%	
Portland General Electric Company	POR	\$1.54	\$53.79	2.86%	2.92%	4.00%	4.15%	5.30%	3.11%	4.14%	6.02%	7.06%	8.24%		7.06%	8.24%	
PPL Corporation	PPL	\$1.66	\$31.05	5.35%	5.41%	2.50%	0.50%	NA%	4.45%	2.48%	5.86%	7.90%	9.92%		7.90%	9.92%	
Mean				3.49%	3.57%	4.88%	4.37%	4.28%	3.73%	4.50%	6.46%	8.07%	9.24%	9.05%	8.63%	9.62%	

Notes:

- [1] Source: Bloomberg Professional.
[2] Source: Bloomberg Professional, equals 180-day average as of May 29, 2020
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [9])
[5] Source: Value Line
[6] Source: Yahoo! Finance
[7] Source: Zacks
[8] Source: Attachment AEB-Supplemental-3
[9] Equals Average ([5], [6], [7], [8])
[10] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7], [8]) + Minimum ([5], [6], [7], [8])
[11] Equals [4] + [9]
[12] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7], [8]) + Maximum ([5], [6], [7], [8])
[13] Equals [10] if greater than 7.00%
[14] Equals [11] if greater than 7.00%
[15] Equals [12] if greater than 7.00%

BETA
AS OF MAY 29, 2020

		[1]	[2]
Proxy Group		Bloomberg	Value Line
ALLETE, Inc.	ALE	0.82	0.60
Alliant Energy Corporation	LNT	0.81	0.55
Avangrid, Inc.	AGR	0.73	0.80
FirstEnergy Corporation	FE	0.80	0.85
Hawaiian Electric Industries, Inc.	HE	0.71	0.55
NorthWestern Corporation	NWE	0.90	0.55
Portland General Electric Company	POR	0.82	0.55
PPL Corporation	PPL	0.89	1.05
Mean		0.809	0.688

Notes:

[1] Source: Bloomberg Professional, May 29, 2020

[2] Source: Value Line; March 13, 2020; April 24, 2020; May 15, 2020

CAPITAL ASSET PRICING MODEL

	[4]	[5]	[6]	[7]	[8]
	Risk-Free Rate (<i>R_f</i>)	Beta (<i>β</i>)	Market Return (<i>R_m</i>)	Market Risk Premium (<i>R_m - R_f</i>)	ROE (<i>K</i>)
Proxy Group Average Bloomberg Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	1.33%	0.809	13.28%	11.95%	11.00%
Near-term projected 30-year U.S. Treasury bond yield (Q3 2020 - Q3 2021) [2]	1.68%	0.809	13.28%	11.60%	11.06%
Projected 30-year U.S. Treasury bond yield (2022 - 2026) [3]	3.00%	0.809	13.28%	10.28%	11.32%
				MEAN	11.13%
Proxy Group Average Value Line Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	1.33%	0.688	13.28%	11.95%	9.54%
Near-term projected 30-year U.S. Treasury bond yield (Q3 2020 - Q3 2021) [2]	1.68%	0.688	13.28%	11.60%	9.65%
Projected 30-year U.S. Treasury bond yield (2022 - 2026) [3]	3.00%	0.688	13.28%	10.28%	10.07%
				MEAN	9.75%

Notes:

- [1] Source: Bloomberg Professional, 30-day average as of May 29, 2020
[2] Source: Blue Chip Financial Forecasts, Vol. 39, No. 6, June 1, 2020, at 2
[3] Source: Blue Chip Financial Forecasts, Vol. 39, No. 6, June 1, 2020, at 14
[4] See Notes [1], [2] and [3]
[5] Source: Attachment AEB-Supplemental-5
[6] Source: Attachment AEB-Supplemental-6, at 2
[7] Equals [6] - [4]
[8] Equals [4] + ([5] x [7])

MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH ESTIMATES

[9] Estimated Weighted Average Dividend Yield	1.86%
[10] Estimated Weighted Average Long-Term Growth Rate	11.32%
[11] S&P 500 Estimated Required Market Return	13.28%
[12] Risk-Free Rate	1.33% 1.68% 3.00%
[13] Implied Market Risk Premium	11.95% 11.60% 10.28%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[14]	[15]	[16]	[17]	[18]
		Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	0.08%	6.40%	0.01%	5.50%	0.00%
American Express Co	AXP	0.30%	1.77%	0.01%	7.04%	0.02%
Verizon Communications Inc	VZ	0.89%	4.40%	0.04%	2.63%	0.02%
Broadcom Inc	AVGO	0.44%	4.48%	0.02%	9.05%	0.04%
Boeing Co/The	BA	0.33%	n/a	n/a	118.28%	0.39%
Caterpillar Inc	CAT	0.25%	3.41%	0.01%	4.25%	0.01%
JPMorgan Chase & Co	JPM	1.15%	3.65%	0.04%	5.70%	0.07%
Chevron Corp	CVX	0.66%	5.54%	0.04%	38.90%	0.26%
Coca-Cola Co/The	KO	0.77%	3.48%	0.03%	2.76%	0.02%
AbbVie Inc	ABBV	0.62%	5.17%	0.03%	3.12%	0.02%
Walt Disney Co/The	DIS	0.82%	n/a	n/a	19.55%	0.16%
FleetCor Technologies Inc	FLT	0.08%	n/a	n/a	13.02%	0.01%
Extra Space Storage Inc	EXR	0.05%	3.65%	0.00%	1.54%	0.00%
Exxon Mobil Corp	XOM	0.75%	7.51%	0.06%	16.84%	0.13%
Phillips 66	PSX	0.13%	4.58%	0.01%	5.22%	0.01%
General Electric Co	GE	0.22%	0.60%	0.00%	6.07%	0.01%
HP Inc	HPQ	0.08%	4.60%	0.00%	4.77%	0.00%
Home Depot Inc/The	HD	1.02%	2.43%	0.02%	9.12%	0.09%
International Business Machines Corp	IBM	0.43%	5.21%	0.02%	2.67%	0.01%
Concho Resources Inc	CXO	0.04%	1.42%	0.00%	12.60%	0.01%
Johnson & Johnson	JNJ	1.48%	2.75%	0.04%	5.47%	0.08%
McDonald's Corp	MCD	0.53%	2.67%	0.01%	6.95%	0.04%
Merck & Co Inc	MRK	0.77%	3.06%	0.02%	8.23%	0.06%
3M Co	MMM	0.34%	3.76%	0.01%	7.05%	0.02%
American Water Works Co Inc	AWK	0.09%	1.71%	0.00%	8.19%	0.01%
Bank of America Corp	BAC	0.82%	2.93%	0.02%	9.25%	0.08%
Baker Hughes Co	BKR	0.04%	4.41%	0.00%	17.77%	0.01%
Pfizer Inc	PFE	0.76%	4.27%	0.03%	4.70%	0.04%
Procter & Gamble Co/The	PG	1.11%	2.70%	0.03%	7.11%	0.08%
AT&T Inc	T	0.84%	6.71%	0.06%	4.48%	0.04%
Noble Energy Inc	NBL	0.02%	0.86%	0.00%	9.49%	0.00%
Travelers Cos Inc/The	TRV	0.11%	3.12%	0.00%	10.30%	0.01%
Raytheon Technologies Corp	RTX	0.37%	2.95%	0.01%	-4.34%	-0.02%
Analog Devices Inc	ADI	0.16%	2.20%	0.00%	12.13%	0.02%
Walmart Inc	WMT	1.34%	1.75%	0.02%	4.98%	0.07%
Cisco Systems Inc	CSCO	0.75%	3.09%	0.02%	5.38%	0.04%
Intel Corp	INTC	1.00%	2.14%	0.02%	5.93%	0.06%
General Motors Co	GM	0.15%	n/a	n/a	13.21%	0.02%
Microsoft Corp	MSFT	5.29%	1.12%	0.06%	13.74%	0.73%
Dollar General Corp	DG	0.19%	0.75%	0.00%	11.50%	0.02%
Cigna Corp	CI	0.28%	0.02%	0.00%	11.09%	0.03%
Kinder Morgan Inc	KMI	0.14%	6.68%	0.01%	4.55%	0.01%
Citigroup Inc	C	0.39%	4.14%	0.02%	-1.53%	-0.01%
American International Group Inc	AIG	0.10%	4.20%	0.00%	15.35%	0.02%
Honeywell International Inc	HON	0.39%	2.46%	0.01%	7.17%	0.03%
Altria Group Inc	MO	0.28%	8.56%	0.02%	6.05%	0.02%
HCA Healthcare Inc	HCA	0.14%	n/a	n/a	8.66%	0.01%
Under Armour Inc	UA	0.01%	n/a	n/a	18.10%	0.00%
International Paper Co	IP	0.05%	5.89%	0.00%	4.40%	0.00%
Hewlett Packard Enterprise Co	HPE	0.05%	4.89%	0.00%	1.92%	0.00%
Abbott Laboratories	ABT	0.63%	1.54%	0.01%	8.10%	0.05%
Aflac Inc	AFL	0.10%	3.03%	0.00%	0.11%	0.00%
Air Products and Chemicals Inc	APD	0.21%	2.19%	0.00%	11.98%	0.02%
Royal Caribbean Cruises Ltd	RCL	0.04%	n/a	n/a	-48.40%	-0.02%
American Electric Power Co Inc	AEP	0.16%	3.24%	0.01%	6.68%	0.01%
Hess Corp	HES	0.06%	2.06%	0.00%	-23.46%	-0.01%
Apache Corp	APA	0.02%	0.85%	0.00%	-18.00%	0.00%
Archer-Daniels-Midland Co	ADM	0.08%	3.70%	0.00%	9.10%	0.01%
Automatic Data Processing Inc	ADP	0.24%	2.50%	0.01%	12.30%	0.03%
Verisk Analytics Inc	VRSK	0.11%	0.63%	0.00%	9.18%	0.01%
AutoZone Inc	AZO	0.10%	n/a	n/a	8.43%	0.01%
Avery Dennison Corp	AVY	0.04%	2.06%	0.00%	4.50%	0.00%
MSCI Inc	MSCI	0.11%	0.81%	0.00%	11.75%	0.01%
Ball Corp	BL	0.09%	0.84%	0.00%	6.07%	0.01%
Carrier Global Corp	CARR	0.00%	n/a	n/a	n/a	n/a
Bank of New York Mellon Corp/The	BK	0.13%	3.27%	0.00%	4.43%	0.01%
Otis Worldwide Corp	OTIS	0.09%	1.48%	0.00%	4.80%	0.00%
Baxter International Inc	BAX	0.18%	1.08%	0.00%	12.00%	0.02%
Becton Dickinson and Co	BDX	0.27%	1.28%	0.00%	8.32%	0.02%
Berkshire Hathaway Inc	BRK/B	0.98%	n/a	n/a	-3.10%	-0.03%
Best Buy Co Inc	BBY	0.08%	2.85%	0.00%	4.46%	0.00%
H&R Block Inc	HRB	0.01%	5.92%	0.00%	10.00%	0.00%
Boston Scientific Corp	BSX	0.21%	n/a	n/a	9.75%	0.02%
Bristol-Myers Squibb Co	BMJ	0.52%	2.99%	0.02%	11.35%	0.06%
Fortune Brands Home & Security Inc	FBHS	0.03%	1.56%	0.00%	6.39%	0.00%
Brown-Forman Corp	BF/B	0.08%	1.06%	0.00%	4.38%	0.00%
Cabot Oil & Gas Corp	COG	0.03%	2.03%	0.00%	23.75%	0.01%

STANDARD AND POOR'S 500 INDEX

		[14]	[15]	[16]	[17]	[18]
Name	Ticker	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Campbell Soup Co	CPB	0.06%	2.72%	0.00%	7.92%	0.00%
Kansas City Southern	KSU	0.05%	1.07%	0.00%	11.75%	0.01%
Hilton Worldwide Holdings Inc	HLT	0.09%	n/a	n/a	1.28%	0.00%
Carnival Corp	CCL	0.04%	n/a	n/a	-2.50%	0.00%
Qorvo Inc	QRVO	0.05%	n/a	n/a	11.91%	0.01%
CenturyLink Inc	CTL	0.04%	9.80%	0.00%	-1.33%	0.00%
UDR Inc	UDR	0.04%	3.79%	0.00%	6.13%	0.00%
Clorox Co/The	CLX	0.10%	2.16%	0.00%	5.12%	0.01%
Paycom Software Inc	PAYC	0.07%	n/a	n/a	19.70%	0.01%
CMS Energy Corp	CMS	0.07%	2.74%	0.00%	6.87%	0.00%
Newell Brands Inc	NWL	0.02%	6.87%	0.00%	-6.04%	0.00%
Colgate-Palmolive Co	CL	0.24%	2.41%	0.01%	4.61%	0.01%
Comerica Inc	CMA	0.02%	7.26%	0.00%	-0.20%	0.00%
IPG Photonics Corp	IPGP	0.00%	n/a	n/a	n/a	n/a
Conagra Brands Inc	CAG	0.06%	2.44%	0.00%	7.35%	0.00%
Consolidated Edison Inc	ED	0.10%	4.05%	0.00%	3.62%	0.00%
SL Green Realty Corp	SLG	0.01%	8.04%	0.00%	4.34%	0.00%
Corning Inc	GLW	0.07%	3.85%	0.00%	4.13%	0.00%
Cummins Inc	CMI	0.10%	3.07%	0.00%	3.26%	0.00%
Danaher Corp	DHR	0.45%	0.43%	0.00%	8.52%	0.04%
Target Corp	TGT	0.23%	2.22%	0.01%	8.43%	0.02%
Deere & Co	DE	0.18%	2.04%	0.00%	0.41%	0.00%
Dominion Energy Inc	D	0.28%	4.35%	0.01%	5.00%	0.01%
Dover Corp	DOV	0.05%	2.01%	0.00%	10.30%	0.01%
Alliant Energy Corp	LNT	0.05%	3.06%	0.00%	5.46%	0.00%
Duke Energy Corp	DUK	0.25%	4.33%	0.01%	4.60%	0.01%
Regency Centers Corp	REG	0.03%	5.24%	0.00%	5.68%	0.00%
Eaton Corp PLC	ETN	0.13%	3.44%	0.00%	9.03%	0.01%
Ecolab Inc	ECL	0.23%	0.89%	0.00%	6.90%	0.02%
PerkinElmer Inc	PKI	0.04%	0.28%	0.00%	7.18%	0.00%
Emerson Electric Co	EMR	0.14%	3.31%	0.00%	6.51%	0.01%
EOG Resources Inc	EOG	0.12%	2.90%	0.00%	-1.12%	0.00%
Aon PLC	AON	0.17%	0.89%	0.00%	11.05%	0.02%
Entergy Corp	ETR	0.08%	3.59%	0.00%	5.17%	0.00%
Equifax Inc	EFX	0.07%	1.01%	0.00%	7.41%	0.01%
IQVIA Holdings Inc	IQV	0.11%	n/a	n/a	11.20%	0.01%
Gartner Inc	IT	0.04%	n/a	n/a	12.50%	0.01%
FedEx Corp	FDX	0.13%	2.01%	0.00%	14.06%	0.02%
FMC Corp	FMC	0.05%	1.77%	0.00%	9.73%	0.00%
Ford Motor Co	F	0.09%	n/a	n/a	13.51%	0.01%
NextEra Energy Inc	NEE	0.48%	2.17%	0.01%	8.39%	0.04%
Franklin Resources Inc	BEN	0.04%	5.50%	0.00%	-6.79%	0.00%
Freeport-McMoRan Inc	FCX	0.05%	n/a	n/a	136.19%	0.07%
Gap Inc/The	GPS	0.01%	9.78%	0.00%	6.37%	0.00%
DexCom Inc	DXCM	0.13%	n/a	n/a	30.99%	0.04%
General Dynamics Corp	GD	0.16%	2.98%	0.00%	4.58%	0.01%
General Mills Inc	GIS	0.15%	3.07%	0.00%	5.87%	0.01%
Genuine Parts Co	GPC	0.05%	3.72%	0.00%	4.70%	0.00%
Atmos Energy Corp	ATO	0.05%	2.22%	0.00%	7.34%	0.00%
VW Grainger Inc	GWV	0.06%	1.88%	0.00%	9.47%	0.01%
Halliburton Co	HAL	0.04%	1.49%	0.00%	12.95%	0.01%
Harley-Davidson Inc	HOG	0.01%	0.35%	0.00%	2.10%	0.00%
L3Harris Technologies Inc	LHX	0.16%	1.73%	0.00%	16.64%	0.03%
Healthpeak Properties Inc	PEAK	0.05%	5.78%	0.00%	4.10%	0.00%
Fortive Corp	FTV	0.08%	0.45%	0.00%	8.67%	0.01%
Hershey Co/The	HSY	0.08%	2.26%	0.00%	6.83%	0.01%
Synchrony Financial	SYF	0.05%	4.21%	0.00%	-3.52%	0.00%
Hormel Foods Corp	HRL	0.10%	1.89%	0.00%	3.89%	0.00%
Arthur J Gallagher & Co	AJG	0.07%	1.90%	0.00%	7.76%	0.01%
Mondelez International Inc	MDLZ	0.29%	2.17%	0.01%	7.75%	0.02%
CenterPoint Energy Inc	CNP	0.03%	3.32%	0.00%	-1.62%	0.00%
Humana Inc	HUM	0.20%	0.62%	0.00%	11.56%	0.02%
Willis Towers Watson PLC	WLTW	0.10%	1.34%	0.00%	10.00%	0.01%
Illinois Tool Works Inc	ITW	0.21%	2.49%	0.01%	5.27%	0.01%
CDW Corp/DE	CDW	0.06%	1.35%	0.00%	13.10%	0.01%
Trane Technologies PLC	TT	0.08%	2.33%	0.00%	3.16%	0.00%
Interpublic Group of Cos Inc/The	IPG	0.03%	5.84%	0.00%	0.19%	0.00%
International Flavors & Fragrances Inc	IFF	0.05%	2.27%	0.00%	7.30%	0.00%
Jacobs Engineering Group Inc	J	0.04%	0.89%	0.00%	7.25%	0.00%
Hanesbrands Inc	HBI	0.01%	5.83%	0.00%	0.84%	0.00%
Kellogg Co	K	0.09%	3.44%	0.00%	2.48%	0.00%
Broadridge Financial Solutions Inc	BR	0.05%	1.77%	0.00%	6.50%	0.00%
Perrigo Co PLC	PRGO	0.03%	1.62%	0.00%	2.00%	0.00%
Kimberly-Clark Corp	KMB	0.19%	3.01%	0.01%	4.36%	0.01%
Kimco Realty Corp	KIM	0.02%	n/a	n/a	4.10%	0.00%
Kohl's Corp	KSS	0.01%	n/a	n/a	4.83%	0.00%
Oracle Corp	ORCL	0.64%	1.80%	0.01%	10.33%	0.07%
Kroger Co/The	KR	0.10%	1.96%	0.00%	5.25%	0.01%
Leggett & Platt Inc	LEG	0.00%	5.03%	0.00%	n/a	n/a
Lennar Corp	LEN	0.06%	0.83%	0.00%	8.60%	0.01%
Eli Lilly and Co	LLY	0.56%	1.93%	0.01%	13.97%	0.08%
L Brands Inc	LB	0.02%	n/a	n/a	11.50%	0.00%
Charter Communications Inc	CHTR	0.43%	n/a	n/a	42.98%	0.19%
Lincoln National Corp	LNC	0.03%	4.12%	0.00%	9.00%	0.00%
Loews Corp	L	0.00%	0.74%	0.00%	n/a	n/a
Lowe's Cos Inc	LOW	0.37%	1.70%	0.01%	16.45%	0.06%
Host Hotels & Resorts Inc	HST	0.03%	6.48%	0.00%	-2.30%	0.00%
Xerox Holdings Corp	XRX	0.01%	5.92%	0.00%	0.50%	0.00%
IDEX Corp	IEX	0.05%	1.27%	0.00%	11.33%	0.01%
Marsh & McLennan Cos Inc	MMC	0.21%	1.70%	0.00%	9.60%	0.02%
Masco Corp	MAS	0.05%	1.16%	0.00%	9.56%	0.00%

STANDARD AND POOR'S 500 INDEX

		[14]	[15]	[16]	[17]	[18]
Name	Ticker	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
S&P Global Inc	SPGI	0.30%	0.81%	0.00%	8.90%	0.03%
Medtronic PLC	MDT	0.50%	2.36%	0.01%	6.80%	0.03%
CVS Health Corp	CVS	0.33%	3.04%	0.01%	7.36%	0.02%
DuPont de Nemours Inc	DD	0.14%	2.35%	0.00%	1.96%	0.00%
Micron Technology Inc	MU	0.20%	n/a	n/a	6.95%	0.01%
Motorola Solutions Inc	MSI	0.09%	1.83%	0.00%	8.85%	0.01%
Cboe Global Markets Inc	CBOE	0.04%	1.35%	0.00%	6.30%	0.00%
Mylan NV	MYL	0.04%	n/a	n/a	1.73%	0.00%
Laboratory Corp of America Holdings	LH	0.07%	n/a	n/a	4.89%	0.00%
Newmont Corp	NEM	0.18%	1.66%	0.00%	12.75%	0.02%
NIKE Inc	NKE	0.47%	0.98%	0.00%	11.12%	0.05%
NiSource Inc	NI	0.04%	3.45%	0.00%	4.62%	0.00%
Norfolk Southern Corp	NSC	0.18%	2.10%	0.00%	5.98%	0.01%
Principal Financial Group Inc	PFG	0.04%	5.69%	0.00%	0.63%	0.00%
Eversource Energy	ES	0.11%	2.64%	0.00%	6.64%	0.01%
Northrop Grumman Corp	NOC	0.21%	1.73%	0.00%	18.99%	0.04%
Wells Fargo & Co	WFC	0.42%	7.54%	0.03%	9.41%	0.04%
Nucor Corp	NUE	0.05%	3.77%	0.00%	5.25%	0.00%
PVH Corp	PVH	0.01%	n/a	n/a	2.90%	0.00%
Occidental Petroleum Corp	OXY	0.05%	0.29%	0.00%	12.20%	0.01%
Omnicom Group Inc	OMC	0.05%	4.67%	0.00%	0.90%	0.00%
ONEOK Inc	OKE	0.06%	9.88%	0.01%	6.38%	0.00%
Raymond James Financial Inc	RJF	0.04%	2.08%	0.00%	3.50%	0.00%
Parker-Hannifin Corp	PH	0.09%	1.92%	0.00%	9.49%	0.01%
Rollins Inc	ROL	0.00%	0.75%	0.00%	n/a	n/a
PPL Corp	PPL	0.08%	5.80%	0.00%	-0.37%	0.00%
ConocoPhillips	COP	0.00%	3.86%	0.00%	n/a	n/a
PulteGroup Inc	PHM	0.04%	1.40%	0.00%	6.49%	0.00%
Pinnacle West Capital Corp	PNW	0.03%	4.01%	0.00%	4.90%	0.00%
PNC Financial Services Group Inc/The	PNC	0.19%	4.00%	0.01%	-5.84%	-0.01%
PPG Industries Inc	PPG	0.09%	1.98%	0.00%	1.76%	0.00%
Progressive Corp/The	PGR	0.18%	0.51%	0.00%	6.00%	0.01%
Public Service Enterprise Group Inc	PEG	0.10%	3.73%	0.00%	4.43%	0.00%
Robert Half International Inc	RHI	0.02%	2.61%	0.00%	0.29%	0.00%
Edison International	EIX	0.09%	4.28%	0.00%	4.54%	0.00%
Schlumberger Ltd	SLB	0.10%	2.68%	0.00%	36.00%	0.04%
Charles Schwab Corp/The	SCHW	0.18%	1.98%	0.00%	4.50%	0.01%
Sherwin-Williams Co/The	SHW	0.20%	0.91%	0.00%	8.85%	0.02%
West Pharmaceutical Services Inc	WST	0.06%	0.30%	0.00%	9.60%	0.01%
JM Smucker Co/The	SJM	0.05%	3.02%	0.00%	1.62%	0.00%
Snap-on Inc	SNA	0.03%	3.30%	0.00%	4.06%	0.00%
AMETEK Inc	AME	0.08%	0.78%	0.00%	9.16%	0.01%
Southern Co/The	SO	0.23%	4.41%	0.01%	4.30%	0.01%
Truist Financial Corp	TFC	0.20%	4.71%	0.01%	2.10%	0.00%
Southwest Airlines Co	LUV	0.08%	n/a	n/a	-0.20%	0.00%
WR Berkley Corp	WRB	0.04%	0.76%	0.00%	12.40%	0.00%
Stanley Black & Decker Inc	SWK	0.07%	2.21%	0.00%	11.00%	0.01%
Public Storage	PSA	0.14%	3.89%	0.01%	3.74%	0.01%
Arista Networks Inc	ANET	0.07%	n/a	n/a	16.04%	0.01%
Sysco Corp	SY	0.11%	3.14%	0.00%	3.80%	0.00%
Corteva Inc	CTVA	0.08%	1.94%	0.00%	9.69%	0.01%
Texas Instruments Inc	TXN	0.41%	3.05%	0.01%	10.70%	0.04%
Textron Inc	TXT	0.03%	0.25%	0.00%	2.83%	0.00%
Thermo Fisher Scientific Inc	TMO	0.53%	0.25%	0.00%	8.30%	0.04%
Tiffany & Co	TIF	0.00%	1.81%	0.00%	n/a	n/a
TJX Cos Inc/The	TJX	0.24%	n/a	n/a	7.55%	0.02%
Globe Life Inc	GL	0.03%	0.94%	0.00%	4.90%	0.00%
Johnson Controls International plc	JCI	0.09%	3.28%	0.00%	9.10%	0.01%
Ulta Beauty Inc	ULTA	0.05%	n/a	n/a	15.68%	0.01%
Union Pacific Corp	UNP	0.44%	2.29%	0.01%	9.50%	0.04%
Keysight Technologies Inc	KEYS	0.08%	n/a	n/a	13.92%	0.01%
UnitedHealth Group Inc	UNH	1.10%	1.42%	0.02%	12.40%	0.14%
Unum Group	UNM	0.01%	7.16%	0.00%	9.00%	0.00%
Marathon Oil Corp	MRO	0.02%	n/a	n/a	-3.25%	0.00%
Varian Medical Systems Inc	VAR	0.04%	n/a	n/a	8.40%	0.00%
Ventas Inc	VTR	0.05%	8.82%	0.00%	-0.28%	0.00%
VF Corp	VFC	0.09%	3.32%	0.00%	8.80%	0.01%
Vornado Realty Trust	VNO	0.03%	6.93%	0.00%	4.66%	0.00%
Vulcan Materials Co	VMC	0.05%	1.26%	0.00%	14.00%	0.01%
Weyerhaeuser Co	WY	0.00%	n/a	n/a	n/a	n/a
Whirlpool Corp	WHR	0.03%	3.88%	0.00%	-3.07%	0.00%
Williams Cos Inc/The	WMB	0.10%	7.80%	0.01%	7.58%	0.01%
WEC Energy Group Inc	WEC	0.11%	2.70%	0.00%	6.46%	0.01%
Adobe Inc	ADBE	0.72%	n/a	n/a	18.00%	0.13%
AES Corp/The	AES	0.03%	4.54%	0.00%	6.99%	0.00%
Amgen Inc	AMGN	0.51%	2.81%	0.01%	8.56%	0.04%
Apple Inc	AAPL	5.34%	1.02%	0.05%	11.05%	0.59%
Autodesk Inc	ADSK	0.18%	n/a	n/a	31.35%	0.06%
Cintas Corp	CTAS	0.10%	1.01%	0.00%	12.00%	0.01%
Comcast Corp	CMCSA	0.70%	2.30%	0.02%	4.10%	0.03%
Molson Coors Beverage Co	TAP	0.03%	n/a	n/a	0.10%	0.00%
KLA Corp	KLAC	0.11%	1.92%	0.00%	10.58%	0.01%
Marriott International Inc/MD	MAR	0.12%	n/a	n/a	-1.62%	0.00%
McCormick & Co Inc/MD	MKC	0.08%	1.40%	0.00%	9.17%	0.01%
Nordstrom Inc	JWN	0.01%	n/a	n/a	6.00%	0.00%
PACCAR Inc	PCAR	0.10%	1.74%	0.00%	4.53%	0.00%
Costco Wholesale Corp	COST	0.52%	0.91%	0.00%	7.48%	0.04%
First Republic Bank/CA	FRC	0.07%	0.73%	0.00%	6.49%	0.00%
Stryker Corp	SYK	0.28%	1.16%	0.00%	8.10%	0.02%
Tyson Foods Inc	TSN	0.07%	2.68%	0.00%	2.78%	0.00%
Lamb Weston Holdings Inc	LW	0.03%	1.48%	0.00%	-1.85%	0.00%

STANDARD AND POOR'S 500 INDEX

		[14]	[15]	[16]	[17]	[18]
Name	Ticker	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Applied Materials Inc	AMAT	0.19%	1.58%	0.00%	15.32%	0.03%
American Airlines Group Inc	AAL	0.02%	n/a	n/a	-15.06%	0.00%
Cardinal Health Inc	CAH	0.06%	3.54%	0.00%	4.84%	0.00%
Cerner Corp	CERN	0.08%	0.99%	0.00%	11.91%	0.01%
Cincinnati Financial Corp	CINF	0.00%	4.01%	0.00%	n/a	n/a
ViacomCBS Inc	VIAC	0.05%	4.47%	0.00%	4.79%	0.00%
DR Horton Inc	DHI	0.08%	1.27%	0.00%	10.55%	0.01%
Flowserve Corp	FLS	0.01%	2.94%	0.00%	3.00%	0.00%
Electronic Arts Inc	EA	0.14%	n/a	n/a	8.09%	0.01%
Expeditors International of Washington Inc	EXPD	0.05%	1.38%	0.00%	9.25%	0.00%
Fastenal Co	FAST	0.09%	2.45%	0.00%	13.85%	0.01%
M&T Bank Corp	MTB	0.05%	4.06%	0.00%	0.41%	0.00%
Xcel Energy Inc	XEL	0.13%	2.60%	0.00%	5.89%	0.01%
Fiserv Inc	FISV	0.28%	n/a	n/a	13.89%	0.04%
Fifth Third Bancorp	FITB	0.05%	5.45%	0.00%	9.77%	0.01%
Gilead Sciences Inc	GILD	0.36%	3.59%	0.01%	-0.74%	0.00%
Hasbro Inc	HAS	0.04%	3.74%	0.00%	14.34%	0.01%
Huntington Bancshares Inc/OH	HBAN	0.04%	6.60%	0.00%	-9.27%	0.00%
Welltower Inc	WELL	0.08%	4.59%	0.00%	-1.18%	0.00%
Biogen Inc	BIIB	0.19%	n/a	n/a	1.98%	0.00%
Northern Trust Corp	NTRS	0.06%	3.45%	0.00%	7.55%	0.00%
Packaging Corp of America	PKG	0.04%	3.08%	0.00%	10.00%	0.00%
Paychex Inc	PAYX	0.10%	3.42%	0.00%	6.55%	0.01%
People's United Financial Inc	PBCT	0.02%	6.14%	0.00%	2.00%	0.00%
QUALCOMM Inc	QCOM	0.34%	3.25%	0.01%	17.10%	0.06%
Roper Technologies Inc	ROP	0.16%	0.52%	0.00%	12.33%	0.02%
Ross Stores Inc	ROST	0.13%	n/a	n/a	8.90%	0.01%
IDEXX Laboratories Inc	IDXX	0.10%	n/a	n/a	9.41%	0.01%
Starbucks Corp	SBUX	0.35%	2.09%	0.01%	13.16%	0.05%
KeyCorp	KEY	0.04%	6.24%	0.00%	3.36%	0.00%
Fox Corp	FOXA	0.04%	1.55%	0.00%	-3.73%	0.00%
Fox Corp	FOX	0.03%	1.57%	0.00%	-3.73%	0.00%
State Street Corp	STT	0.08%	3.33%	0.00%	8.95%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	0.02%	n/a	n/a	-16.58%	0.00%
US Bancorp	USB	0.21%	4.59%	0.01%	6.43%	0.01%
AO Smith Corp	AOS	0.02%	2.03%	0.00%	8.00%	0.00%
NortonLifeLock Inc	NLOK	0.05%	2.30%	0.00%	7.50%	0.00%
T Rowe Price Group Inc	TROW	0.11%	2.93%	0.00%	0.76%	0.00%
Waste Management Inc	WM	0.17%	2.04%	0.00%	4.61%	0.01%
Constellation Brands Inc	STZ	0.11%	1.73%	0.00%	1.82%	0.00%
Xilinx Inc	XLNX	0.08%	1.67%	0.00%	8.20%	0.01%
DENTSPLY SIRONA Inc	XRAY	0.04%	0.85%	0.00%	-1.32%	0.00%
Zions Bancorp NA	ZION	0.02%	4.06%	0.00%	-5.06%	0.00%
Alaska Air Group Inc	ALK	0.02%	n/a	n/a	-19.37%	0.00%
Invesco Ltd	IVZ	0.01%	7.48%	0.00%	-9.60%	0.00%
Linde PLC	LIN	0.41%	1.88%	0.01%	9.50%	0.04%
Intuit Inc	INTU	0.29%	0.73%	0.00%	15.10%	0.04%
Morgan Stanley	MS	0.27%	3.12%	0.01%	-0.03%	0.00%
Microchip Technology Inc	MCHP	0.09%	1.54%	0.00%	12.40%	0.01%
Chubb Ltd	CB	0.21%	2.60%	0.01%	9.05%	0.02%
Hologic Inc	HOLX	0.05%	n/a	n/a	8.85%	0.00%
Citizens Financial Group Inc	CFG	0.04%	6.31%	0.00%	30.88%	0.01%
O'Reilly Automotive Inc	ORLY	0.12%	n/a	n/a	10.55%	0.01%
Allstate Corp/The	ALL	0.12%	2.18%	0.00%	7.00%	0.01%
FLIR Systems Inc	FLIR	0.02%	1.47%	0.00%	10.40%	0.00%
Equity Residential	EQR	0.09%	3.93%	0.00%	3.51%	0.00%
BorgWarner Inc	BWA	0.03%	2.03%	0.00%	6.87%	0.00%
Incyte Corp	INCY	0.08%	n/a	n/a	23.25%	0.02%
Simon Property Group Inc	SPG	0.07%	13.72%	0.01%	0.90%	0.00%
Eastman Chemical Co	EMN	0.04%	3.84%	0.00%	1.92%	0.00%
Twitter Inc	TWTR	0.10%	n/a	n/a	32.77%	0.03%
AvalonBay Communities Inc	AVB	0.09%	3.95%	0.00%	5.85%	0.01%
Prudential Financial Inc	PRU	0.09%	7.26%	0.01%	7.25%	0.01%
United Parcel Service Inc	UPS	0.27%	4.06%	0.01%	6.09%	0.02%
Apartment Investment and Management Co	AIV	0.02%	4.32%	0.00%	3.01%	0.00%
Walgreens Boots Alliance Inc	WBA	0.14%	4.24%	0.01%	1.47%	0.00%
STERIS PLC	STE	0.05%	0.89%	0.00%	10.10%	0.01%
McKesson Corp	MCK	0.10%	1.03%	0.00%	5.88%	0.01%
Lockheed Martin Corp	LMT	0.42%	2.45%	0.01%	7.85%	0.03%
AmerisourceBergen Corp	ABC	0.07%	1.76%	0.00%	12.18%	0.01%
Capital One Financial Corp	COF	0.12%	2.33%	0.00%	6.75%	0.01%
Waters Corp	WAT	0.05%	n/a	n/a	3.89%	0.00%
Dollar Tree Inc	DLTR	0.09%	n/a	n/a	8.68%	0.01%
Darden Restaurants Inc	DRI	0.04%	n/a	n/a	6.52%	0.00%
Domino's Pizza Inc	DPZ	0.06%	0.80%	0.00%	12.98%	0.01%
NVR Inc	NVR	0.05%	n/a	n/a	2.44%	0.00%
NetApp Inc	NTAP	0.04%	4.46%	0.00%	7.05%	0.00%
Citrix Systems Inc	CTXS	0.07%	0.95%	0.00%	9.33%	0.01%
DXC Technology Co	DXC	0.01%	n/a	n/a	-6.42%	0.00%
Old Dominion Freight Line Inc	ODFL	0.08%	0.35%	0.00%	8.74%	0.01%
DaVita Inc	DVA	0.04%	n/a	n/a	9.56%	0.00%
Hartford Financial Services Group Inc/The	HIG	0.05%	3.35%	0.00%	12.00%	0.01%
Iron Mountain Inc	IRM	0.03%	9.36%	0.00%	0.06%	0.00%
Estee Lauder Cos Inc/The	EL	0.17%	n/a	n/a	8.83%	0.02%
Cadence Design Systems Inc	CDNS	0.10%	n/a	n/a	11.09%	0.01%
Universal Health Services Inc	UHS	0.03%	n/a	n/a	6.67%	0.00%
E*TRADE Financial Corp	ETFC	0.04%	1.22%	0.00%	-11.58%	0.00%
Skyworks Solutions Inc	SWKS	0.08%	1.47%	0.00%	12.11%	0.01%
National Oilwell Varco Inc	NOV	0.00%	n/a	n/a	n/a	n/a
Quest Diagnostics Inc	DGX	0.06%	1.88%	0.00%	5.46%	0.00%
Activision Blizzard Inc	ATVI	0.22%	0.56%	0.00%	11.12%	0.02%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[14]	[15]	[16]	[17]	[18]
		Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Rockwell Automation Inc	ROK	0.09%	1.90%	0.00%	7.18%	0.01%
Kraft Heinz Co/The	KHC	0.14%	5.24%	0.01%	4.60%	0.01%
American Tower Corp	AMT	0.45%	1.65%	0.01%	15.64%	0.07%
HollyFrontier Corp	HFC	0.02%	4.44%	0.00%	-2.81%	0.00%
Regeneron Pharmaceuticals Inc	REGN	0.23%	n/a	n/a	9.02%	0.02%
Amazon.com Inc	AMZN	4.71%	n/a	n/a	26.16%	1.23%
Jack Henry & Associates Inc	JKHY	0.05%	0.95%	0.00%	12.10%	0.01%
Ralph Lauren Corp	RL	0.01%	n/a	n/a	4.71%	0.00%
Boston Properties Inc	BXP	0.05%	4.41%	0.00%	3.97%	0.00%
Amphenol Corp	APH	0.11%	1.02%	0.00%	8.12%	0.01%
Howmet Aerospace Inc	HWM	0.02%	n/a	n/a	51.10%	0.01%
Pioneer Natural Resources Co	PXD	0.06%	2.36%	0.00%	20.05%	0.01%
Valero Energy Corp	VLO	0.10%	5.89%	0.01%	-0.41%	0.00%
Synopsys Inc	SNPS	0.11%	n/a	n/a	14.35%	0.02%
Western Union Co/The	WU	0.03%	4.33%	0.00%	5.30%	0.00%
CH Robinson Worldwide Inc	CHRW	0.04%	2.54%	0.00%	8.37%	0.00%
Accenture PLC	ACN	0.50%	1.57%	0.01%	10.50%	0.05%
TransDigm Group Inc	TDG	0.09%	n/a	n/a	6.18%	0.01%
Yum! Brands Inc	YUM	0.10%	2.07%	0.00%	11.40%	0.01%
Prologis Inc	PLD	0.27%	2.46%	0.01%	5.12%	0.01%
FirstEnergy Corp	FE	0.09%	3.64%	0.00%	0.65%	0.00%
VeriSign Inc	VRSN	0.10%	n/a	n/a	3.20%	0.00%
Quanta Services Inc	PWR	0.02%	0.53%	0.00%	10.00%	0.00%
Henry Schein Inc	HSIC	0.03%	n/a	n/a	0.70%	0.00%
Ameren Corp	AEE	0.07%	2.63%	0.00%	7.06%	0.01%
ANSYS Inc	ANSS	0.09%	n/a	n/a	11.50%	0.01%
NVIDIA Corp	NVDA	0.83%	0.18%	0.00%	17.71%	0.15%
Sealed Air Corp	SEE	0.02%	1.97%	0.00%	3.29%	0.00%
Cognizant Technology Solutions Corp	CTSH	0.11%	1.66%	0.00%	10.08%	0.01%
SVB Financial Group	SIVB	0.04%	n/a	n/a	10.00%	0.00%
Intuitive Surgical Inc	ISRG	0.26%	n/a	n/a	6.66%	0.02%
Take-Two Interactive Software Inc	TTWO	0.06%	n/a	n/a	6.33%	0.00%
Republic Services Inc	RSG	0.10%	1.90%	0.00%	5.57%	0.01%
eBay Inc	EBAY	0.12%	1.41%	0.00%	11.80%	0.01%
Goldman Sachs Group Inc/The	GS	0.26%	2.50%	0.01%	5.13%	0.01%
Sempra Energy	SRE	0.14%	3.22%	0.00%	7.41%	0.01%
SBA Communications Corp	SBAC	0.14%	0.58%	0.00%	29.90%	0.04%
Moody's Corp	MCO	0.20%	0.81%	0.00%	8.00%	0.02%
Booking Holdings Inc	BKNG	0.26%	n/a	n/a	19.73%	0.05%
F5 Networks Inc	FFIV	0.03%	n/a	n/a	4.02%	0.00%
Akamai Technologies Inc	AKAM	0.07%	n/a	n/a	11.80%	0.01%
MarketAxess Holdings Inc	MKTX	0.00%	0.46%	0.00%	n/a	n/a
Devon Energy Corp	DVN	0.02%	3.74%	0.00%	0.55%	0.00%
Alphabet Inc	GOOGL	1.64%	n/a	n/a	14.18%	0.23%
Teleflex Inc	TFX	0.07%	0.37%	0.00%	12.25%	0.01%
Netflix Inc	NFLX	0.71%	n/a	n/a	31.97%	0.23%
Allegion plc	ALLE	0.04%	1.27%	0.00%	6.17%	0.00%
Agilent Technologies Inc	A	0.11%	0.80%	0.00%	10.30%	0.01%
Anthem Inc	ANTM	0.28%	1.31%	0.00%	12.67%	0.04%
CME Group Inc	CME	0.25%	1.84%	0.00%	8.43%	0.02%
Juniper Networks Inc	JNPR	0.03%	3.28%	0.00%	7.86%	0.00%
BlackRock Inc	BLK	0.32%	2.68%	0.01%	3.84%	0.01%
DTE Energy Co	DTE	0.08%	3.71%	0.00%	5.87%	0.00%
Nasdaq Inc	NDAQ	0.08%	1.64%	0.00%	11.84%	0.01%
Celanese Corp	CE	0.04%	2.76%	0.00%	3.61%	0.00%
Philip Morris International Inc	PM	0.44%	6.35%	0.03%	5.97%	0.03%
salesforce.com Inc	CRM	0.61%	n/a	n/a	19.32%	0.12%
Ingersoll Rand Inc	IR	0.05%	n/a	n/a	10.20%	0.00%
Huntington Ingalls Industries Inc	HII	0.03%	2.09%	0.00%	40.00%	0.01%
MetLife Inc	MET	0.13%	5.09%	0.01%	5.85%	0.01%
Under Armour Inc	UA	0.01%	n/a	n/a	18.10%	0.00%
Tapestry Inc	TPR	0.01%	n/a	n/a	8.05%	0.00%
CSX Corp	CSX	0.21%	1.46%	0.00%	8.77%	0.02%
Edwards Lifesciences Corp	EW	0.18%	n/a	n/a	13.75%	0.02%
Ameriprise Financial Inc	AMP	0.07%	2.88%	0.00%	3.90%	0.00%
Zebra Technologies Corp	ZBRA	0.05%	n/a	n/a	11.90%	0.01%
TechnipFMC PLC	FTI	0.01%	1.66%	0.00%	9.50%	0.00%
Zimmer Biomet Holdings Inc	ZBH	0.10%	0.75%	0.00%	4.31%	0.00%
CBRE Group Inc	CBRE	0.06%	n/a	n/a	8.45%	0.00%
Mastercard Inc	MA	1.15%	0.53%	0.01%	15.00%	0.17%
CarMax Inc	KMX	0.06%	n/a	n/a	9.11%	0.01%
Intercontinental Exchange Inc	ICE	0.21%	1.22%	0.00%	9.07%	0.02%
Fidelity National Information Services Inc	FIS	0.33%	1.01%	0.00%	18.40%	0.06%
Chipotle Mexican Grill Inc	CMG	0.11%	n/a	n/a	15.17%	0.02%
Wynn Resorts Ltd	WYNN	0.04%	n/a	n/a	20.00%	0.01%
Live Nation Entertainment Inc	LYV	0.00%	n/a	n/a	n/a	n/a
Assurant Inc	AIZ	0.00%	2.44%	0.00%	n/a	n/a
NRG Energy Inc	NRG	0.03%	3.30%	0.00%	-11.05%	0.00%
Regions Financial Corp	RF	0.04%	5.42%	0.00%	-1.84%	0.00%
Monster Beverage Corp	MNST	0.15%	n/a	n/a	9.39%	0.01%
Mosaic Co/The	MOS	0.02%	1.59%	0.00%	38.35%	0.01%
Expedia Group Inc	EXPE	0.04%	n/a	n/a	10.97%	0.00%
Eversys Inc	EVERG	0.05%	3.23%	0.00%	6.70%	0.00%
Discovery Inc	DISCA	0.01%	n/a	n/a	-0.63%	0.00%
CF Industries Holdings Inc	CF	0.02%	4.03%	0.00%	11.05%	0.00%
Leidos Holdings Inc	LDOS	0.06%	1.27%	0.00%	10.36%	0.01%
Alphabet Inc	GOOG	1.84%	n/a	n/a	14.18%	0.26%
Cooper Cos Inc/The	COO	0.06%	0.02%	0.00%	8.93%	0.01%
TE Connectivity Ltd	TEL	0.11%	2.28%	0.00%	9.28%	0.01%
Discover Financial Services	DFS	0.06%	3.57%	0.00%	29.12%	0.02%
Visa Inc	V	1.25%	0.62%	0.01%	13.52%	0.17%

STANDARD AND POOR'S 500 INDEX

		[14]	[15]	[16]	[17]	[18]
Name	Ticker	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Mid-America Apartment Communities Inc	MAA	0.00%	3.37%	0.00%	n/a	n/a
Xylem Inc/NY	XYL	0.05%	1.57%	0.00%	25.00%	0.01%
Marathon Petroleum Corp	MPC	0.09%	6.39%	0.01%	4.05%	0.00%
Tractor Supply Co	TSCO	0.05%	1.14%	0.00%	11.16%	0.01%
Advanced Micro Devices Inc	AMD	0.24%	n/a	n/a	20.33%	0.05%
ResMed Inc	RMD	0.09%	0.96%	0.00%	13.80%	0.01%
Mettler-Toledo International Inc	MTD	0.07%	n/a	n/a	8.17%	0.01%
Copart Inc	CPRT	0.00%	n/a	n/a	n/a	n/a
Albemarle Corp	ALB	0.03%	1.98%	0.00%	10.07%	0.00%
Fortinet Inc	FTNT	0.09%	n/a	n/a	16.68%	0.02%
Essex Property Trust Inc	ESS	0.06%	3.35%	0.00%	3.92%	0.00%
Realty Income Corp	O	0.07%	4.91%	0.00%	3.64%	0.00%
Seagate Technology PLC	STX	0.05%	4.98%	0.00%	4.83%	0.00%
Westrock Co	WRK	0.03%	2.77%	0.00%	-5.50%	0.00%
IHS Markit Ltd	INFO	0.11%	0.96%	0.00%	12.20%	0.01%
Westinghouse Air Brake Technologies Corp	WAB	0.04%	0.78%	0.00%	7.66%	0.00%
Western Digital Corp	WDC	0.05%	n/a	n/a	-1.20%	0.00%
PepsiCo Inc	PEP	0.71%	3.06%	0.02%	4.17%	0.03%
Diamondback Energy Inc	FANG	0.03%	3.42%	0.00%	17.94%	0.00%
Maxim Integrated Products Inc	MXIM	0.06%	3.31%	0.00%	8.03%	0.00%
ServiceNow Inc	NOW	0.28%	n/a	n/a	29.60%	0.08%
Church & Dwight Co Inc	CHD	0.07%	1.26%	0.00%	7.87%	0.01%
Duke Realty Corp	DRE	0.05%	2.66%	0.00%	-0.65%	0.00%
Federal Realty Investment Trust	FRT	0.02%	4.96%	0.00%	3.16%	0.00%
MGM Resorts International	MGM	0.03%	0.06%	0.00%	18.70%	0.01%
JB Hunt Transport Services Inc	JBHT	0.05%	0.93%	0.00%	13.05%	0.01%
Lam Research Corp	LRCX	0.15%	1.70%	0.00%	10.47%	0.02%
Mohawk Industries Inc	MHK	0.03%	n/a	n/a	9.00%	0.00%
Pentair PLC	PNR	0.02%	1.94%	0.00%	4.94%	0.00%
Vertex Pharmaceuticals Inc	VRTX	0.28%	n/a	n/a	24.51%	0.07%
Amcor PLC	AMCR	0.06%	4.49%	0.00%	8.90%	0.01%
Facebook Inc	FB	2.11%	n/a	n/a	22.16%	0.47%
T-Mobile US Inc	TMUS	0.47%	n/a	n/a	12.15%	0.06%
United Rentals Inc	URI	0.04%	n/a	n/a	6.32%	0.00%
ABIOMED Inc	ABMD	0.00%	n/a	n/a	n/a	n/a
Alexandria Real Estate Equities Inc	ARE	0.07%	2.74%	0.00%	4.13%	0.00%
Delta Air Lines Inc	DAL	0.06%	n/a	n/a	-0.50%	0.00%
United Airlines Holdings Inc	UAL	0.03%	n/a	n/a	-5.70%	0.00%
News Corp	NWS	0.01%	1.63%	0.00%	3.29%	0.00%
Centene Corp	CNC	0.15%	n/a	n/a	14.65%	0.02%
Martin Marietta Materials Inc	MLM	0.05%	1.12%	0.00%	10.66%	0.00%
PayPal Holdings Inc	PYPL	0.69%	n/a	n/a	20.39%	0.14%
Coty Inc	COTY	0.01%	n/a	n/a	-1.77%	0.00%
DISH Network Corp	DISH	0.04%	n/a	n/a	1.62%	0.00%
Dow Inc	DOW	0.11%	7.20%	0.01%	-10.32%	-0.01%
Alexion Pharmaceuticals Inc	ALXN	0.10%	n/a	n/a	11.09%	0.01%
Everest Re Group Ltd	RE	0.03%	3.19%	0.00%	10.00%	0.00%
News Corp	NWSA	0.02%	1.63%	0.00%	3.29%	0.00%
Exelon Corp	EXC	0.15%	3.93%	0.01%	0.77%	0.00%
Global Payments Inc	GPN	0.21%	0.43%	0.00%	17.56%	0.04%
Crown Castle International Corp	CCI	0.28%	2.74%	0.01%	17.63%	0.05%
Aptiv PLC	APTIV	0.07%	n/a	n/a	9.46%	0.01%
Advance Auto Parts Inc	AAP	0.04%	0.71%	0.00%	12.08%	0.00%
Align Technology Inc	ALGN	0.07%	n/a	n/a	10.75%	0.01%
Illumina Inc	ILMN	0.21%	n/a	n/a	18.06%	0.04%
Alliance Data Systems Corp	ADS	0.01%	1.69%	0.00%	-4.44%	0.00%
LKQ Corp	LKQ	0.03%	n/a	n/a	2.60%	0.00%
Nielsen Holdings PLC	NLSN	0.02%	1.63%	0.00%	12.00%	0.00%
Garmin Ltd	GRMN	0.07%	2.69%	0.00%	6.35%	0.00%
Zoetis Inc	ZTS	0.25%	0.58%	0.00%	6.08%	0.02%
Equinix Inc	EQIX	0.24%	1.49%	0.00%	18.80%	0.05%
Digital Realty Trust Inc	DLR	0.15%	3.09%	0.00%	15.80%	0.02%
Las Vegas Sands Corp	LVS	0.14%	n/a	n/a	9.10%	0.01%
Discovery Inc	DISCK	0.03%	n/a	n/a	-0.63%	0.00%

Notes:

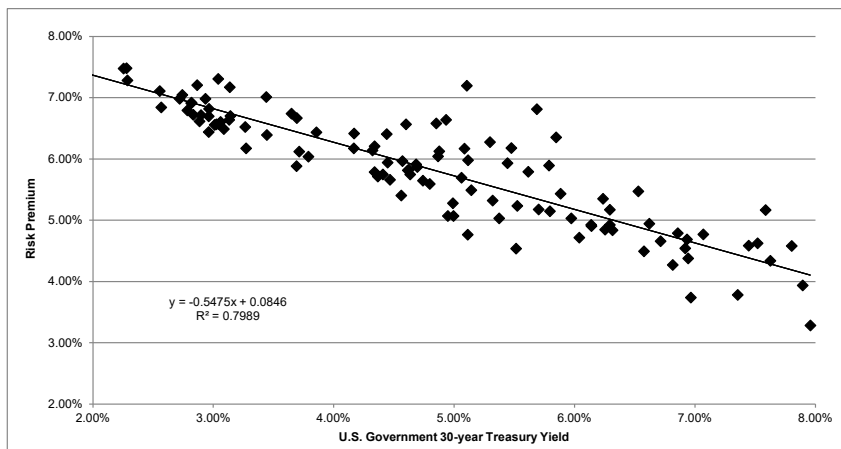
[9] Equals sum of Col. [16]
[10] Equals sum of Col. [18]
[11] Equals ([9] x (1 + (0.5 x [10]))) + [10]
[12] Source: Attachment AEB-Supplemental-6, at 1
[13] Equals [11] - [12]
[14] Equals weight in S&P 500 based on market capitalization
[15] Source: Bloomberg Professional, as of May 29, 2020
[16] Equals [14] x [15]
[17] Source: Bloomberg Professional, as of May 29, 2020
[18] Equals [14] x [17]

BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
	Average Authorized Electric ROE	U.S. Govt. 30-year Treasury	Risk Premium
1992.1	12.38%	7.80%	4.58%
1992.2	11.83%	7.89%	3.93%
1992.3	12.03%	7.45%	4.59%
1992.4	12.14%	7.52%	4.62%
1993.1	11.84%	7.07%	4.77%
1993.2	11.64%	6.86%	4.79%
1993.3	11.15%	6.31%	4.84%
1993.4	11.04%	6.14%	4.90%
1994.1	11.07%	6.57%	4.49%
1994.2	11.13%	7.35%	3.78%
1994.3	12.75%	7.58%	5.17%
1994.4	11.24%	7.96%	3.28%
1995.1	11.96%	7.63%	4.34%
1995.2	11.32%	6.94%	4.37%
1995.3	11.37%	6.71%	4.66%
1995.4	11.58%	6.23%	5.35%
1996.1	11.46%	6.29%	5.17%
1996.2	11.46%	6.92%	4.54%
1996.3	10.70%	6.96%	3.74%
1996.4	11.56%	6.62%	4.94%
1997.1	11.08%	6.81%	4.27%
1997.2	11.62%	6.93%	4.68%
1997.3	12.00%	6.53%	5.47%
1997.4	11.06%	6.14%	4.92%
1998.1	11.31%	5.88%	5.43%
1998.2	12.20%	5.85%	6.35%
1998.3	11.65%	5.47%	6.18%
1998.4	12.30%	5.10%	7.20%
1999.1	10.40%	5.37%	5.03%
1999.2	10.94%	5.79%	5.15%
1999.3	10.75%	6.04%	4.71%
1999.4	11.10%	6.25%	4.85%
2000.1	11.21%	6.29%	4.92%
2000.2	11.00%	5.97%	5.03%
2000.3	11.68%	5.79%	5.89%
2000.4	12.50%	5.69%	6.81%
2001.1	11.38%	5.44%	5.93%
2001.2	10.88%	5.70%	5.18%
2001.3	10.76%	5.52%	5.23%
2001.4	11.57%	5.30%	6.27%
2002.1	10.05%	5.51%	4.54%
2002.2	11.41%	5.61%	5.79%
2002.3	11.25%	5.08%	6.17%
2002.4	11.57%	4.93%	6.64%
2003.1	11.43%	4.85%	6.58%
2003.2	11.16%	4.60%	6.56%
2003.3	9.88%	5.11%	4.76%
2003.4	11.09%	5.11%	5.98%
2004.1	11.00%	4.88%	6.12%
2004.2	10.64%	5.32%	5.32%
2004.3	10.75%	5.06%	5.69%
2004.4	10.91%	4.86%	6.04%
2005.1	10.56%	4.69%	5.87%
2005.2	10.13%	4.47%	5.66%
2005.3	10.85%	4.44%	6.41%
2005.4	10.59%	4.68%	5.91%
2006.1	10.38%	4.63%	5.75%
2006.2	10.63%	5.14%	5.49%
2006.3	10.06%	4.99%	5.07%
2006.4	10.39%	4.74%	5.65%
2007.1	10.39%	4.80%	5.59%
2007.2	10.27%	4.99%	5.28%
2007.3	10.02%	4.95%	5.07%
2007.4	10.43%	4.61%	5.81%
2008.1	10.15%	4.41%	5.75%
2008.2	10.54%	4.57%	5.97%
2008.3	10.38%	4.44%	5.94%
2008.4	10.39%	3.65%	6.74%
2009.1	10.45%	3.44%	7.01%
2009.2	10.58%	4.17%	6.42%
2009.3	10.46%	4.32%	6.14%
2009.4	10.54%	4.34%	6.21%
2010.1	10.45%	4.62%	5.82%
2010.2	10.08%	4.36%	5.71%
2010.3	10.29%	3.86%	6.43%
2010.4	10.34%	4.17%	6.17%
2011.1	9.96%	4.56%	5.40%
2011.2	10.12%	4.34%	5.78%

BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
	Average Authorized Electric ROE	U.S. Govt. 30-year Treasury	Risk Premium
2011.3	10.36%	3.69%	6.67%
2011.4	10.34%	3.04%	7.31%
2012.1	10.30%	3.14%	7.17%
2012.2	9.92%	2.93%	6.98%
2012.3	9.78%	2.74%	7.04%
2012.4	10.07%	2.86%	7.21%
2013.1	9.77%	3.13%	6.64%
2013.2	9.84%	3.14%	6.70%
2013.3	9.83%	3.71%	6.12%
2013.4	9.82%	3.79%	6.04%
2014.1	9.57%	3.69%	5.88%
2014.2	9.83%	3.44%	6.39%
2014.3	9.79%	3.26%	6.52%
2014.4	9.78%	2.96%	6.81%
2015.1	9.66%	2.55%	7.11%
2015.2	9.50%	2.88%	6.61%
2015.3	9.40%	2.96%	6.44%
2015.4	9.65%	2.96%	6.69%
2016.1	9.70%	2.72%	6.98%
2016.2	9.41%	2.57%	6.84%
2016.3	9.76%	2.28%	7.48%
2016.4	9.55%	2.83%	6.72%
2017.1	9.61%	3.04%	6.57%
2017.2	9.61%	2.90%	6.71%
2017.3	9.73%	2.82%	6.91%
2017.4	9.74%	2.82%	6.92%
2018.1	9.59%	3.02%	6.57%
2018.2	9.57%	3.09%	6.49%
2018.3	9.66%	3.06%	6.60%
2018.4	9.44%	3.27%	6.17%
2019.1	9.57%	3.01%	6.56%
2019.2	9.58%	2.78%	6.79%
2019.3	9.57%	2.29%	7.28%
2019.4	9.73%	2.25%	7.48%
2020.1	9.45%	1.89%	7.56%
2020.2	9.58%	1.32%	8.26%
AVERAGE	10.61%	4.74%	5.87%
MEDIAN	10.45%	4.72%	5.94%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.893811
R Square	0.798898
Adjusted R Square	0.797102
Standard Error	0.004346
Observations	114

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.008405	0.008405	444.930706	0.000000
Residual	112	0.002116	0.000019		
Total	113	0.010520			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0846	0.001297	65.26	0.000000	0.082067	0.087206	0.082067	0.087206
U.S. Govt. 30-year Treasury	(0.5475)	0.025955	(21.09)	0.000000	(0.598900)	(0.496048)	(0.598900)	(0.496048)

	[7] U.S. Govt. 30-year Treasury	[8] Risk Premium	[9] ROE
Current 30-Day Average [4]	1.33%	7.74%	9.06%
Blue Chip Consensus Forecast (Q3 2020 - Q3 2021) [5]	1.68%	7.54%	9.22%
Blue Chip Consensus Forecast (2022-2026) [6]	3.00%	6.82%	9.82%
AVERAGE			9.37%

Notes:

- [1] Source: Regulatory Research Associates, cases up until May 31, 2020.
- [2] Source: Bloomberg Professional, quarterly bond yields are the average of each trading day in the quarter
- [3] Equals Column [1] - Column [2]
- [4] Source: Bloomberg Professional, 30-day average as of May 29, 2020
- [5] Source: Blue Chip Financial Forecasts, Vol. 39, No. 6, June 1, 2020, at 2
- [6] Source: Blue Chip Financial Forecasts, Vol. 39, No. 6, June 1, 2020, at 14
- [7] See notes [4], [5] & [6]
- [8] Equals $0.084637 + (-0.547474 \times \text{Column [7]})$
- [9] Equals Column [7] + Column [8]

BETA COEFFICIENT COMPARISON

		[1]	[2]	[3]
		Bloomberg as	Value Line as	Value Line as
		of May 29,	of May 15,	of February
		2020	2020	14, 2020
Value Line Electric East				
Avangrid, Inc.	AGR	0.73	0.80	0.40
Dominion Resources, Inc.	D	0.71	0.80	0.50
Duke Energy Corporation	DUK	0.72	0.85	0.45
Consolidated Edison, Inc.	ED	0.64	0.75	0.40
Eversource Energy	ES	0.81	0.90	0.55
Exelon Corporation	EXC	0.80	0.90	0.65
FirstEnergy Corporation	FE	0.80	0.85	0.60
NextEra Energy, Inc.	NEE	0.76	0.85	0.50
Public Service Enterprise Group, Inc.	PEG	0.83	0.90	0.60
PPL Corporation	PPL	0.89	1.05	0.65
Southern Company	SO	0.73	0.90	0.50
Mean		0.77	0.87	0.53

		[1]	[2]	[3]
		Bloomberg as	Value Line as	Value Line as
		of May 29,	of June 12,	of March 13,
		2020	2020	2020
Value Line Electric Central				
ALLETE, Inc.	ALE	0.82	0.85	0.60
Alliant Energy Corporation	LNT	0.81	0.80	0.55
Ameren Corporation	AEE	0.76	0.80	0.50
American Electric Power Company, Inc	AEP	0.77	0.75	0.50
CenterPoint Energy, Inc.	CNP	0.98	1.15	0.70
CMS Energy Corporation	CMS	0.77	0.80	0.50
DTE Energy Company	DTE	0.84	0.90	0.50
Entergy Corporation	ETR	0.84	0.95	0.60
Evergy, Inc.	EVRG	0.81	1.05	NMF
MGE Energy, Inc.	MGEE	0.68	0.70	0.50
OGE Energy Corporation	OGE	0.92	1.05	0.70
Otter Tail Corporation	OTTR	0.87	0.85	0.70
Wisconsin Energy Corporation	WEC	0.75	0.80	0.45
Mean		0.82	0.88	0.57

Notes:

- [1] Source: Bloomberg Professional
[2] Source: Value Line
[3] Source: Value Line

ELECTRIC RATE CASE HISTORY
FEBRUARY 2020 - June 2020

State	Company	Parent Company Ticker	Docket	Rate Case Service Type	Case Type	Date	Decision Type	Return on Equity (%)	Fully Litigated ROEs
California	PacifiCorp	BRK.A	A-18-04-002	Electric	Vertically Integrated	2/6/2020	Fully Litigated	10.00	10.00
Colorado	Public Service Co. of CO	XEL	D-19AL-0268E	Electric	Vertically Integrated	2/11/2020	Fully Litigated	9.30	9.30
Indiana	Duke Energy Indiana, LLC	DUK	Ca-45253	Electric	Vertically Integrated	6/29/2020	Fully Litigated	9.70	9.70
Indiana	Indiana Michigan Power Co.	AEP	Ca-45235	Electric	Vertically Integrated	3/11/2020	Fully Litigated	9.70	9.70
Kentucky	Duke Energy Kentucky Inc.	DUK	C-2019-00271	Electric	Vertically Integrated	4/27/2020	Fully Litigated	9.25	9.25
Massachusetts	Fitchburg Gas & Electric Light	UTL	DPU 19-130	Electric	Distribution	4/17/2020	Settled	9.70	
Michigan	DTE Electric Co.	DTE	C-U-20561	Electric	Vertically Integrated	5/8/2020	Fully Litigated	9.90	9.90
North Carolina	Virginia Electric & Power Co.	D	E-22, Sub 562	Electric	Vertically Integrated	2/24/2020	Settled	9.75	
New Hampshire	Liberty Utilities	AQN	DE 19-064	Electric	Distribution	6/30/2020	Settled	9.10	
New Mexico	Southwestern Public Service Co	XEL	C-19-00170-UT	Electric	Vertically Integrated	5/20/2020	Settled	9.45	
Texas	AEP Texas Inc.	AEP	D-49494	Electric	Distribution	2/27/2020	Settled	9.40	
Texas	CenterPoint Energy Houston	CNP	D-49421	Electric	Distribution	2/14/2020	Settled	9.40	
Washington	Avista Corp.	AVA	D-UE-190334	Electric	Vertically Integrated	3/25/2020	Settled	9.40	
MEAN								9.54	9.64
LOW								9.10	9.25
HIGH								10.00	10.00

Notes:

[1] Source: S&P Global Market Intelligence, NH Pubic Service Commission

[2] Excludes limited issue rider cases, transmission-only cases and cases that were silent with respect to the authorized ROE.

[3] Excludes the Central Maine Power ROE of 8.25 percent authorized on February 19, 2020 in D-2018-00194 because it included a penalty of 100 basis points for management performance.

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CAPITAL STRUCTURE ANALYSIS

COMMON EQUITY RATIO [1]										
Proxy Group Company	Ticker	2020Q1	2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	Average
ALLETE, Inc.	ALE	58.34%	59.55%	59.30%	60.87%	60.78%	61.24%	60.33%	60.26%	60.08%
Alliant Energy Corporation	LNT	50.84%	49.95%	50.45%	49.61%	51.44%	51.27%	49.65%	49.68%	50.36%
Avangrid, Inc.	AGR	53.85%	54.71%	54.45%	56.37%	56.60%	56.10%	55.39%	53.42%	55.11%
FirstEnergy Corporation	FE	55.32%	55.52%	56.92%	56.36%	56.90%	57.42%	58.23%	57.00%	56.71%
Hawaiian Electric Industries, Inc.	HE	53.27%	53.72%	53.65%	52.46%	53.67%	57.55%	54.69%	54.28%	54.16%
NorthWestern Corporation	NWE	47.78%	47.59%	47.80%	48.07%	48.74%	47.88%	48.36%	48.41%	48.08%
Portland General Electric Company	POR	49.90%	49.85%	51.78%	51.39%	50.60%	50.19%	50.51%	50.29%	50.56%
PPL Corporation	PPL	53.07%	52.89%	53.64%	53.02%	53.47%	53.35%	53.91%	53.53%	53.36%
MEAN		52.80%	52.97%	53.50%	53.52%	54.02%	54.37%	53.88%	53.36%	53.55%
LOW		47.78%	47.59%	47.80%	48.07%	48.74%	47.88%	48.36%	48.41%	48.08%
HIGH		58.34%	59.55%	59.30%	60.87%	60.78%	61.24%	60.33%	60.26%	60.08%

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES [2]										
Company Name	Ticker	2020Q1	2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	Average
ALLETE (Minnesota Power)	ALE	58.32%	59.59%	59.33%	60.94%	60.87%	61.39%	60.43%	60.33%	60.15%
Superior Water, Light and Power Company	ALE	59.14%	58.08%	58.03%	58.38%	57.40%	55.76%	56.58%	57.34%	57.59%
Interstate Power and Light Company	LNT	49.75%	48.74%	48.56%	50.11%	51.59%	51.26%	47.96%	48.62%	49.57%
Wisconsin Power and Light Company	LNT	52.41%	51.71%	53.30%	48.92%	51.22%	51.29%	52.04%	51.09%	51.50%
Central Maine Power Company	AGR	61.15%	62.49%	62.18%	61.95%	63.24%	63.20%	62.83%	62.27%	62.41%
New York State Electric & Gas Corporation	AGR	47.00%	47.80%	48.79%	54.16%	54.41%	53.50%	53.68%	49.19%	51.07%
Rochester Gas and Electric Corporation	AGR	51.13%	50.44%	50.50%	50.25%	49.96%	48.89%	48.16%	47.78%	49.64%
United Illuminating Company	AGR	56.17%	57.63%	54.98%	57.26%	56.65%	56.46%	53.89%	51.64%	55.58%
Cleveland Electric Illuminating Company	FE	53.20%	53.53%	54.73%	53.49%	54.32%	55.19%	56.50%	56.27%	54.66%
Jersey Central Power & Light Company	FE	66.46%	66.87%	68.02%	66.58%	67.05%	67.54%	66.41%	64.90%	66.73%
Metropolitan Edison Company	FE	48.37%	48.00%	49.72%	48.46%	47.78%	50.71%	52.40%	50.43%	49.48%
Monongahela Power Company	FE	46.21%	45.77%	47.85%	46.55%	47.19%	46.68%	50.71%	49.50%	47.56%
Ohio Edison Company	FE	67.66%	66.77%	69.16%	71.42%	70.82%	69.93%	69.14%	67.33%	69.03%
Pennsylvania Electric Company	FE	49.83%	50.37%	51.78%	50.93%	51.73%	52.81%	52.71%	52.77%	51.62%
Pennsylvania Power Company	FE	47.07%	47.34%	53.09%	51.71%	50.69%	49.03%	57.01%	54.79%	51.34%
Potomac Edison Company	FE	51.06%	53.03%	52.89%	52.61%	53.29%	52.35%	52.92%	52.65%	52.60%
Toledo Edison Company	FE	57.83%	57.58%	60.76%	59.71%	60.78%	60.39%	62.25%	60.71%	60.00%
West Penn Power Company	FE	46.73%	47.64%	45.50%	46.25%	48.64%	49.75%	50.13%	48.01%	47.83%
Hawaiian Electric Company, Inc.	HE	53.27%	53.72%	53.65%	52.46%	53.67%	57.55%	54.69%	54.28%	54.16%
NorthWestern Corporation	NWE	47.78%	47.59%	47.80%	48.07%	48.74%	47.88%	48.36%	48.41%	48.08%
Portland General Electric Company	POR	49.90%	49.85%	51.78%	51.39%	50.60%	50.19%	50.51%	50.29%	50.56%
Kentucky Utilities Company	PPL	52.25%	51.54%	52.95%	52.81%	53.08%	52.46%	53.43%	53.13%	52.71%
Louisville Gas and Electric Company	PPL	52.61%	51.25%	52.91%	52.73%	52.75%	52.26%	53.06%	52.59%	52.52%
PPL Electric Utilities Corporation	PPL	53.85%	54.62%	54.44%	53.31%	54.13%	54.52%	54.65%	54.28%	54.23%

Notes:

[1] Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of Operating Subsidiaries.

[2] Natural Gas and Electric Operating Subsidiaries with data listed as N/A from SNL Financial have been excluded from the analysis.

CAPITAL STRUCTURE ANALYSIS

LONG-TERM DEBT RATIO [1]										
Proxy Group Company	Ticker	2020Q1	2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	Average
ALLETE, Inc.	ALE	41.66%	40.45%	40.70%	39.13%	39.19%	38.71%	39.67%	39.74%	39.91%
Alliant Energy Corporation	LNT	45.77%	46.72%	47.67%	48.46%	45.24%	45.15%	47.92%	47.87%	46.85%
Avangrid, Inc.	AGR	42.96%	44.29%	45.17%	42.78%	42.50%	43.48%	42.35%	42.95%	43.31%
FirstEnergy Corporation	FE	42.68%	43.07%	41.87%	41.13%	40.59%	40.06%	39.67%	39.61%	41.08%
Hawaiian Electric Industries, Inc.	HE	44.12%	43.94%	43.33%	43.23%	44.80%	41.71%	42.81%	43.03%	43.37%
NorthWestern Corporation	NWE	52.22%	52.41%	52.20%	51.93%	51.26%	52.12%	51.64%	51.59%	51.92%
Portland General Electric Company	POR	49.73%	50.15%	48.22%	48.27%	49.40%	49.81%	49.49%	49.71%	49.35%
PPL Corporation	PPL	44.81%	45.09%	45.83%	45.46%	43.43%	43.79%	44.38%	44.67%	44.68%
MEAN		45.49%	45.77%	45.62%	45.05%	44.55%	44.35%	44.74%	44.90%	45.06%
LOW		41.66%	40.45%	40.70%	39.13%	39.19%	38.71%	39.67%	39.61%	39.91%
HIGH		52.22%	52.41%	52.20%	51.93%	51.26%	52.12%	51.64%	51.59%	51.92%

LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES [2]										
Company Name	Ticker	2020Q1	2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	Average
ALLETE (Minnesota Power)	ALE	41.68%	40.41%	40.67%	39.06%	39.13%	38.61%	39.57%	39.67%	39.85%
Superior Water, Light and Power Company	ALE	40.86%	41.92%	41.97%	41.62%	41.24%	42.31%	43.42%	42.66%	42.00%
Interstate Power and Light Company	LNT	47.32%	48.28%	48.44%	46.70%	45.13%	44.51%	48.66%	47.72%	47.10%
Wisconsin Power and Light Company	LNT	43.52%	44.45%	46.51%	50.90%	45.38%	46.04%	46.85%	48.08%	46.47%
Central Maine Power Company	AGR	36.83%	37.50%	37.81%	38.03%	36.33%	36.78%	35.08%	35.75%	36.76%
New York State Electric & Gas Corporation	AGR	47.28%	49.88%	51.21%	42.84%	42.88%	45.02%	45.82%	47.28%	46.52%
Rochester Gas and Electric Corporation	AGR	46.74%	48.05%	49.50%	49.75%	50.04%	51.11%	51.84%	52.24%	49.91%
United Illuminating Company	AGR	41.64%	42.37%	43.10%	42.74%	43.35%	43.54%	38.67%	38.27%	41.71%
Cleveland Electric Illuminating Company	FE	42.54%	43.50%	43.46%	42.90%	43.47%	44.36%	43.50%	43.67%	43.43%
Jersey Central Power & Light Company	FE	30.93%	30.99%	30.93%	30.99%	31.43%	29.70%	29.37%	29.42%	30.47%
Metropolitan Edison Company	FE	51.63%	52.00%	50.28%	51.54%	52.22%	44.59%	44.18%	44.54%	48.87%
Monongahela Power Company	FE	53.79%	52.97%	47.90%	48.32%	49.02%	48.85%	49.29%	46.55%	49.59%
Ohio Edison Company	FE	32.34%	33.23%	30.84%	28.58%	29.18%	30.07%	30.86%	32.67%	30.97%
Pennsylvania Electric Company	FE	50.17%	49.63%	48.22%	49.07%	44.33%	45.19%	44.88%	45.13%	47.08%
Pennsylvania Power Company	FE	48.00%	49.68%	46.91%	48.29%	49.31%	50.97%	40.83%	41.53%	46.94%
Potomac Edison Company	FE	42.61%	44.62%	45.63%	46.67%	46.71%	47.65%	47.08%	47.35%	46.04%
Toledo Edison Company	FE	38.43%	38.80%	39.24%	38.87%	39.22%	39.55%	37.75%	36.82%	38.59%
West Penn Power Company	FE	50.73%	52.26%	53.18%	45.10%	40.31%	43.23%	44.20%	44.16%	46.65%
Hawaiian Electric Company, Inc.	HE	44.12%	43.94%	43.33%	43.23%	44.80%	41.71%	42.81%	43.03%	43.37%
NorthWestern Corporation	NWE	52.22%	52.41%	52.20%	51.93%	51.26%	52.12%	51.64%	51.59%	51.92%
Portland General Electric Company	POR	49.73%	50.15%	48.22%	48.27%	49.40%	49.81%	49.49%	49.71%	49.35%
Kentucky Utilities Company	PPL	45.27%	45.85%	47.02%	47.19%	42.66%	43.19%	44.15%	44.34%	44.96%
Louisville Gas and Electric Company	PPL	43.51%	43.61%	44.89%	45.13%	41.17%	41.39%	42.80%	43.08%	43.20%
PPL Electric Utilities Corporation	PPL	45.19%	45.38%	45.56%	44.48%	45.15%	45.48%	45.35%	45.72%	45.29%

Notes:

[1] Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of Operating Subsidiaries.

[2] Natural Gas and Electric Operating Subsidiaries with data listed as N/A from SNL Financial have been excluded from the analysis.

CAPITAL STRUCTURE ANALYSIS

PREFERRED EQUITY RATIO [1]										
Proxy Group Company	Ticker	2020Q1	2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	Average
ALLETE, Inc.	ALE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Alliant Energy Corporation	LNT	1.74%	1.77%	1.80%	1.85%	1.92%	1.97%	1.98%	2.10%	1.89%
Avangrid, Inc.	AGR	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
FirstEnergy Corporation	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Hawaiian Electric Industries, Inc.	HE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NorthWestern Corporation	NWE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Portland General Electric Company	POR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PPL Corporation	PPL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MEAN		0.22%	0.22%	0.23%	0.23%	0.24%	0.25%	0.25%	0.26%	0.24%
LOW		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HIGH		1.74%	1.77%	1.80%	1.85%	1.92%	1.97%	1.98%	2.10%	1.89%

PREFERRED EQUITY RATIO - UTILITY OPERATING COMPANIES [2]										
Company Name	Ticker	2020Q1	2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	Average
ALLETE (Minnesota Power)	ALE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Superior Water, Light and Power Company	ALE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Interstate Power and Light Company	LNT	2.93%	2.98%	2.99%	3.18%	3.28%	3.38%	3.37%	3.66%	3.22%
Wisconsin Power and Light Company	LNT	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Central Maine Power Company	AGR	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
New York State Electric & Gas Corporation	AGR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rochester Gas and Electric Corporation	AGR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
United Illuminating Company	AGR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cleveland Electric Illuminating Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Jersey Central Power & Light Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Metropolitan Edison Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Monongahela Power Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ohio Edison Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Pennsylvania Electric Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Pennsylvania Power Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Potomac Edison Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Toledo Edison Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
West Penn Power Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Hawaiian Electric Company, Inc.	HE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NorthWestern Corporation	NWE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Portland General Electric Company	POR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Kentucky Utilities Company	PPL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Louisville Gas and Electric Company	PPL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PPL Electric Utilities Corporation	PPL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Notes:

[1] Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of Operating Subsidiaries.

[2] Natural Gas and Electric Operating Subsidiaries with data listed as N/A from SNL Financial have been excluded from the analysis.

CAPITAL STRUCTURE ANALYSIS

SHORT-TERM DEBT RATIO [1]										
Proxy Group Company	Ticker	2020Q1	2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	Average
ALLETE, Inc.	ALE	0.00%	0.00%	0.00%	0.00%	0.04%	0.05%	0.00%	0.00%	0.01%
Alliant Energy Corporation	LNT	1.66%	1.56%	0.08%	0.08%	1.41%	1.61%	0.45%	0.35%	0.90%
Avangrid, Inc.	AGR	3.18%	1.00%	0.38%	0.85%	0.90%	0.42%	2.26%	3.62%	1.58%
FirstEnergy Corporation	FE	2.00%	1.41%	1.21%	2.51%	2.51%	2.52%	2.11%	3.40%	2.21%
Hawaiian Electric Industries, Inc.	HE	2.60%	2.33%	3.02%	4.31%	1.53%	0.73%	2.50%	2.69%	2.47%
NorthWestern Corporation	NWE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Portland General Electric Company	POR	0.38%	0.00%	0.00%	0.34%	0.00%	0.00%	0.00%	0.00%	0.09%
PPL Corporation	PPL	2.11%	2.02%	0.53%	1.52%	3.10%	2.86%	1.71%	1.79%	1.96%
MEAN		1.49%	1.04%	0.65%	1.20%	1.19%	1.02%	1.13%	1.48%	1.15%
LOW		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HIGH		3.18%	2.33%	3.02%	4.31%	3.10%	2.86%	2.50%	3.62%	2.47%

SHORT-TERM DEBT RATIO - UTILITY OPERATING COMPANIES [2]										
Company Name	Ticker	2020Q1	2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	Average
ALLETE (Minnesota Power)	ALE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Superior Water, Light and Power Company	ALE	0.00%	0.00%	0.00%	0.00%	1.36%	1.93%	0.00%	0.00%	0.41%
Interstate Power and Light Company	LNT	0.00%	0.00%	0.00%	0.00%	0.00%	0.85%	0.00%	0.00%	0.11%
Wisconsin Power and Light Company	LNT	4.07%	3.84%	0.19%	0.18%	3.40%	2.67%	1.10%	0.83%	2.04%
Central Maine Power Company	AGR	2.01%	0.00%	0.00%	0.00%	0.41%	0.00%	2.08%	1.96%	0.81%
New York State Electric & Gas Corporation	AGR	5.72%	2.31%	0.00%	2.99%	2.71%	1.49%	0.50%	3.53%	2.41%
Rochester Gas and Electric Corporation	AGR	2.14%	1.52%	0.00%	0.00%	0.00%	0.00%	0.00%	-0.02%	0.45%
United Illuminating Company	AGR	2.19%	0.00%	1.92%	0.00%	0.00%	0.00%	7.44%	10.09%	2.71%
Cleveland Electric Illuminating Company	FE	4.26%	2.97%	1.81%	3.60%	2.21%	0.44%	0.00%	0.06%	1.92%
Jersey Central Power & Light Company	FE	2.61%	2.14%	1.05%	2.43%	1.52%	2.75%	4.22%	5.67%	2.80%
Metropolitan Edison Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	4.69%	3.43%	5.03%	1.64%
Monongahela Power Company	FE	0.00%	1.26%	4.25%	5.13%	3.78%	4.47%	0.00%	3.95%	2.86%
Ohio Edison Company	FE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Pennsylvania Electric Company	FE	0.00%	0.00%	0.00%	0.00%	3.94%	2.01%	2.41%	2.10%	1.31%
Pennsylvania Power Company	FE	4.93%	2.98%	0.00%	0.00%	0.00%	0.00%	2.16%	3.68%	1.72%
Potomac Edison Company	FE	6.32%	2.34%	1.48%	0.73%	0.00%	0.00%	0.00%	0.00%	1.36%
Toledo Edison Company	FE	3.74%	3.62%	0.00%	1.42%	0.00%	0.06%	0.00%	2.47%	1.41%
West Penn Power Company	FE	2.54%	0.10%	1.31%	8.65%	11.05%	7.02%	5.66%	7.83%	5.52%
Hawaiian Electric Company, Inc.	HE	2.60%	2.33%	3.02%	4.31%	1.53%	0.73%	2.50%	2.69%	2.47%
NorthWestern Corporation	NWE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Portland General Electric Company	POR	0.38%	0.00%	0.00%	0.34%	0.00%	0.00%	0.00%	0.00%	0.09%
Kentucky Utilities Company	PPL	2.47%	2.60%	0.04%	0.00%	4.26%	4.35%	2.42%	2.53%	2.33%
Louisville Gas and Electric Company	PPL	3.87%	5.15%	2.20%	2.14%	6.08%	6.35%	4.14%	4.33%	4.28%
PPL Electric Utilities Corporation	PPL	0.96%	0.00%	0.00%	2.21%	0.73%	0.00%	0.00%	0.00%	0.49%

Notes:

[1] Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of Operating Subsidiaries.

[2] Natural Gas and Electric Operating Subsidiaries with data listed as N/A from SNL Financial have been excluded from the analysis.