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Proceeding: 2023 Cost of Capital
Application: A.22-04-XXX
Exhibit No.: SDG&E-04

PREPARED DIRECT TESTIMONY OF
JAMES M. COYNE - RETURN ON EQUITY
ON BEHALF OF
SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA



APRIL 20, 2022

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**PREPARED DIRECT TESTIMONY
OF JAMES M. COYNE
ON BEHALF OF
SAND DIEGO GAS & ELECTRIC COMPANY**

I. INTRODUCTION AND SUMMARY

Q. Please state your name and business address.

A. My name is James M. Coyne, and I am employed by Concentric Energy Advisors, Inc. (“Concentric”) as a Senior Vice President. Concentric is a management consulting and economic advisory firm, focused on the North American energy and water industries. Based in Marlborough, Massachusetts and Washington, D.C., Concentric specializes in regulatory and litigation support, financial advisory services, energy market strategies, market assessments, energy commodity contracting and procurement, economic feasibility studies, and capital market analyses. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

Q. On whose behalf are you testifying?

A. I am submitting this testimony to the California Public Utilities Commission (“CPUC” or the “Commission”) on behalf San Diego Gas & Electric Company (“SDG&E” or the “Company”), which is a wholly-owned subsidiary of Sempra Energy.

Q. Please describe your experience in the energy and utility industries and your educational and professional qualifications.

A. I am among Concentric’s professionals who provide expert testimony before federal, state, and Canadian provincial agencies on matters pertaining to economics, finance, and public policy in the energy industry. I regularly advise regulatory agencies, utilities, generating companies, and private equity investors on business issues pertaining to the utility industry. This work includes calculating the cost of capital for the purpose of

1 ratemaking and providing expert testimony and studies on matters pertaining to rate
2 policy, valuation, capital costs, and performance-based regulation. I have authored
3 numerous articles on the energy industry, lectured on utility regulation for regulatory
4 commission staff, and provided testimony before the Federal Energy Regulatory
5 Commission (“FERC”), the Canadian Energy Regulator (“CER”), as well as state and
6 provincial jurisdictions in the U.S. and Canada, including the CPUC. I hold a B.S. in
7 Business Administration from Georgetown University and an M.S. in Resource
8 Economics from the University of New Hampshire. My educational and professional
9 background is summarized more fully in Exhibit JMC-1.

10 **Q. Are you sponsoring any exhibits in this case?**

11 A. Yes. My analyses and recommendations are supported by the data presented in Exhibits
12 JMC-2 through JMC-10, which have been prepared by me or under my direction. I am
13 sponsoring the following exhibits:

- 14 • JMC-2 Comprehensive Summary of ROE Results
- 15 • JMC-3 Proxy Group Screening Analysis
- 16 • JMC-4 Constant Growth DCF Analysis
- 17 • JMC-5.1 Market Risk Premium
- 18 • JMC-5.2 CAPM Analysis
- 19 • JMC-6 Risk Premium Analysis
- 20 • JMC-7 Expected Earnings Analysis
- 21 • JMC-8 Capital Expenditures Analysis
- 22 • JMC-9 Regulatory Risk Assessment
- 23 • JMC-10 Capital Structure Analysis

1 **Q. What is the purpose of your testimony?**

2 A. The purpose of my direct testimony is to present evidence and provide a recommendation
3 for SDG&E's return on equity ("ROE"). My direct testimony also discusses the
4 Company's capital structure in comparison to the proxy group companies supporting my
5 analysis.

6 **II. OVERVIEW AND SUMMARY**

7 **Q. What is your conclusion regarding the appropriate cost of equity for SDG&E?**

8 A. I have estimated SDG&E's ROE based on the results from four alternative models: the
9 Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the
10 Bond Yield Plus Risk Premium model, and the Expected Earnings model. As shown in
11 Exhibit JMC-2, these models produce a range of estimates of SDG&E's cost of equity,
12 with a four-model average of 10.72 percent or 10.89 percent, depending on whether
13 current or projected interest rates are utilized. Based on these analyses, I consider an
14 ROE range of 10.40 percent to 11.40 percent to be reasonable. Considering the
15 Company's specific risk profile, the Company's requested ROE of 10.55 percent
16 sponsored by Valerie Bille (SDG&E-01) is reasonable, if not conservative.

17 **Q. Please provide a brief overview of the analyses that you conducted to support your**
18 **ROE recommendation.**

19 A. As mentioned, my ROE recommendation is based on the range of results produced from
20 four modeling methodologies. Analysts and academics understand that ROE models are
21 tools to be used in the ROE estimation process, and that strict adherence to any single
22 approach, or the specific results of any single approach, can lead to flawed conclusions.
23 No model can exactly pinpoint the correct cost of equity, but each is designed to provide
24 an estimate of the return required to attract equity investment. Therefore, my analysis

1 considers the range of results produced by these four different models. From within that
2 range, regulators use informed judgment to select an authorized ROE that takes into
3 consideration the relevant risk factors, as well as capital market conditions in order to
4 determine a fair return. The DCF analysis estimates the cost of equity based on market
5 data on dividend yields and analysts' projected earnings per share growth rates from
6 reputable third-party sources. The CAPM analysis is based on both current and
7 forecasted interest rates and a forward-looking market risk premium. The Risk Premium
8 approach is based on the spread between authorized ROEs for electric and gas utilities
9 and Treasury bond yields. The Expected Earnings approach is based on projected returns
10 on book equity that investors expect to receive over the next three to five years. My ROE
11 range recommendation is ultimately based on the range of results produced by these four
12 methodologies.

13 My recommendation also considers the general economic and capital market environment
14 and the influence capital market conditions exert over the results of the DCF, CAPM and
15 Risk Premium models. In addition, I consider the Company's business and regulatory
16 risks in relation to a set of proxy companies to assist in the determination of the
17 appropriate ROE and capital structure from within the range of analytical results. Based
18 on the risk factors I have analyzed, and considering the Company's risk profile in relation
19 to the results for an average risk utility represented by the proxy group companies, my
20 analysis indicates SDG&E is above average risk.

1 **Q. Your ROE recommendation for SDG&E is higher than the Company’s currently**
2 **authorized ROE. Please summarize the primary factors that support this view.**

3 A. SDG&E’s current ROE of 10.20 percent was authorized in December 2019. While
4 interest rates on government and corporate bonds declined to historically low levels in
5 2020 and 2021 due to the COVID-19 pandemic and the federal government and Federal
6 Reserve’s extraordinary intervention to keep interest rates low to minimize the
7 pandemic’s economic impacts, they have since rebounded. Interest rates are projected to
8 increase as fiscal and monetary stimulus continue to unwind, the economy reaches pre-
9 pandemic levels, and the Federal Reserve shifts from reducing interest rates during the
10 pandemic to combating sustained inflation. The consumer price index rose by 7.9
11 percent through February, the fastest pace of annual inflation in over 40 years.¹ In
12 November 2021, the Federal Reserve began curtailing its extensive amount of
13 “quantitative easing,” where the Federal Reserve purchases government and corporate
14 bonds from banks to support the flow of credit. On March 16, 2022, the Federal Reserve
15 announced a 25-basis point increase in the federal funds rate, from 0.00 percent to 0.25
16 percent to 0.25 percent to 0.50 percent—its first increase in the federal funds rate (which
17 impacts all other interest rates) since reducing the rate to zero in March 2020—while
18 projecting six more rate hikes this year and a further reduction in quantitative easing.²

19

¹ The New York Times, *Surging U.S. Inflation Raises Stakes as War Pushes Up Prices* (March 10, 2022), available at <https://www.nytimes.com/2022/03/10/business/economy/cpi-inflation-february-2022.html>.

² Federal Reserve Gov, *Federal Reserve issues FOMC statement* (March 16, 2022) (“Federal Reserve Mar. 16, 2022”), available at <https://www.federalreserve.gov/newsevents/pressreleases/monetary20220316a.htm>.

1 Simultaneously, other risk factors indicate that equity investors now require a higher rate
2 of return from utility investments. Among these factors, the industry—SDG&E and
3 California utilities in particular—faces complex structural challenges associated with
4 climate change, decarbonization, grid modernization, and shifting consumer preferences
5 amid a flat overall demand outlook.

6 Since the Commission’s 2019 decision, volatility in equity markets has reached levels not
7 seen since the financial crisis of 2008/2009. Credit spreads between government and
8 utility bonds increased to levels well above their historical average, and the correlation
9 between utility share prices and the broader market has increased, which reflects the fact
10 that investors have not viewed the utility sector as a safe-haven during the economic
11 downturn resulting from the pandemic. Beta coefficients (which are the measure of risk
12 in the CAPM analysis) have increased substantially for both electric and natural gas
13 utilities compared to the overall market since the Commission’s prior decision.

14 Furthermore, as noted, the economic stimulus provided through monetary and fiscal
15 policy has resulted in higher inflationary pressures, with correspondingly higher levels of
16 interest rates. Taken together, these factors drive higher estimates of the cost of equity
17 than those considered by the Commission in 2019.

18 **Q. How is the remainder of your Direct Testimony organized?**

19 A. The remainder of my Direct Testimony is organized as follows. Section III provides
20 background on the regulatory principles that guide the determination of ROE. Section IV
21 presents a review of current and prospective economic and capital market conditions and
22 the implications for utility cost of capital. Section V describes the criteria and approach
23 for the selection of a proxy group of comparable companies. Section VI provides a

1 description of the data and methodologies used to estimate the cost of equity, as well as
2 the results of the various ROE estimation models. Section VII provides an assessment of
3 the business and regulatory risk factors I have considered in arriving at an appropriate
4 ROE for SDG&E. Section VIII reviews SDG&E's capital structure in the context of the
5 proxy group. Finally, Section IX summarizes my results, conclusions, and
6 recommendation.

7 **III. REGULATORY PRINCIPLES**

8 **Q. Please describe the guiding principles used in establishing the cost of capital for a**
9 **regulated utility.**

10 A. The foundations of public utility regulation require that utilities receive a fair rate of
11 return sufficient to attract capital, maintain the financial integrity of the company, and
12 provide investors with returns comparable to those of equivalent risk. The basic tenets of
13 this regulatory doctrine originate from several bellwether decisions by the United States
14 Supreme Court, notably *Bluefield Waterworks and Improvement Company v. Public*
15 *Service Commission of West Virginia*, 262 U.S. 679 (1923) ("*Bluefield*"), and *Federal*
16 *Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944) ("*Hope*"). In
17 *Bluefield*, the Court stated:

18 A public utility is entitled to such rates as will permit it to earn a return on
19 the value of the property which it employs for the convenience of the
20 public equal to that generally being made at the same time and in the same
21 general part of the country on investments in other business undertakings
22 which are attended by corresponding risks and uncertainties...

23 The return should be reasonably sufficient to assure investor confidence in
24 the financial soundness of the utility and should be adequate, under
25 efficient and economical management, to maintain and support its credit
26 and enable it to raise the money necessary for the proper discharge of its
27 public duties.

1 Later, in *Hope*, the Court established a standard for the ROE that remains the guiding
2 principle for ratemaking regulatory proceedings to this day:

3 [T]he return to the equity owner should be commensurate with returns on
4 investments in other enterprises having corresponding risks. That return,
5 moreover, should be sufficient to assure confidence in the financial
6 integrity of the enterprise, so as to maintain its credit and to attract capital.

7 **Q. Has the Commission provided similar guidance?**

8 A. Yes, the Commission applies these same legal standards in setting the cost of capital for
9 utilities under its jurisdiction. In doing so, the Commission summarizes:

10 We attempt to set the ROE at a level of return commensurate with market
11 returns on investments having corresponding risks, and adequate to enable
12 a utility to attract investors to finance the replacement and expansion of a
13 utility's facilities to fulfill its public utility service obligation. To
14 accomplish this objective, we have consistently evaluated analytical
15 financial models as a starting point to arrive at a fair ROE.³

16 **Q. Please explain how these principles apply in the context of the regulated rate of
17 return.**

18 A. Regulated utilities rely primarily on common equity and long-term debt to finance
19 permanent property, plant, and equipment. The allowed rate of return for a regulated
20 utility is based on its weighted average cost of capital, where the costs of the individual
21 sources of capital (*i.e.*, debt and equity) are weighted by their respective book values.
22 The ROE represents the cost of raising and retaining equity capital and is estimated by
23 using one or more analytical techniques that use market data to quantify investor
24 requirements for equity returns. However, the ROE cannot be derived through
25 quantitative metrics and models alone. To properly estimate the ROE, the financial,
26 regulatory, and economic context must also be considered.

³ Decision ("D.") 12-12-034 at 18; D.19-12-056 at 16; *see generally* D.08-05-035 at 6.

1 The DCF, CAPM, Risk Premium, and Expected Earnings approaches, while fundamental
2 to the ROE determination, are still only models. The results of these models cannot be
3 mechanistically applied without also using informed judgment to consider economic and
4 capital market conditions and the relative risk of SDG&E as compared to the proxy group
5 companies.

6 Based on these legal and regulatory standards, the Commission's order in this case should
7 provide SDG&E with the opportunity to earn a return on equity that is:

- 8 • Commensurate with returns on investments in enterprises having comparable risks;
- 9 • Adequate to attract capital on reasonable terms, thereby enabling SDG&E to
10 provide safe, reliable service; and
- 11 • Sufficient to ensure the financial soundness of SDG&E's electric and gas utility
12 operations.

13 Importantly, a fair return must satisfy all three of these standards. The allowed ROE
14 should enable SDG&E to finance capital expenditures on reasonable terms and provide
15 the Company with the ability to raise capital under a full range of capital market
16 circumstances, which benefits both the Company and its customers.

17 **Q. What are your conclusions regarding regulatory principles?**

18 A. The ratemaking process is premised on the principle that, in order for investors and
19 companies to commit the capital needed to provide safe and reliable utility services, the
20 utility must have the opportunity to recover invested capital and the market-required
21 return on that capital. Because utility operations are capital-intensive, regulatory
22 decisions should enable the utility to attract capital on favorable terms. The financial
23 community carefully monitors the current and expected financial condition of utility

1 companies as well as the regulatory environment in which they operate. In that respect,
2 the regulatory environment is one of the most important factors considered by both debt
3 and equity investors in their assessments of risk. It is therefore essential that the ROE
4 authorized in this proceeding takes into consideration the current and expected capital
5 market conditions that SDG&E faces, as well as investors' expectations and requirements
6 regarding both risks and returns. A reasonable ROE is required both for continued
7 capital investment by SDG&E and to maintain confidence in California's regulatory
8 environment among credit rating agencies and investors.

9 The cost of equity is a true cost in the capital market, where investors face many choices.
10 Setting an ROE that fairly represents the true cost of equity balances the interest of both
11 ratepayers as well as shareholders. If ROE is set too low it harms both investors and
12 ratepayers, as it impairs the financial health and integrity of the utility such that they are
13 unable to make the investments they need to maintain the safety, integrity, and reliability
14 of the system—such as through wildfire mitigation—in addition to meeting important
15 public policy goals. This, in turn, requires utilities to rely more on debt to finance
16 investments, which can reduce credit ratings, further increasing costs to ratepayers.

17 **IV. ECONOMIC AND CAPITAL MARKET CONDITIONS**

18 **Q. Why is it important to consider the effects of current and expected economic and** 19 **financial market conditions when setting the appropriate ROE?**

20 A. It is important to consider current and expected conditions in the general economy and
21 financial markets because the authorized ROE for a public utility should allow the utility
22 to attract investor capital at a reasonable cost under a variety of economic and financial
23 market conditions, as underscored by the *Hope* and *Bluefield* decisions. The standard
24 ROE estimation tools, such as the DCF, CAPM, Risk Premium, and Expected Earnings

1 models, each reflect the state of the general economy and financial markets by
2 incorporating specific economic and financial data. These inputs are, however, only
3 samples of the various economic and market forces that determine a utility's required
4 return. Consideration must be given to whether the assumptions relied on in the current
5 or projected market data are appropriate. If investors do not expect current market
6 conditions to be sustained in the future, it is possible that the ROE estimation models will
7 not provide an accurate estimate of investors' forward-looking required return.
8 Therefore, an assessment of current and projected market conditions is integral to any
9 ROE recommendation.

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

12 A. The cost of equity for regulated utility companies is being affected by several key factors
13 in the current and prospective capital markets including ongoing uncertainty and
14 volatility in equity markets, as well as the economic recovery and inflation risk in 2022
15 and beyond. In this section, I discuss each of these factors and how it affects the models
16 used to estimate the cost of equity for regulated utilities.

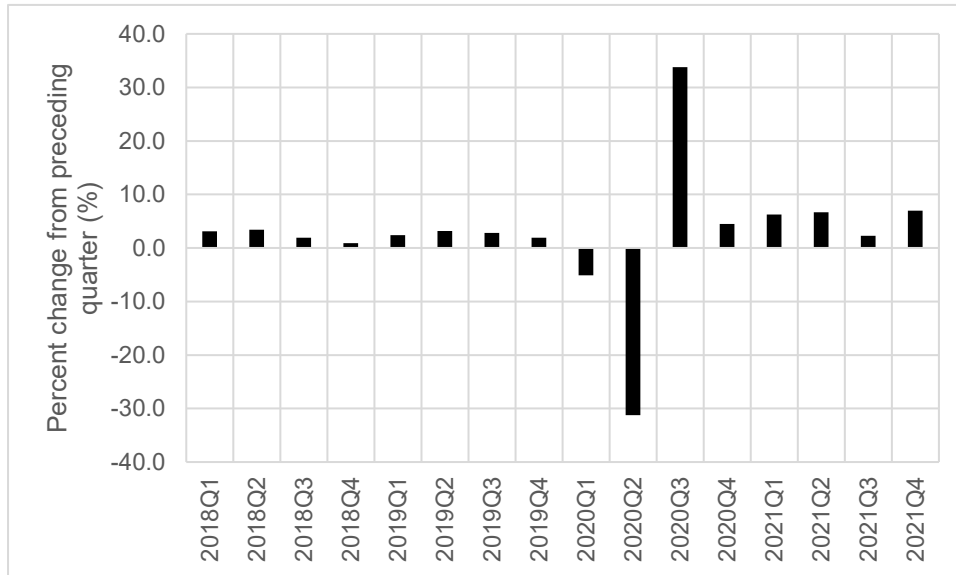
17 **A. Ongoing Uncertainty and Volatility in Capital Markets**

18 **Q. Please discuss economic and capital market conditions.**

19 A. Capital market conditions have been significantly impacted by the economic impacts of
20 the COVID-19 pandemic, and most recently, the Russian invasion of Ukraine. Federal
21 measures taken to contain the economic fallout from COVID-19 were extraordinary by
22 any measure. As shown in Figure 1, over the past two years real gross domestic product
23 ("GDP") has been extremely volatile, tracking from an unprecedented decline of 31.2

1 percent to growth of 33.8 percent in 2020, and more recently settling to an average
2 annual growth rate of 5.7 percent in 2021.⁴

3 **Figure 1: U.S. Real GDP Growth – 2018Q1-2021Q4⁵**



4
5
6 To spare consumers and businesses from this sharp decline, the federal government and
7 Federal Reserve took a series of unprecedented steps to stabilize financial markets.

8 While utilities have traditionally been a “safe-haven” for investors, that has not been true
9 during the COVID-19 pandemic. Capital market conditions changed dramatically in
10 2020 and 2021, resulting in greater risk for investors in both the broader equity market
11 and utility stocks.

⁴ U.S. Bureau of Economic Analysis (BEA), *Gross Domestic Product (Third Estimate), Corporate Profits, and GDP by Industry, 4th Quarter and Year 2021* (March 30, 2022) available at [https://www.bea.gov/news/2022/gross-domestic-product-third-estimate-corporate-profits-and-gdp-industry-fourth-quarter#:~:text=Real%20gross%20domestic%20product%20\(GDP,real%20GDP%20increased%20.3%20percent.](https://www.bea.gov/news/2022/gross-domestic-product-third-estimate-corporate-profits-and-gdp-industry-fourth-quarter#:~:text=Real%20gross%20domestic%20product%20(GDP,real%20GDP%20increased%20.3%20percent.)

⁵ U.S. Bureau of Economic Analysis (BEA), *Gross Domestic Product (Third Estimate), Corporate Profits (Revised Estimate), and GDP by Industry, Third Quarter 2021* (December 22, 2021), available at <https://www.bea.gov/news/2021/gross-domestic-product-third-estimate-gdp-industry-and-corporate-profits-revised-3rd.>

1 **Q. What steps did the Federal Reserve and the U.S. Congress take to stabilize financial**
2 **markets and support the economy in response to COVID-19?**

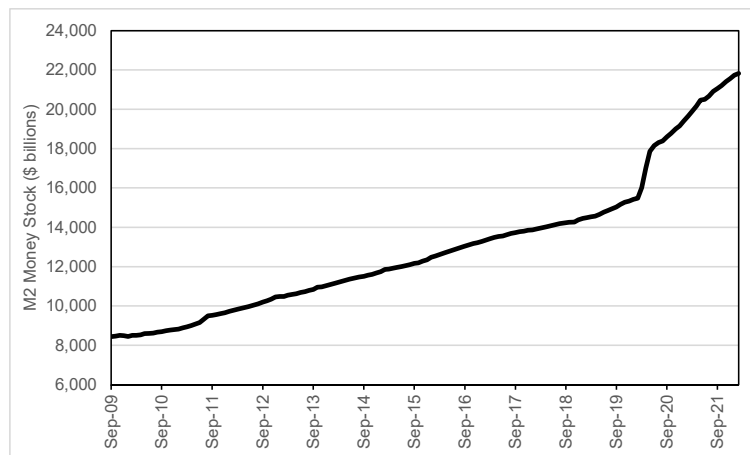
3 A. In response to the economic effects of COVID-19, the Federal Reserve decreased the
4 federal funds rate (which influences all other interest rates) twice in March 2020,
5 resulting in a target range of 0.00 percent to 0.25 percent (which remained in effect until
6 March 2022), and also announced plans to increase its holdings of both Treasury and
7 mortgage-backed securities. From December 2020 through November 2021, the Federal
8 Reserve purchased at least \$80 billion per month of Treasury securities and at least \$40
9 billion per month of mortgage-backed securities to support the flow of credit to
10 households and businesses during the pandemic.⁶ In addition, on March 23, 2020, the
11 Federal Reserve began expansive programs to support credit to large employers,
12 including the Primary Market Corporate Credit Facility (“PMCCF”) to provide liquidity
13 for new issuances of corporate bonds, and the Secondary Market Corporate Credit
14 Facility (“SMCCF”) to provide liquidity for outstanding corporate debt issuances.
15 Further, the Federal Reserve supported the flow of credit to consumers and businesses
16 through the Term Asset-Backed Securities Loan Facility (“TALF”).⁷
17 These “quantitative easing” programs allowed the Federal Reserve to purchase
18 government bonds and corporate bonds from banks. The banks then received cash from
19 the Federal Reserve, which resulted in an expansion of the money supply. This increase

⁶ CNBC, *Fed will aggressively dial back its bond buying, sees three rate hikes next year* (December 15, 2021), available at <https://www.cnbc.com/2021/12/15/fed-will-aggressively-dial-back-its-monthly-bond-buying-sees-three-rate-hikes-next-year.html>.

⁷ Federal Reserve Gov, *Federal Reserve announces extensive new measures to support the economy* (March 23, 2020), available at <https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm> .

1 in the money supply kept short-term interest rates low and increased the ability of banks
2 to lend to consumers and businesses. Investors in longer term bonds also responded,
3 which affected the entire duration of the bond yield curve, from very near-term rates to
4 30-year yields. As shown in Figure 2, the programs enacted by the Federal Reserve
5 resulted in an unprecedented expansion of the money supply as measured by M2.⁸ That
6 expansion was far greater than the increase following the Federal Reserve’s response to
7 the Great Recession of 2008/2009. This demonstrates the level of intervention that was
8 necessary to provide some stability to capital markets amidst the extraordinary
9 circumstances associated with COVID-19.

10 **Figure 2: M2 Money Stock – September 2009 – February 2022⁹**



11 **Q. Please summarize the fiscal policy response from the U.S. Congress.**

12 **A.** In addition to the Federal Reserve’s response, the U.S. Congress passed approximately
13 \$4.5 trillion in fiscal stimulus programs. On March 27, 2020, the Coronavirus Aid,
14

⁸ M2 is defined by the Federal Reserve as follows: M2 includes a broader set of financial assets held principally by households. M2 consists of M1 plus: (1) savings deposits (which include money market deposit accounts, or MMDAs); (2) small-denomination time deposits (time deposits in amounts of less than \$100,000); and (3) balances in retail money market mutual funds (MMMFs).

⁹ Federal Reserve Bank of St. Louis, Board of Governors of the Federal Reserve System (US), M2 Money Stock [M2] (March 22, 2022), available at <https://fred.stlouisfed.org/series/M2SL>.

1 Relief, and Economic Security Act was signed into law, providing a large fiscal stimulus
2 package aimed at mitigating the economic effects of the coronavirus. Further, in March
3 2021, the U.S. Congress approved additional fiscal stimulus of \$1.9 trillion in response to
4 the ongoing economic effects of COVID-19.

5 The extraordinary measures taken by the Federal Reserve and U.S. Congress to support
6 the economy and stabilize financial markets have distorted bond markets (deliberately
7 driving government and corporate yields lower) and equity markets (creating upward
8 pressure on valuations and downward pressure on yields for dividend paying companies
9 such as utilities). In March 2020, for the first time on record, the yield on a 10-year
10 treasury bond dropped below 1.0 percent,¹⁰ and remained below 1.0 percent for the
11 remainder of 2020.¹¹ The 10-year treasury bond yield remained low throughout 2021,
12 beginning the year below 1.0 percent, ending the year at 1.52 percent with an average of
13 1.45 percent.¹² Before the onset of COVID-19, the 10-year Treasury yield had reached
14 levels as low as 1.45 percent on only two occasions: July 24-25, 2012 and July 5-11,
15 2016. Moreover, these fiscal stimulus programs have increased inflationary pressures, as
16 evidenced in the sharp run-up in inflation and corresponding upward spike in bond yields
17 since late November 2021.

¹⁰ Federal Reserve Bank of St. Louis, Board of Governors of the Federal Reserve System (US), Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity (April 15, 2022), available at <https://fred.stlouisfed.org/series/DGS10>.

¹¹ U.S. Department of the Treasury, Interest Rate Statistics, available at <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/pages/TextView.aspx?data=yieldYear&year=2020>.

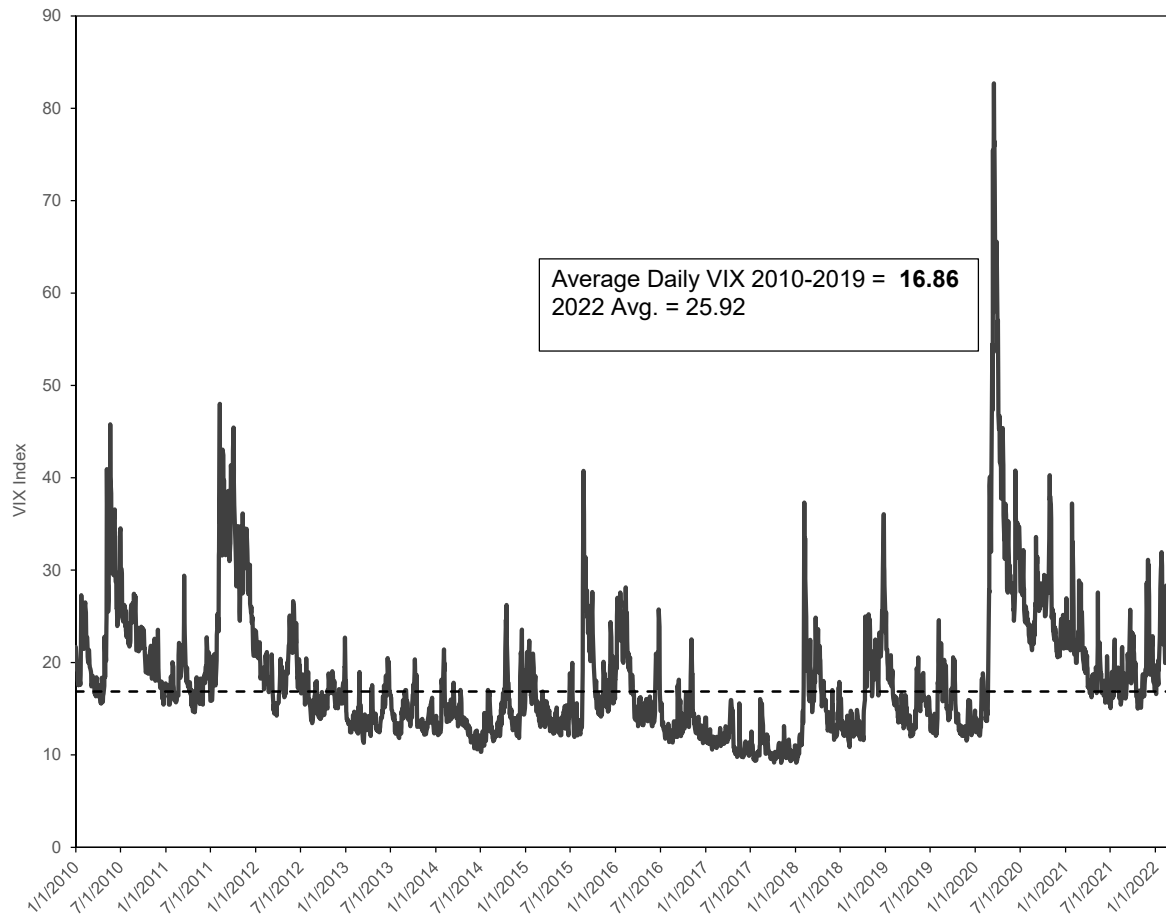
¹² U.S. Department of the Treasury, Interest Rate Statistics, available at <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/pages/TextView.aspx?data=yieldYear&year=2021>.

1 **Q. Are conditions expected to stabilize in the near-term?**

2 A. The economy remains in a tenuous recovery phase of the business cycle. Recent global
3 events associated with the Russian invasion of Ukraine has caused further uncertainty.
4 As such, capital market conditions continue to be unstable with expectations for inflation
5 and interest rates to increase; with the latter evidenced by the Federal Reserve’s recently
6 curtailing quantitative easing and, on March 16, 2022, enacting the first of several
7 planned rate hikes. While expansive monetary and fiscal programs provided for some
8 price stability, as shown in Figure 3, the Chicago Board Options Exchange (“CBOE”) Volatility
9 Index (“VIX”) has remained above long-term historical levels, indicating stock
10 investors remain anxious about the economy and company earnings. The VIX, a measure
11 of expected price fluctuations in the S&P 500, reached 82.69 on March 16, 2020 in
12 response to the pandemic. As a point of comparison, the VIX last traded above 80 in
13 November 2008 during the financial crisis and Great Recession of 2008/09. The VIX
14 continued to exceed levels above 35.00 in 2021 and in 2022 has averaged 25.92 through
15 March 15, 2022, compared to the long-term average of 16.86 from 2010-2019. This
16 indicates that equity market volatility levels have partially settled but continue to remain
17 above the historical mean.

1

Figure 3: CBOE VIX – January 1, 2010 – March, 15, 2022¹³



2

3 **Q. Has the cost of equity for utility companies been affected by the circumstances**
4 **surrounding the pandemic and the federal government’s response?**

5 A. Yes. The cost of equity for regulated utility companies has been affected by the dramatic
6 shifts in market conditions during 2020, and the subsequent economic recovery. There
7 have been two primary impacts on utility stocks during this period. First, the relative risk
8 of utility company stocks has trended more in-line with the broader market since
9 February 2020 when the COVID-19 pandemic became a concern in financial markets.

¹³ Source: Bloomberg Professional.

1 This higher risk is reflected in the Beta coefficients, which are the measure of risk in the
 2 CAPM, where an is the market average and where higher betas translate to greater risk
 3 and higher required equity returns. Beta coefficients increased substantially between
 4 January 2020 and February 2022 for the utility companies used in my cost of capital
 5 analysis. Figure 4 presents the average Value Line and Bloomberg Beta coefficients for
 6 my proxy group companies and Sempra Energy over this period. Higher Beta
 7 coefficients for utilities signal an increase in relative risk, and therefore a higher required
 8 return to justify taking on those risks. These higher Beta coefficients reflect direct
 9 market evidence of an increase in cost of equity for utilities (as measured with the CAPM
 10 model). Increases in utility Beta coefficients are likewise observable for shorter
 11 measurement periods and even when you remove the most volatile periods at the
 12 pandemic's outset (February-April 2020). Investors have not viewed the utilities sector
 13 as a safe-haven during the capital market conditions associated with COVID-19. And
 14 even though bond yields have declined, the cost of equity has increased.

15 **Figure 4: Beta Coefficients for Proxy Group and Sempra Energy**

	January 2020	February 2022
<i>Proxy Group Average</i>		
Value Line Beta	0.56	0.88
Bloomberg Beta	0.532	0.873
<i>Sempra Energy</i>		
Value Line Beta	0.70	0.95
Bloomberg Beta	0.633	0.912

16

1 The second impact on utility stocks is the relative underperformance of utility stocks
2 compared to the broader market.

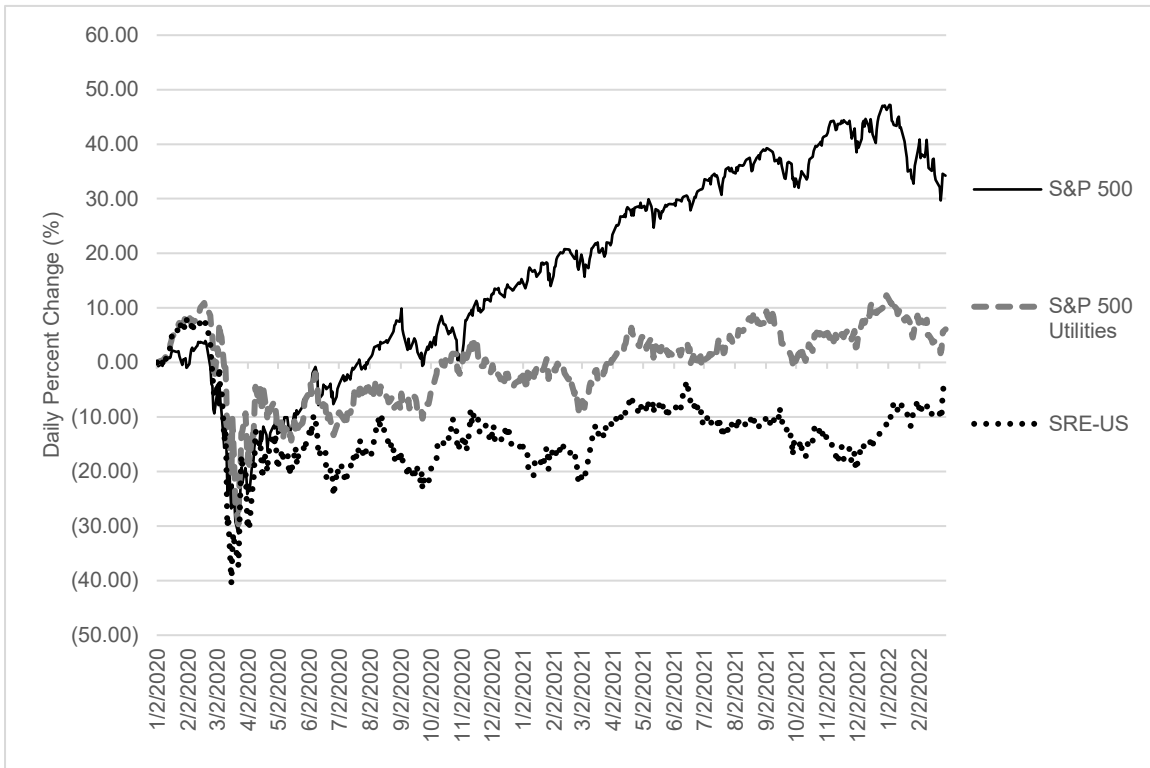
3 **Q. How have utilities performed relative to the broader equity market since the onset of**
4 **COVID-19?**

5 A. While the overall market has surpassed its pre-pandemic levels, the same is not true with
6 the utility sector. The S&P Utilities sector was one of the worst performing market
7 sectors in 2020, declining by 7.49 percent from the mid-February peak as compared to a
8 12.57 percent increase for the S&P 500. The only market sectors that underperformed
9 utilities in 2020 were real estate (down 8.30 percent) and energy (down 26.31 percent).
10 At the end of 2020, seven of the other eight market sectors were above their mid-
11 February 2020 levels, led by technology (up 28.09 percent), consumer discretionary (up
12 22.92 percent), and materials (up 22.26 percent).¹⁴ By the end of 2021, the S&P 500 had
13 substantially recovered and had increased more than 40 percent above its pre-pandemic
14 levels. However, over that same time period, the S&P Utilities Index had only increased
15 12 percent. Figure 5 compares the daily performance of the S&P 500 stock market index
16 and the S&P Utilities Index as of February 28, 2022. Performance is shown as the
17 percentage gain from January 1, 2020. As Figure 5 shows, the S&P 500 has largely
18 recovered as it now exceeds its pre-COVID-19 levels. However, the S&P Utilities Index
19 and Sempra Energy's stock price significantly lag the broader market compared to pre-
20 pandemic levels. A decline in stock price indicates that investors are treating the sector
21 with greater caution as they sort through the implications of the shifting economic
22 environment on utilities. Just as an increase in Beta signals an increase in the cost of

¹⁴ Comparison from February 19, 2020 through December 31, 2020.

1 equity in the CAPM model, a decline in stock price indicates an increase in the cost of
2 equity in the DCF model. These are consistent messages from the market data.

3 **Figure 5: Relative Performance of Utilities and the S&P 500,**
4 **January 2020 – February 2022¹⁵**



5
6 **Q. How has the current economic environment affected the credit ratings for utilities?**

7 A. According to S&P Global, credit ratings for North American utilities “weakened sharply
8 in 2020”, and “[t]he percentage of North American regulated utilities with a negative
9 outlook or on CreditWatch with negative implications surged from 18% in 2019 to 36%
10 in 2020”, and “the number of downgrades exceeded the number of upgrades by a wide
11 margin in 2020 for the first time since 2010.” On the causes of the weakening credit
12 profiles, S&P stated: “The main causes of weakening credit quality reflected

¹⁵ Source: S&P Capital IQ Pro.

1 environment, social, and governance (ESG) risks, regulatory issues, and companies’
2 practice of strategically managing financial measures close to their downgrade threshold
3 with little or no cushion”, and the COVID-19 pandemic “was not the culprit for weaker
4 credit quality” the report states.¹⁶ Updating its view, a more recent report focused on the
5 impacts of sustained inflation, S&P concluded “[u]nfortunately for many utilities in the
6 sector, the threat of inflation comes at a time when credit metrics are already under
7 pressure relative to downside ratings thresholds.” S&P added that “[t]his comes as
8 companies in the sector have already added record levels of debt to offset historically
9 high capital spending aimed at modernizing the grid, building new transmission lines,
10 reducing coal generation, and adding renewable power investments,” and concludes
11 “[t]aken together, if inflation increases last longer than currently expected, we could see
12 somewhat reduced profitability from regulatory lag coupled with higher interest rates and
13 increasing debt burdens. These factors could add to an already downward trajectory in
14 key credit metrics in the sector.” Among the utilities identified in the report as operating
15 with a “minimal financial cushion” and more susceptible to these risks, is Sempra
16 Energy:

17 We expect companies operating with minimal financial cushion will be
18 more susceptible to rising inflation risks and regulatory lag. We believe
19 this would likely include Sempra Energy, Edison International, PG&E
20 Corp., Consolidated Edison Inc., Southern Co., and Puget Energy Inc. All
21 of these companies currently have a negative outlook and have been
22 consistently operating with less than 100 basis points of cushion from their
23 funds from operations to debt downgrade threshold. Additionally, they are
24 operating with negative discretionary cash flow reflecting their robust
25 capital spending plans. This spending is earmarked for costs involved in

¹⁶ S&P Global, *Utility sector's credit ratings weakened sharply in 2020: S&P Global Ratings* (January 21, 2021), available at <https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/012121-utility-sectors-credit-ratings-weakened-sharply-in-2020-sampp-global-ratings>.

1 reducing their carbon footprint, enhancing safety and reliability, and, in
2 the case of California's utilities, wildfire mitigation technology.¹⁷

3 While the views of rating agencies represent an important consideration, they are not the
4 only factor that equity investors consider. The important distinction is that credit rating
5 agencies are primarily focused on the ability of a utility to pay its debts, while equity
6 analysts and institutional investors are more concerned with profitability and value
7 creation.

8 **Q. Have utility commissions recognized that the pandemic's low interest rate
9 environment did not reflect the same reduction in utilities' cost of equity?**

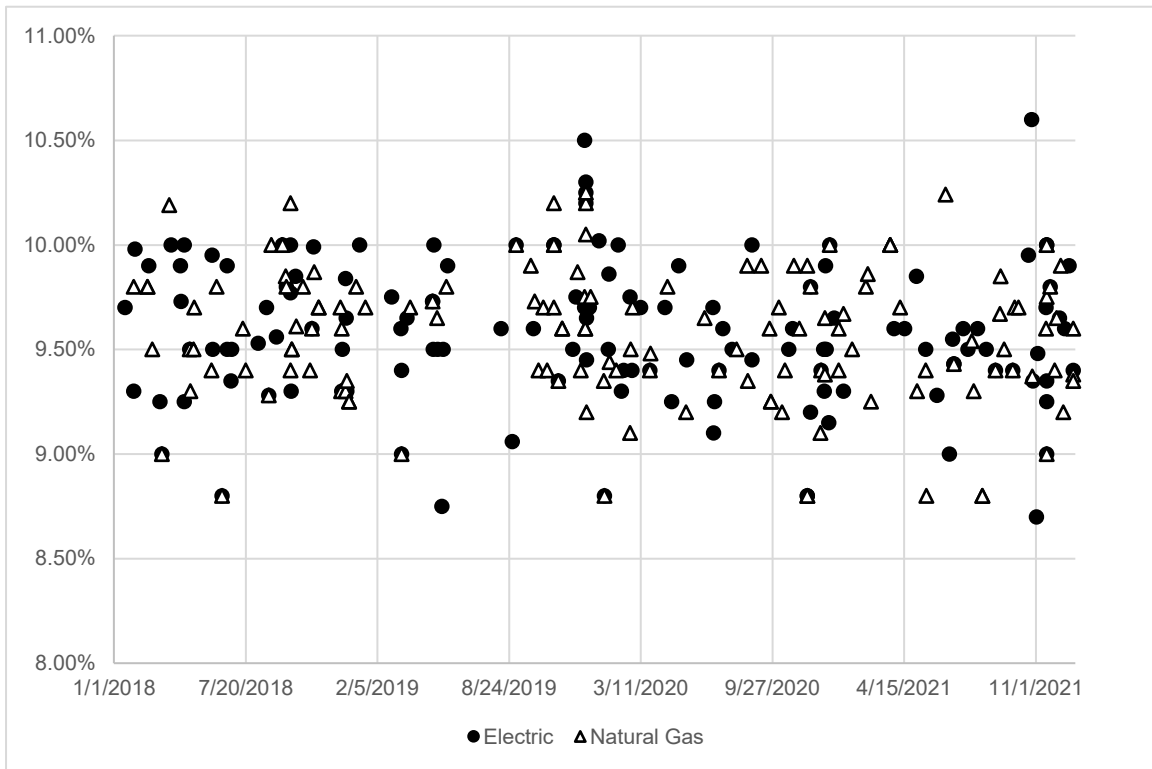
10 A. Yes. Figure 6 demonstrates that authorized returns for utilities have largely been
11 consistent since the last cost of capital decision, with the 12-month average authorized
12 ROE remaining within 9.47 percent to 9.71 percent for electric utilities. As S&P
13 recently recognized, “[s]tate utility commissions have recognized that long-term bond
14 yields have been artificially suppressed due to the Fed’s unprecedented intervention in the
15 capital markets. As such, authorized returns have been somewhat resistant to the decline
16 in interest rates.”¹⁸

¹⁷ S&P Global, *Will Rising Inflation Threaten North American Investor-Owned Regulated Utilities' Credit Quality?* (July 20, 2021), available at <https://www.spglobal.com/ratings/en/research/articles/210720-will-rising-inflation-threaten-north-american-investor-owned-regulated-utilities-credit-quality-12010362>.

¹⁸ See S&P, *The Big Picture: 2022 Electric, Natural Gas and Water Utilities Outlook* (Oct 2021) (“S&P Oct. 2021 Report”) at 5 (expecting that ROEs may increase as interest rates rise), available at <https://www.spglobal.com/marketintelligence/en/news-insights/blog/the-big-picture-2022-electric-natural-gas-and-water-utilities-outlook>.

1

Figure 6: Authorized ROEs 2018-2021



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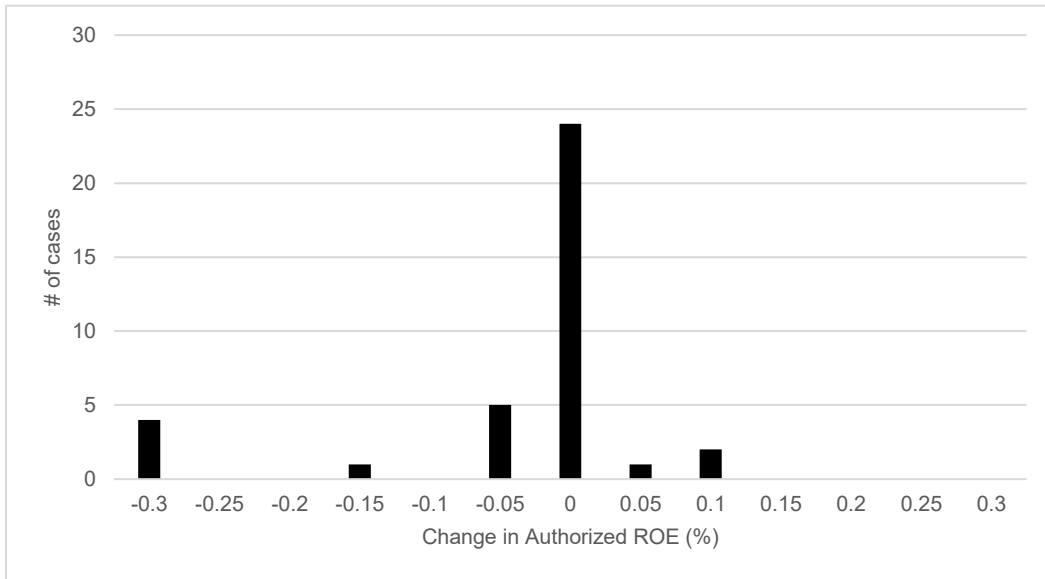
11

I also focused on individual companies that have received multiple ROE authorizations from 2019 through 2021 to remove the underlying variables in quarterly and annually authorized ROE summary data. As shown in Figure 7, in the United States, there were 37 instances of a single utility filing multiple rate cases between 2019 and 2021. In 70 percent of these cases authorized ROE was either unchanged (23 cases) or increased (3 cases). There were 11 cases where the ROE was reduced, but even in these cases the maximum reduction was 32 basis points and the average was 17 basis points.¹⁹ As a point of reference, these decisions do not reflect SDG&E’s greater risk than the average U.S. utility.

¹⁹ Source: Capital IQ Pro, Regulatory Research Associates.

1

Figure 7: Histogram of Individual Company Changes in Authorized ROEs 2019-2021²⁰



2

3 **Q. What are your conclusions regarding the effects of the current market environment**
 4 **on the cost of equity for SDG&E?**

5 A. The risks to equity investors are currently elevated in comparison to the conditions that
 6 existed during the 2019 timeframe when SDG&E last cost of capital case was filed and
 7 decided. Given the uncertainty and volatility that have characterized capital markets
 8 since February 2020, the increase in relative risk of the utility industry (as measured by
 9 Beta) compared to the broader market, and the pressures cited by S&P on utility credit
 10 quality, it is reasonable that equity investors would require a higher ROE to compensate
 11 them for the additional risk associated with owning common stock. This is reflected in
 12 utilities' stock market underperformance and increased Beta coefficients.

13

²⁰ Source: Capital IQ Pro, Regulatory Research Associates.

1 **B. Economic Recovery and Inflation Risk**

2 **Q. Are there indications the Federal Reserve is normalizing monetary policy?**

3 A. Yes. As noted, on March 16, 2022, the Federal Open Market Committee (“FOMC”)
4 announced its decision to raise the target range for the federal funds rate to a target range
5 of 0.25 percent to 0.50 percent and anticipates ongoing increases. The FOMC
6 acknowledged the invasion of Ukraine by Russia creating highly uncertain implications
7 for the U.S. Economy.²¹ Moreover, the Federal Reserve’s FOMC is now forecasting
8 several increases in the federal funds rate that would bring the rate to a target range of
9 1.75 percent to 2.00 percent by the end of 2022.²² In the December 15, 2021 FOMC
10 meeting, in response to inflation exceeding the Federal Reserve’s target of 2 percent for a
11 sustained period of time, the Federal Reserve decided to increase the pace of its taper of
12 bond purchases. Beginning in January, the Federal Reserve began to reduce asset
13 purchases of Treasuries by \$20 billion and mortgage-backed securities by \$10 billion on
14 a monthly basis.²³ This change is double the initial plan outlined at the November 2,
15 2021 meeting, which called for reducing asset purchases of Treasuries by \$10 billion and
16 mortgage-backed securities by \$5 billion on a monthly basis.²⁴

²¹ Federal Reserve Mar. 16, 2022.

²² Federal Reserve Gov, *Summary of Economic Projections*, (Mar. 16, 2022) (“Federal Reserve, Summary of Economic Projections, Mar. 16, 2022”), Figure 2, available at <https://www.federalreserve.gov/monetarypolicy/fomcprojtable20220316.htm>.

²³ Federal Reserve Gov, *Press Release* (December 15, 2021) (“Federal Reserve Dec. 15, 2021”), available at <https://www.federalreserve.gov/monetarypolicy/files/monetary20211215a1.pdf>.

²⁴ Federal Reserve, Gov, Federal Reserve issues FOMC Statement (Nov. 3, 2021), available at <https://www.federalreserve.gov/newsevents/pressreleases/monetary20211103a.htm>.

1 **Q. Why has the Federal Reserve decided to normalize monetary policy?**

2 A. The Federal Reserve has accelerated plans to normalize monetary policy in response to
3 increasing inflation. While the Federal Reserve initially viewed inflation as transitory, it
4 has been higher and more persistent than the target levels and is expected to continue in
5 2022. Specifically, Federal Reserve Chairman Jerome Powell stated:

6 We are phasing out our purchases more rapidly because with elevated
7 inflation pressures and a rapidly strengthening labor market, the economy
8 no longer needs increasing amounts of policy support.²⁵

9 **Q. Please describe the significance of current inflationary pressure and expectations**
10 **over the near-term.**

11 A. Inflation is currently at its highest level in approximately 40 years and interest rates have
12 recently increased from historic low-levels observed at the onset of the pandemic. The
13 year-over-year (“YOY”) change in the Consumer Price Index (“CPI”) published by the
14 Bureau of Labor Statistics increased steadily in 2021 rising from 1.37 percent in January
15 2021 to 7.0 percent in December 2021. The change in the CPI in December 2021 was the
16 largest 12-month increase since 1982. This trend has continued with the YOY change in
17 CPI rising to 7.5 percent in January 2022 and 7.9 percent in February 2022. Goldman
18 Sachs opined: “A very high inflation path in 2022 should make an easy case for steady
19 rate hikes at all seven remaining FOMC meetings.”²⁶ Adding uncertainty to the economic
20 outlook, the current expectation is that the Federal Reserve will raise the federal funds

²⁵ Federal Reserve Gov, *FOMC Meeting Press Conference, Transcript of Chair Powell’s Opening Statement* (December 15, 2021) at 4, available at <https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20211215.pdf>.

²⁶ Bloomberg, *Goldman Sachs Sees Fed Hiking More Times in 2023 Amid Inflation*.(February 28 2022) available at <https://www.bloomberg.com/news/articles/2022-02-28/goldman-raises-u-s-inflation-forecasts-sees-more-hikes-in-2023>.

1 rate six quarter-point increases in 2022, followed by three to four increases in 2023.²⁷

2 Further, as noted, the Federal Reserve decided to reduce its holdings of Treasury and
3 mortgage-backed securities.²⁸ This means that the historic low interest rate environment
4 is unlikely to be sustained in 2022.²⁹

5 **Q. What effect will inflation have on long-term interest rates?**

6 A. Inflation and the Federal Reserve's normalization of monetary policy will likely result in
7 increases in long-term interest rates. Specifically, inflation reduces the purchasing power
8 of the future interest payments an investor expects to receive over the duration of the
9 bond. This risk increases the longer the duration of the bond. As a result, if investors
10 expect increased levels of inflation, they will require higher yields to compensate for the
11 increased risk of inflation which means interest rates will increase.

12 **Q. What conclusions do you draw from your analysis of capital market conditions?**

13 A. While short-term interest rates currently remain low, investors are increasingly faced with
14 inflationary pressures, and the Federal Reserve is unwinding its pandemic response
15 measures. Long-term interest rates have increased substantially since the historic lows of
16 2020, and are expected to continue to increase. This supports the use of both current and
17 forecast bond yields in the CAPM and Risk Premium models.

18 High utility valuations are expected to decline as utilities underperform the broader
19 market. Under these circumstances, the results of the DCF model would understate the
20 forward-looking cost of equity because the dividend yield is calculated using historical

²⁷ Federal Reserve, Summary of Economic Projections, Mar. 16, 2022, Figure 2.

²⁸ Federal Reserve December 15, 2021.

²⁹ S&P Oct. 2021 Report at 5.

1 average stock prices which do not fully reflect these expectations. These circumstances
2 reinforce the importance of considering the results of multiple models, as I have with the
3 CAPM, DCF, Risk Premium, and Expected Earnings approaches.

4 **V. PROXY GROUP SELECTION**

5 **Q. Why is it necessary to select a proxy group to estimate the cost of equity for**
6 **SDG&E?**

7 A. Since the ROE is a market-based concept and SDG&E is not publicly traded, it is
8 necessary to establish a group of companies that is both publicly traded and comparable
9 to SDG&E. Even if SDG&E were a publicly traded entity, it is possible that transitory
10 events could bias the Company's market value in one way or another in a given period of
11 time. A significant benefit of using a proxy group is the ability to mitigate the effects of
12 short-term events that may be associated with any one company. The proxy companies
13 used in my ROE analyses possess a set of business and operating characteristics similar
14 to SDG&E's electric and gas utility operations, and thus provide a reasonable basis for
15 estimating the Company's ROE.

16 **Q. Please provide a summary profile of SDG&E.**

17 A. SDG&E is a wholly owned subsidiary of Sempra Energy, providing electric services to a
18 population of approximately 3.6 million and natural gas services to a population of
19 approximately 3.3 million. In addition, SDG&E owns and operates four natural gas-fired
20 power plants, three of which are in California and one of which is in Nevada.³⁰ SDG&E
21 has long-term issuer ratings from S&P of BBB+ (Outlook: Stable), Moody's Investors

³⁰ Sempra Energy, 2021 SEC Form 10-K (February 25, 2022) at 13-14.

1 Service (“Moody’s”) of A3 (Outlook: Stable), and FitchRatings (“Fitch”) of BBB+
2 (Outlook: Stable).³¹

3 **Q. Please describe the specific screening criteria you have utilized to select a proxy**
4 **group.**

5 A. I began with the 36 investor-owned domestic electric or combination gas and electric
6 utilities covered by Value Line and then screened companies according to the following
7 criteria:

- 8 1. Consistently pays quarterly cash dividends;
- 9 2. Maintains an investment grade long-term issuer rating (BBB- or higher) from
10 S&P;
- 11 3. Is covered by more than one equity analyst;
- 12 4. Has positive earnings growth rates published by at least two of the following
13 sources: Value Line, Thomson First Call (as reported by Yahoo! Finance), and
14 Zack’s Investment Research (“Zacks”);
- 15 5. Regulated revenue and net operating income make up more than 80 percent of
16 the consolidated company’s revenue and net operating income (based on a 3-
17 year average from 2018-2020); and
- 18 6. Is not involved in a merger or other transformative transaction for an
19 approximate six-month period prior to my analysis.

³¹ *Id.* at 78.

- 1 **Q. What is the composition of your resulting proxy group?**
- 2 A. Based on the screening criteria discussed above, I arrived at a proxy group consisting of
- 3 the companies shown in Figure 8. The results of my screening process are shown in
- 4 Exhibit JMC-3.

5 **Figure 8: Proxy Group**

Company	Ticker
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avista Corporation	AVA
Black Hills Corporation	BKH
CMS Energy Corporation	CMS
Consolidated Edison, Inc.	ED
Duke Energy Corporation	DUK
Edison International	EIX
Entergy Corporation	ETR
Evergy, Inc.	EVRG
Eversource Energy	ES
IDACORP, Inc.	IDA
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE
Pinnacle West Capital Corporation	PNW
Portland General Electric Company	POR
Southern Company	SO
Wisconsin Energy Corporation	WEC
Xcel Energy Inc.	XEL

6

1 **Q. Do your screening criteria result in a group of companies that investors would view**
2 **as comparable to SDG&E?**

3 A. Yes. I have selected this group of utilities to best align with the financial and operational
4 characteristics of SDG&E. The proxy group screening criterion requiring an investment
5 grade credit rating ensures that the proxy group companies, like SDG&E, are in sound
6 financial condition. Additionally, I have screened on the percent of revenue and net
7 operating income from regulated operations to differentiate between utilities that are
8 protected by regulation and those with substantial unregulated operations or market-
9 related risks. The proxy group also reflects SDG&E's electric and gas operations, and
10 results in a proxy group with an average of 86 percent of regulated revenue and net
11 operating income from electric operations and 14 percent from natural gas utility
12 operations, which is comparable to SDG&E's composition. These screens collectively
13 reflect key risk factors that investors consider in making investments in electric and gas
14 utilities.

15 **Q. What is your conclusion with regard to the proxy group for SDG&E?**

16 A. My conclusion is that my group of 20 electric and gas utilities adequately reflects the
17 broad set of risks that investors consider when investing in a U.S.-regulated electric and
18 gas utility such as SDG&E. Later in my testimony, I will evaluate whether an adjustment
19 should be made to the results of my ROE analyses to account for differences in
20 SDG&E's company-specific risks relative to the proxy group companies.

21 **VI. DETERMINATION OF THE APPROPRIATE COST OF EQUITY**

22 **Q. What models did you use in your ROE analyses?**

23 A. As noted, I have utilized four ROE estimation models: the Constant Growth DCF, the
24 CAPM, the Bond Yield Plus Risk Premium, and Expected Earnings. The following

1 describes each of the models and inputs I have utilized to estimate SDG&E's cost of
2 equity.

3 **A. Constant Growth DCF Model**

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

5 A. The DCF approach is based on the theory that a stock's current price represents the
6 present value of all expected future cash flows. In its simplest form, the DCF model
7 expresses the ROE as the sum of the expected dividend yield and long-term growth rate:

$$8 \quad k = \frac{D(1+g)}{P_0} + g \quad [1]$$

9 Where "k" equals the required return, "D" is the current dividend, "g" is the expected
10 growth rate, and "P" represents the subject company's stock price.

11 Assuming a constant growth rate in dividends, the model may be rearranged to compute
12 the ROE accordingly, as shown in Formula [2]:

$$13 \quad r = \frac{D}{P} + g \quad [2]$$

14 Stated in this manner, the cost of common equity is equal to the dividend yield plus the
15 dividend growth rate.

16 **Q. What are the assumptions underlying the Constant Growth DCF model?**

17 A. The Constant Growth DCF model is based on the following assumptions: (1) a constant
18 average growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a
19 constant price-to-earnings multiple; and (4) a discount rate greater than the expected
20 growth rate.

21 **Q. Please summarize your application of the Constant Growth DCF model.**

22 A. I calculated DCF results for each of the proxy group companies using the following
23 inputs:

- 1 1. Average stock prices for the historical period, over 30-, 90-, and 180-trading
- 2 days through February 28, 2022;
- 3 2. Annualized dividend per share as of February 28, 2022; and
- 4 3. Company-specific earnings growth forecasts for the term g.

5 My application of the Constant Growth DCF model is provided in Exhibit JMC-4.

6 **Q. Why did you use averaging periods of 30, 90, and 180 trading days?**

7 A. It is important to use an average of recent trading days to calculate the term P in the DCF

8 model to ensure that the calculated ROE is not skewed by anomalous events that may

9 affect stock prices on any given trading day. At the same time, it is important to reflect

10 the conditions that have defined the financial markets over the recent past. In my view,

11 consideration of those three averaging periods reasonably balances these interests.

12 **Q. Did you adjust the dividend yield to account for periodic growth in dividends?**

13 A. Yes, I did. Utility companies tend to increase their quarterly dividends at different times

14 throughout the year, so it is reasonable to assume that such increases will be evenly

15 distributed over calendar quarters. Given that assumption, it is reasonable to apply one-

16 half of the expected annual dividend growth rate for the purposes of calculating this

17 component of the DCF model. This adjustment ensures that the expected dividend yield

18 is representative of the coming 12-month period. Accordingly, the DCF estimates reflect

19 one-half of the expected growth in the dividend yield.³²

³² The expected dividend yield is calculated as $d_1 = d_0 (1 + \frac{1}{2} g)$.

1 **Q. What sources of growth have you used in your DCF analysis?**

2 A. I have used the consensus analyst five-year growth estimates in earnings per share
3 (“EPS”) from Thomson First Call and Zacks, as well as EPS growth rate estimates
4 published by Value Line.

5 **Q. Why did you focus on earnings per share growth?**

6 A. The Constant Growth DCF model assumes that dividends grow at a constant rate in
7 perpetuity. Accordingly, in order to reduce the long-term growth rate to a single
8 measure, one must assume a constant payout ratio, and that earnings per share, dividends
9 per share, and book value per share all grow at the same constant rate. Over the long
10 term, however, dividend growth can only be sustained by earnings growth. As noted by
11 Brigham and Houston in their text, *Fundamentals of Financial Management*: “Growth in
12 dividends occurs primarily as a result of growth in *earnings per share* (EPS).”³³ It is
13 therefore important to focus on measures of long-term earnings growth from credible
14 sources as an appropriate measure of long-term growth in the DCF model.

15 **Q. Are other sources of dividend growth available to investors?**

16 A. Yes, although that does not mean that investors incorporate such estimates into their
17 investment decisions. Academic studies suggest that investors base their investment
18 decisions on analysts’ expectations of growth in earnings.³⁴ I am not aware of any

³³ Eugene F. Brigham and Joel F. Houston, *Fundamentals of Financial Management* (Concise Fourth Edition, Thomson South-Western), at 317 (emphasis added).

³⁴ See, e.g., Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts Growth Forecasts*, *Financial Management*, Summer 1992, at 65; and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, *The Journal of Portfolio Management*, Spring 1988, at 81. Please note that while the original study was published in 1988, it was updated in 2004 under the direction of Dr. Vander Weide. The results of that updated study are consistent with Vander Weide and Carleton’s original conclusions.

1 similar findings regarding non-earnings-based growth estimates. In addition, the only
2 forward-looking growth rates that are available on a consensus basis are analysts' EPS
3 growth rates. The fact that earnings growth projections are the only widely-accepted
4 estimates of growth provides further support that earnings growth is the most meaningful
5 measure of growth among the investment community.

6 **Q. What are the results of your Constant Growth DCF analysis?**

7 A. The results of my Constant Growth DCF analysis are provided in Exhibit JMC-4 and
8 summarized in Figure 9.

9 **Figure 9: Constant Growth DCF Results**

	Mean Low	Mean	Mean High
30-day average	7.79%	8.79%	9.87%
90-day average	7.82%	8.82%	9.91%
180-day average	7.84%	8.83%	9.92%

10
11 **Q. How did you calculate the Mean High, Mean Low, and Overall Mean DCF results?**

12 A. I calculated the Mean High DCF result using the maximum growth rate (*i.e.*, the
13 maximum of the First Call, Value Line, and Zacks EPS growth rates) in combination with
14 the expected dividend yield for each of the proxy group companies. I used a similar
15 method to calculate the Mean Low DCF results, using the minimum growth rate for each
16 company. The Mean results reflect the average growth rate from each source for each
17 company in combination with the expected dividend yield.

18 **Q. What is your conclusion regarding the results of the DCF model?**

19 A. My primary conclusion is that the results of the DCF model likely understate the cost of
20 equity for electric utilities under current market conditions. While the DCF continues to

1 be used by investors and regulators, the reliability of the DCF model has been subject to
2 increasing scrutiny over the past decade, emphasizing the importance of using multiple
3 models.³⁵ Consequently, in an investment environment dominated by volatility and
4 uncertainty, it is necessary to also consider the results of Risk Premium models, such as
5 the CAPM and Bond Yield Risk Premium analysis (consistent with FERC’s approach). I
6 also include the Expected Earnings model, in order to determine where to set the
7 appropriate return. These models rely on market data and analyst inputs that mitigate the
8 problems associated with the DCF method.

9 **B. CAPM Analysis**

10 **Q. Please briefly describe the general form of the Capital Asset Pricing Model.**

11 A. The CAPM is a risk premium approach that estimates the cost of equity for a given
12 security as a function of a risk-free return plus a risk premium (to compensate investors
13 for the non-diversifiable or “systematic” risk of that security).³⁶ As shown in Equation
14 [3], the CAPM is defined by four components, each of which must theoretically be a
15 forward-looking estimate:

16
$$K_e = r_f + \beta(r_m - r_f) \quad [3]$$

17 where:

18 K_e = the required ROE for a given security;

19 r_f = the risk-free rate of return;

20 β = the Beta of an individual security; and

³⁵ See D.19-12-056 at 16 (noting that the CPUC reviews multiple models to consider ROE).

³⁶ Systematic risks are fundamental market risks that reflect aggregate economic measures and therefore cannot be mitigated through diversification. Unsystematic risks reflect company-specific risks that can be mitigated and ultimately eliminated through investments in a portfolio of companies and/or market sectors.

1 r_m = the required return for the market as a whole.

2 The term $(r_m - r_f)$ represents the Market Risk Premium (“MRP”). According to the
3 theory underlying the CAPM, since unsystematic risk can be diversified away, investors
4 should be concerned only with systematic or non-diversifiable risk. Non-diversifiable
5 risk is measured by Beta, which is defined as:

6
$$\beta = \frac{\text{Covariance}(r_e, r_m)}{\text{Variance}(r_m)} \quad [4]$$

7 where:

8 r_e = the rate of return for the individual security or portfolio.

9 The variance of the market return, noted in Equation [4], is a measure of the uncertainty
10 of the general market, and the covariance between the return on a specific security and
11 the market reflects the extent to which the return on that security will respond to a given
12 change in the market return. Thus, Beta represents the risk that the selected security will
13 not be effective in diversifying systematic market risks.

14 **Q. Have economic and financial market conditions also affected the CAPM?**

15 A. Yes. Given the extraordinarily low level of interest rates on Treasury bonds as compared
16 to historical levels, using current or even near-term projections of government bond
17 yields would distort market expectations for a reasonable risk-free rate. Using the 5-year
18 forecast of bond yields helps alleviate these short-term market factors affecting the risk-
19 free rate, or “ r_f ” in the CAPM formula. As discussed in Section IV, interest rates have
20 increased in recent months and are expected to continue to increase as the economy
21 recovers from the effects of the COVID-19 pandemic and the Federal Reserve raises the
22 federal funds rate. Further, due to the fiscal and monetary stimulus provided to the U.S.
23 economy in recent months, inflation risk is elevated. It is also important to recognize that

1 SDG&E is financing long-lived assets, and the cost of capital should be forward looking
2 to reflect that perspective.

3 **Q. What risk-free rate did you use in your CAPM analysis?**

4 A. Since both the CAPM and Risk Premium models assume long-term investment horizons,
5 I used the Blue Chip forecast of the yield on 30-year Treasury bonds for 2023-2027 of
6 3.40 percent as my estimate of the risk-free rate.³⁷ That time period reflects a forward-
7 looking view, which is the objective of the ROE analysis. I also considered CAPM
8 results applying the 30-day average yield (as of February 28, 2022) on 30-year Treasury
9 bonds of 2.20 percent. Considering the alternatives of a forecast or current bond rate in
10 the CAPM model, Dr. Roger Morin recommends “equal weight” in his text on regulatory
11 finance:

12 There are two possibilities for proxying investors’ expectations of the risk-
13 free rate expected to prevail in one year: actual and forecast interest rates.
14 Each offers distinct advantages and limitations. At the conceptual level,
15 given that ratemaking is a forward-looking process, interest rate forecasts
16 are preferable. Moreover, the conceptual models used in the
17 determination of the cost of equity, such as the CAPM, are prospective in
18 nature and require expectational inputs.

19 ...

20 One reasonable option for the regulator is to accord equal weight to both
21 current interest rate levels and the analysts’ consensus forecast. Each
22 proxy for expected interest rates brings information to the judgement
23 process from a different light.³⁸

³⁷ Blue Chip Financial Forecasts, Volume 40, No. 12, December 1, 2021, at 14.

³⁸ *New Regulatory Finance*, Roger A. Morin, PhD, Public Utilities Reports, 2006 at 172-173.

1 **Q. Have regulators in other jurisdictions supported the use of a projected risk-free rate**
2 **in the CAPM analysis?**

3 A. Yes. In a 2017 decision, the Massachusetts Department of Public Utilities (or “MDPU”)
4 noted that accommodative Federal monetary policy had pushed Treasury yields to near
5 historical lows. As a result, the MDPU found it appropriate to use prospective interest
6 rate expectations in the CAPM, stating:

7 Current federal monetary policy that is intended to stimulate the economy
8 has pushed treasury yields to near historic lows. Consequently, the
9 Department has found that a CAPM analysis based on current treasury
10 yields may tend to underestimate the risk-free rate over the long term and,
11 thereby, understate the required ROE. The CAPM is based on investor
12 expectations and, therefore, it is appropriate to use a prospective measure
13 for the risk-free rate component. The Department has found that Blue
14 Chip Financial Forecasts is widely relied on by investors and provides a
15 useful proxy for investor expectations for the risk-free rate.³⁹

16 **Q. What measures of Beta did you use in your CAPM analysis?**

17 A. As shown in Exhibit JMC-5.2, I considered two measures of Beta for the proxy group
18 companies: (1) the reported Beta coefficients from Bloomberg (which are calculated
19 using five years of weekly data against the S&P 500 Index); and (2) the reported Beta
20 coefficients from Value Line (which are calculated using five years of weekly data
21 against the New York Stock Exchange Composite Index). Beta coefficients for utilities
22 have increased substantially since January 2020, as utilities have traded more like the
23 broader market. However, it is important to emphasize that Beta coefficients are
24 calculated over a five-year period, so this recent increase is not a short-term market

³⁹ D.P.U. 17-05, *Petition of NSTAR Electric Company and Western Massachusetts Electric Company, each doing business as Eversource Energy, Pursuant to G.L. c. 164, § 94 and 220 CMR 5.00 et seq., for Approval of General Increases in Base Distribution Rates for Electric Service and a Performance Based Ratemaking Mechanism* (November 30, 2017) at 693 (citations omitted).

1 phenomenon. The recent movement in betas captures a trend that began five years ago,
2 but has been accelerated by the recent market conditions. The substantial increase in
3 Beta coefficients for the proxy group companies represents a significant departure from
4 how investors have typically viewed utilities relative to the broader market and is not just
5 COVID-19 related.

6 **Q. What Market Risk Premium did you use in your CAPM analysis?**

7 A. I used the Constant Growth DCF model to estimate the total market return for the S&P
8 500 Index, using projected earnings growth rates and dividend yields from three sources:
9 (1) S&P's Earnings and Estimates report; (2) Bloomberg Professional; and (3) Value
10 Line. Using the DCF model for a broad-based total market return mitigates the
11 challenges specific to the utilities sector. As of February 28, 2022, the average total
12 market return from these three sources is 15.98 percent, as shown in Figure 10 (also see
13 Exhibit JMC-5.1). Recognizing S&P's estimates are higher than the others, I relied only
14 on the DCF approach using earnings growth rates estimates from Bloomberg and Value
15 Line, which results in an estimated expected market return of 15.62 percent.

16 **Figure 10: Total Market Return**

Source	Market Return
S&P Earnings & Estimates	16.69%
Bloomberg Professional	15.08%
Value Line	16.17%
Average – All Methods	15.98%

17 I then calculated the MRP by subtracting the risk-free rate (based on the current 30-year
18 Treasury bond yield of 2.20 percent, or the 5-year forecast of the 30-year Treasury bond

1 of 3.40 percent) from the total market return. My calculation as shown in Exhibit JMC-
2 5.2 yielded a forward looking “ex-ante” MRP of 12.22 percent to 13.43 percent.
3 The CAPM is inherently a forward-looking model since it is designed to estimate
4 investors’ required equity return expectations. The MRP should, therefore, reflect
5 investors’ expected equity market returns relative to expected returns on Treasury
6 securities. While these return expectations may be informed by history, they should
7 primarily reflect forward-looking return expectations.

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

9 A. Using the MRP as calculated above, and the projected risk-free rate, I now have the
10 required market return (R_m) input to equation [3] and can solve the CAPM model. As
11 shown in Exhibit JMC-5.2, the CAPM results are 14.19 percent (using Value Line Betas)
12 and 14.08 percent (using Bloomberg Betas), or an average of 14.13 percent. Applying
13 the 30-day average yield on 30-year Treasury bonds, the CAPM results are 14.05 percent
14 (using Value Line Betas) and 13.93 percent (using Bloomberg Betas), or an average of
15 13.99 percent.

16 **Q. What is your conclusion regarding the results of the CAPM approach?**

17 A. The results of the CAPM model are appreciably higher than the results from the other
18 models, driven by market factors affecting all three of the model’s inputs: higher interest
19 rates, higher betas, and higher expectations for overall market equity returns. While I do
20 not discount these factors, these results further reinforce the benefit of balance found in
21 multiple models.

1 **C. Risk Premium Analysis**

2 **Q. Please describe the Risk Premium approach that you used.**

3 A. I use an approach similar to that adopted by FERC. In general terms, this approach
4 recognizes that equity is riskier than debt because equity investors bear the residual risk
5 associated with ownership. Equity investors, therefore, require a greater return (*i.e.*, a
6 premium) than would a bondholder. The Risk Premium approach estimates the cost of
7 equity as the sum of the Equity Risk Premium and the yield on a particular class of
8 bonds.

9
$$ROE = RP + Y \quad [5]$$

10 Where:

11 RP = Risk Premium (difference between allowed ROE and the 30-Year Treasury
12 Yield) and

13 Y = Applicable bond yield.

14 Since the equity risk premium is not directly observable, it is typically estimated using a
15 variety of approaches, some of which incorporate *ex-ante*, or forward-looking, estimates
16 of the cost of equity and others that consider historical, or *ex-post*, estimates. For my
17 Risk Premium analysis, I have relied on authorized returns from a large sample of electric
18 utility companies and a separate large sample of gas utilities.

19 **Q. What did your Risk Premium analysis reveal?**

20 A. To estimate the relationship between risk premia and interest rates, I conducted a
21 regression analysis using the following equation:

22
$$RP = a + (b \times Y) \quad [6]$$

23 where:

1 RP = Risk Premium (difference between allowed ROEs and the 30-Year Treasury
2 Yield);

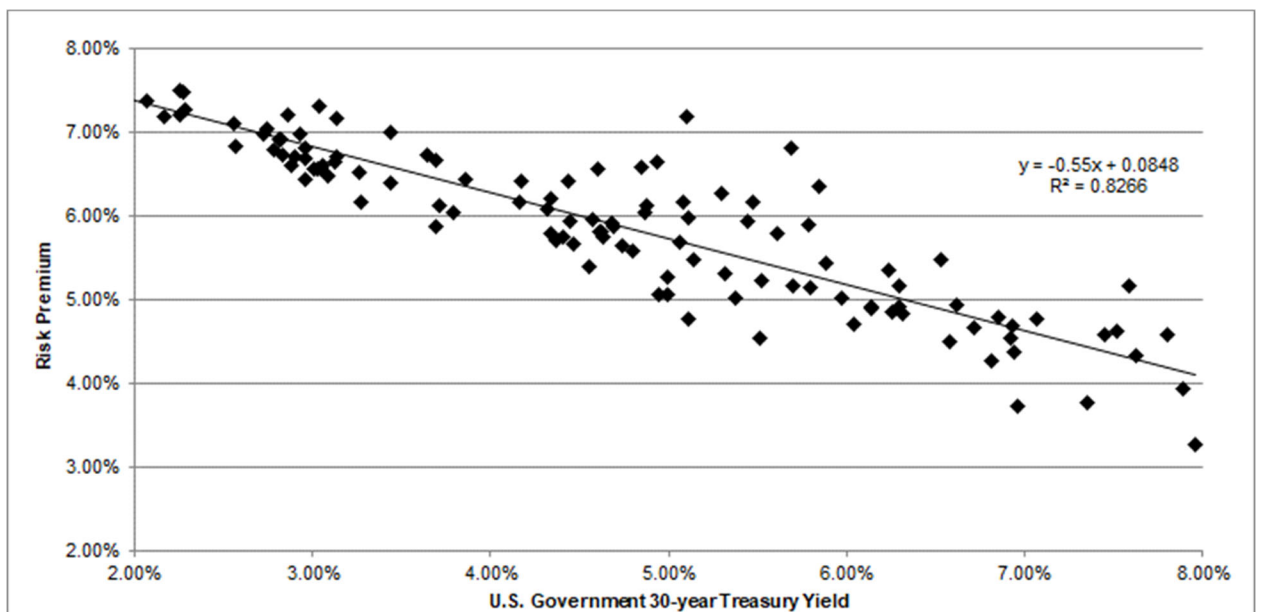
3 a = Intercept term;

4 b = Slope term; and

5 Y = 30-Year Treasury Yield.

6 Data regarding allowed ROEs were derived from electric and gas utility company rate
7 cases from January 1, 1992 through February 28, 2022, as reported by Regulatory
8 Research Associates.

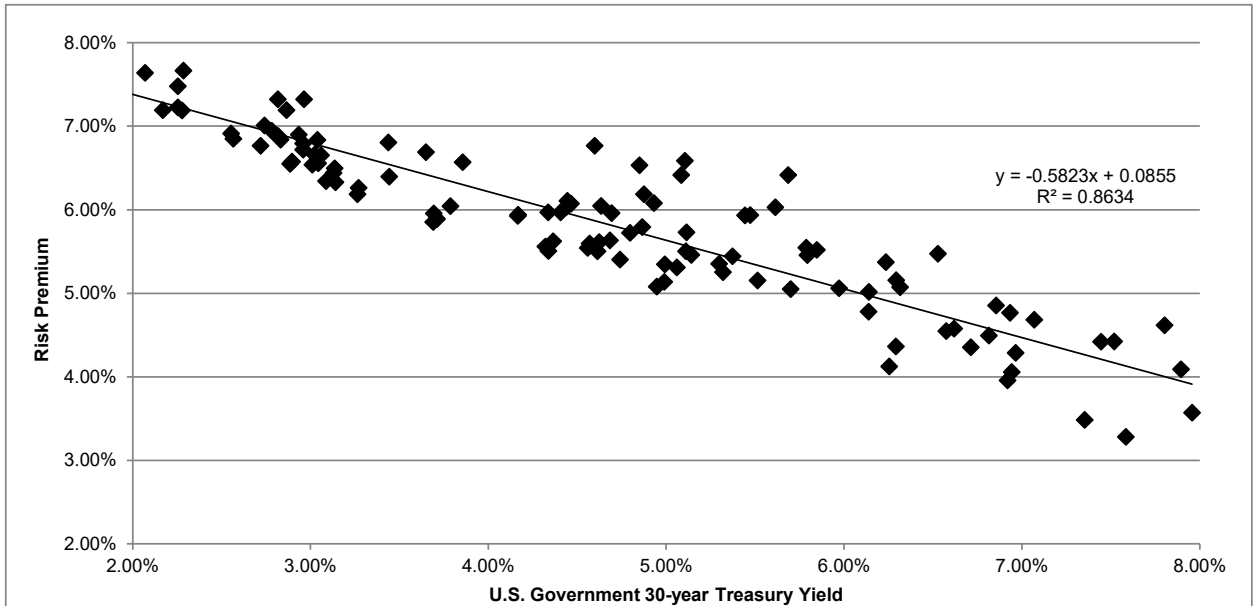
9 **Figure 11a: Risk Premium Results – Electric Utilities**



10

1

Figure 11b: Risk Premium Results – Natural Gas Utilities



2

3 As illustrated by Figures 11a and 11b (above), the risk premium varies with the level of
4 bond yield, and generally increases as the bond yields decrease, and vice versa. In order
5 to apply this relationship to current and expected bond yields, I consider three estimates
6 of the 30-year Treasury yield, including the current 30-day average, a near-term Blue
7 Chip consensus forecast for Q2 2022 – Q2 2023, and a Blue Chip consensus forecast for
8 2023–2027. I find this 5-year result to be most applicable for the following reasons: (1)
9 investors are expecting increases in government bond yields; (2) investors typically have
10 a multi-year view of their required returns on equity; and (3) SDG&E’s capital
11 expenditure plan requires that the Company continue to be able to attract capital on
12 reasonable terms and conditions. Based on the regression coefficients in Exhibit JMC-6,
13 which allow for the estimation of the risk premium at varying bond yields, the results of
14 my Risk Premium analysis are shown in Figure 12.

Figure 12: Risk Premium Results Using 30-Year Treasury Yield

	Using 30-Day Average Yield on 30-Year Treasury Bond	Using Q2 2022–Q2 2023 Forecast for Yield on 30-Year Treasury Bond ⁴⁰	Using 2023–2027 Forecast for Yield 30-Year Treasury Bond ⁴¹
<i>Electric Utilities</i>			
Yield	2.20%	2.74%	3.40%
Risk Premium	7.27%	6.97%	6.61%
Resulting ROE	9.47%	9.71%	10.01%
<i>Gas Utilities</i>			
Yield	2.20%	2.74%	3.40%
Risk Premium	7.27%	6.95%	6.57%
Resulting ROE	9.47%	9.69%	9.97%

2
3 **Q. What is your conclusion regarding the results of the Risk Premium model?**

4 A. I believe the Risk Premium model provides an important perspective on the primary
5 relationship between the risk-free rate and utility authorized ROEs over a variety of
6 financial and economic cycles. This is particularly important today given the anticipated
7 shift from a very low interest rate environment to one of higher rates, and this impact can
8 be captured directly in the model.

9 **D. Expected Earning Analysis**

10 **Q. Have you conducted any other analysis to estimate the cost of equity for SDG&E?**

11 A. Yes. I have also conducted an Expected Earnings analysis to estimate the cost of equity
12 for SDG&E based on the projected ROEs for the proxy group companies.

⁴⁰ Blue Chip Financial Forecasts, Vol. 41, No. 3, March 1, 2022, at 2

⁴¹ Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2020, at 14.

1 **Q. What is an Expected Earnings Analysis?**

2 A. The Expected Earnings methodology is a comparable earnings analysis that calculates the
3 earnings that an investor expects to receive on the book value of a stock. The Expected
4 Earnings analysis is a forward-looking estimate of investors' expected returns. The use
5 of an Expected Earnings approach based on the proxy companies provides a range of the
6 expected returns on a group of risk-comparable companies to the subject company. This
7 range is useful in helping to determine the opportunity cost of investing in the subject
8 company, which is relevant in determining a company's ROE.

9 The Expected Earnings approach relying on expected returns for like-risk companies is a
10 core strength of the model and consistent with the basic tenets of *Hope*: "the return to the
11 equity owner should be commensurate with returns on investments in other enterprises
12 having corresponding risks." Since the Expected Earnings model provides an
13 accounting-based approach that relies on investment analysts' projections of earnings on
14 book equity, it affords the benefit of analyst insights, knowledge, and expertise in
15 interpreting a given company's earnings prospects in the context of current market
16 conditions.

17 **Q. How is the Expected Earnings Approach calculated?**

18 A. I relied primarily on the projected ROE for the proxy companies as reported by Value
19 Line for the period from 2024-2026. I then adjusted those projected ROEs to account for
20 the fact that the ROEs reported by Value Line are calculated on the basis of common
21 shares outstanding at the end of the period, as opposed to average shares outstanding over
22 the entire period. As shown in Exhibit JMC-7, the Expected Earnings analysis results in
23 a mean of 10.61 percent and a median of 10.33 percent.

1 **Q. What is your conclusion regarding the results of the Expected Earnings model?**

2 A. The model captures investor expectations for ROEs for each company in the proxy group
3 as estimated by impartial analysts. This is a valuable tool given the nature of the analysis
4 here is designed to measure required returns for SDG&E. It is reasonable to assume that
5 investors would require returns from investment in SDG&E similar to those they could
6 earn in comparable investments, so these results are informative.

7 **E. Evaluating Model Results**

8 **Q. Please explain how you have considered the results of the DCF, CAPM, Risk**
9 **Premium and Expected Earnings analysis to arrive at your ROE recommendation.**

10 A. As shown in Figure 13, I have considered the results of the DCF, CAPM, Bond Yield
11 Plus Risk Premium, and Expected Earnings analyses. While I would typically rely on the
12 results of analyses using projected interest rates, especially given the current capital
13 market environment and the prospect for inflationary pressures in the near future, I
14 considered the range using both current and projected interest rates.

15 **Figure 13: Base ROE Results**

	Model Results (Current Interest Rates)	Model Results (Projected Interest Rates)
DCF	8.81%	8.81%
CAPM	13.99%	14.13%
Risk Premium	9.47%	9.99%
Expected Earnings	10.72%	10.72%
Range	8.81% – 13.99%	8.81% – 14.13%
Average ROE	10.72%	10.89%

16

1 As discussed in the next Section of my testimony, these mean estimates serve as a base
2 ROE prior to consideration of relative business and financial risks.

3 **VII. BUSINESS AND FINANCIAL RISKS**

4 **Q. Are there factors specific to SDG&E's risk profile that you also considered in**
5 **developing your ROE recommendation?**

6 A. Yes, there are several factors that have a direct bearing on SDG&E's risk profile in
7 relation to the proxy group. Those risk factors include: (1) the Company's exposure to
8 Wildfire Risks; (2) the Company's substantial capital expenditure program; (3)
9 California's clean energy mandates; and (4) regulatory risk relative to the proxy group
10 companies. In aggregate, those risk factors elevate SDG&E's risk profile relative to the
11 proxy group and would support an authorized ROE above the mean, although I have not
12 made an explicit adjustment.

13 **A. California Wildfire Risks and Inverse Condemnation**

14 **Q. Please describe the risks that the California utilities face due to the wildfires.**

15 A. Wildfires present unique risks to the California investor-owned utilities for two main
16 reasons. First, wildfires have become more frequent and larger in magnitude over time,
17 creating more opportunities for a utility's equipment to be involved in an ignition.
18 Second, each time a California utility's equipment is involved in the ignition of a fire that
19 creates economic damages, that utility may face enormous uninsured, and potentially
20 unrecoverable, liabilities.

21 Under California state law, a legal standard known as inverse condemnation applies when
22 utility equipment is a cause of a wildfire ignition. This doctrine makes utilities strictly
23 liable for liability damages caused by their own facilities, regardless of negligence and
24 other causes. These liabilities may include homeowner insurance claims, uninsured

1 property damage claims, business interruptions, agricultural damages, emotional harm,
2 personal injuries, and other losses.

3 Illustrating SDG&E's risk exposure, after the 2007 Witch, Guejito, and Rice fires,
4 SDG&E settled approximately \$2.4 billion of the \$4 billion in total damage claims.

5 While SDG&E was able to offset that liability with an insurance reimbursement of \$1.1
6 billion, settlements with third parties of \$827 million, and FERC-authorized recovery of
7 \$80 million, the CPUC denied recovery of \$421 million of wildfire costs incurred by
8 SDG&E in the CPUC's Final Decision issued December 2017.⁴² The alternative findings
9 regarding cost recovery by FERC and the CPUC over the same conduct by SDG&E has
10 left investors with significant uncertainty as to the ability for the Company to recover
11 wildfire-related costs regardless of conduct.⁴³

12 Placing SDG&E's above-mentioned 2007 wildfire experience in perspective, according
13 to Cal Fire data, fifteen of the State's twenty most destructive wildfires in recorded
14 history have occurred in the past five years alone.⁴⁴

⁴² See D.17-11-033. The total liability of SDG&E's California-jurisdictional operations totaled \$421 million. After applying a voluntary Company contribution of 10%, or \$42 million, the net amount was \$379 million. None of these costs were deemed recoverable.

⁴³ See Moody's Investors Service, *San Diego Gas & Electric Company, Update to credit analysis following upgrade to A3* (May 10, 2021) ("Moody's May 10, 2021") at 6 (noting that it is "important" that AB 1054 revised the state's prudence standard for wildfire cost recovery to be in line with FERC's because, "in the case of SDG&E's 2007 wildfires, while the CPUC denied recovery, the FERC ruled that SDG&E acted prudently and allowed the recovery of the wildfire costs.").


⁴⁴ See Cal.Gov, *Cal Fire Top 20 Largest Fires*, available at https://www.fire.ca.gov/media/4jandlhh/top20_acres.pdf.

1

Figure 14: Most Destructive California Wildfires

Top 20 Most Destructive California Wildfires					
FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1 CAMP (Powerlines)	November 2018	Butte	153,336	18,804	85
2 TUBBS (Electrical)	October 2017	Napa & Sonoma	36,807	5,636	22
3 TUNNEL - Oakland Hills (Rekindle)	October 1991	Alameda	1,600	2,900	25
4 CEDAR (Human Related)	October 2003	San Diego	273,246	2,820	15
5 NORTH COMPLEX (Lightning)	August, 2020	Butte, Plumas, & Yuba	318,935	2,352	15
6 VALLEY (Electrical)	September 2015	Lake, Napa & Sonoma	76,067	1,955	4
7 WITCH (Powerlines)	October 2007	San Diego	197,990	1,650	2
8 WOOLSEY (Electrical)	November 2018	Ventura	96,949	1,643	3
9 CARR (Human Related)	July 2018	Shasta County, Trinity	229,651	1,614	8
10 GLASS (Undetermined)	September 2020	Napa & Sonoma	67,484	1,520	0
11 LNU LIGHTNING COMPLEX (Lightning/Arson)	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	363,220	1,491	6
12 CZU LIGHTNING COMPLEX (Lightning)	August 2020	Santa Cruz, San Mateo	86,509	1,490	1
13 NUNS (Powerline)	October 2017	Sonoma	54,382	1,355	3
14 DIXIE (Under Investigation)*	July 2021	Butte, Plumas, Lassen, & Tehama	963,309	1,329	1
15 THOMAS (Powerline)	December 2017	Ventura & Santa Barbara	281,893	1,063	2
16 CALDOR (Human Related)	September 2021	Alpine, Amador, & El Dorado	221,835	1,003	1
17 OLD (Human Related)	October 2003	San Bernardino	91,281	1,003	6
18 JONES (Undetermined)	October 1999	Shasta	26,200	954	1
19 AUGUST COMPLEX (Lightning)	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, & Colusa	1,032,648	935	1
20 BUTTE (Powerlines)	September 2015	Amador & Calaveras	70,868	921	2

Structures include homes, outbuildings (barns, garages, sheds, etc) and commercial properties destroyed.
This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.
*Numbers not final



1/13/2022

2

3

4

5

Illustrating both the escalating frequency and impact of wildfire occurrence, the table below from Cal Fire shows that 2021 and 2022 year-to-date are on pace to significantly exceed the five-year average.⁴⁵

⁴⁵ CA.Gov, Cal Fire, *Stats and Events*, available at <https://www.fire.ca.gov/stats-events>.

1 **Figure 15: 2021-2022 California Wildfire Summary**

Interval	Fires	Acres
2022 Combined YTD (CALFIRE & US Forest Service)	925	6,158
2021 Combined YTD (CALFIRE & US Forest Service)	934	3,287
5-Year Average (same interval)	592	1,289

2
3 Mirroring this trend, California’s emergency fund fire suppression expenditures jumped
4 from \$12.0 million in 1980 to \$39.3 million in 1990 to \$178.5 million in 2000 to \$274.0
5 million in 2010 and an estimated \$1.76 billion in 2021.⁴⁶ These statistics underscore the
6 overall increased wildfire risk in the state.⁴⁷ These risks have led SDG&E’s credit ratings
7 to be reduced at least two notches by all three credit rating agencies since 2018—despite
8 SDG&E’s equipment not being the cause of any significant wildfire ignition during that
9 time—and despite those credit rating agencies repeatedly lauding SDG&E’s wildfire
10 mitigation efforts.⁴⁸

11 **Q. Can insurance products mitigate the financial exposure to these risks?**

12 A. Yes, to a point. However, SDG&E’s ability to purchase insurance at a reasonable cost is
13 influenced by several factors, including state policy and future frequency of wildfires.
14 Any loss that exceeds the level of insurance coverage is subject to potential recovery in a
15 regulatory process, either at the CPUC or FERC. This translates into uncertainty, given

⁴⁶ CA.Gov, Cal Fire, *Emergency Fund Fire Suppression Expenditures*, available at <https://www.fire.ca.gov/media/px5lnaaw/suppressioncostsonepage1.pdf>

⁴⁷ See S&P, *How are California’s Wildfire Risks Affecting Utility Credit Quality* (Jun. 3, 2021) (“S&P, June 3, 2021”) at 1-3 (“California’s environment remains highly prone to catastrophic wildfires, continuing to pressure utility credit quality”), available at <https://www.spglobal.com/ratings/en/research/articles/210603-credit-faq-how-are-california-s-wildfire-risks-affecting-utility-credit-quality-11954953>.

⁴⁸ *Id.* at 8 (calling SDG&E a “global leader in wildfire prevention”).

1 that insurance providers are not required to operate in California and doing so carries risk
2 since the state has experienced frequent wildfires. This contributes to SDG&E's
3 unmitigated financial risk.

4 **Q. What Legislative actions have been taken to address this issue?**

5 A. Assembly Bill 1054 ("AB 1054") was signed into law by Governor Newsom on July 12,
6 2019, creating a Wildfire Fund to mitigate the effects of wildfire liabilities on utilities.

7 There are three primary sources of risk reduction created by the Wildfire Fund:

- 8 1. Establishing a revised prudence standard for determining whether a utility's
9 costs and expenses arising from a covered wildfire are just and reasonable;⁴⁹
- 10 2. Establishing a cap on wildfire related expenses that have been found to be
11 imprudently incurred equal to 20% of the utility's transmission and
12 distribution rate base;⁵⁰ and
- 13 3. Creating liquidity through the creation of a Wildfire Fund that reimburses
14 utilities' settled claims while the utility seeks cost recovery through the
15 Commission.

16 While these features moderate the extraordinary risks of California's wildfire liability for
17 utilities and their customers, significant risks remain that are unique to California and
18 borne by shareholders.

19 **Q. What unique risks remain after the passage of AB 1054?**

20 A. There are several significant wildfire risks remaining after the enactment of AB 1054 that
21 do not apply to utilities outside California, which would exclude all but one of the proxy
22 companies (Edison International) from this exposure. Principal among these are the
23 following:

⁴⁹ Cal. Pub. Utils. Code § 451.1.

⁵⁰ *Id.* at § 3292(h)(2)(C)(i).

- 1 • The legal standard known as inverse condemnation was unchanged by AB
2 1054. Under this doctrine, utilities remain strictly liable when their equipment
3 is the cause of a wildfire ignition, regardless of whether the utility acted
4 reasonably and showed no negligence. So even though AB 1054 may cap the
5 utilities' ultimate liability, this is a unique risk in California. Credit rating
6 agencies continue to recognize this doctrine as a credit constraint,⁵¹ and equity
7 analysts continue to apply a discount to Sempra's stock price based on inverse
8 condemnation's continuation.⁵²
- 9 • There is no precedent for the CPUC operating under the revised prudence
10 standard or other regulatory aspects articulated in AB 1054. The risk reducing
11 effect of the adoption of the "industry norm" for prudence depends on how the
12 CPUC implements the standard for utilities operating under the Wildfire
13 Fund. For example, if the CPUC were to adopt a view that it only takes
14 minimal evidence to overcome the presumption of prudence and shift the
15 burden of proof, then the risk reducing effect is minimal. The only relevant
16 precedent of a CPUC prudence review is the Commission's 2017 100 percent
17 imprudence finding in SDG&E's aforementioned application, further
18 increasing uncertainty. Moody's noted that it could again downgrade
19 SDG&E's credit rating if there is an "unsupportive application of the new
20 prudency standard."⁵³
- 21 • There are ongoing concerns about the Wildfire Fund's durability. The Fund
22 was created by a combination of State and utility funding totaling \$21 billion.
23 Governor Newsome's Strike Force retained an energy advisory firm, Filsinger
24 Energy Partners, ("Filsinger") to measure the probability of exhausting the
25 Wildfire Fund. Filsinger estimated various probabilities for the Fund's
26 exhaustion, ranging from 0.1% to 21.9% by the year 2035, depending on the
27 likelihood of the CPUC finding the utility to be imprudent (Filsinger's
28 estimated that the amount of prudence findings would range from 25% to
29 75%). This assumed a median wildfire loss of \$7 billion per year based upon

⁵¹ See, RRA, California Regulatory Review (Dec. 14, 2020) at 1 (noting that AB 1054 "does nothing to alter the inverse condemnation policy, thus a substantial risk for PG&E and other utilities in the state remains.").

⁵² See Wells Fargo, *Sempra* (June 29, 2021) at 3, (stating that the discount applied to California electric utilities reflects "lingering risks related to CA's inverse condemnation policy and highly politicized regulatory environment, partially offset by a highly supportive 5-year rate plan and separately, constructive FERC regulation").

⁵³ Moody's, *Rating Action: Moody's upgrades San Diego Gas & Electric to A3 from Baa1; outlook stable* 1 (Mar. 30, 2021) ("Moody's Mar. 30, 2021") at 2, available at https://www.moody.com/research/Moodys-upgrades-San-Diego-Gas-Electric-to-A3-from-Baa1--PR_443599.

1 the experience of the previous five years.⁵⁴ If the Fund is exhausted, the risk
2 reducing benefits of the imprudence liability cap and liquidity supported by
3 the Fund are negated. Although the fund’s liquidity is not an immediate
4 concern, it is a risk that weighs down SDG&E’s current credit ratings.⁵⁵

- 5 • Under AB 1054, a utility’s insurance coverage is subject to a recommendation
6 of “reasonable insurance coverage” by the Fund Administrator. If the
7 Administrator should recommend a lower insurance level, and if adopted by the
8 CPUC, the utility’s shareholders would be subject to greater risk.
- 9 • The imprudence liability cap, which is approximately \$950 million for SDG&E,
10 can also be nullified by the Wildfire Fund Administrator if the Administrator
11 concludes that the utility has acted in a manner that constitutes “conscious or
12 willful disregard of the rights and safety of others”⁵⁶ or if a utility does not
13 possess a safety certificate.

14 Lastly, it must be recognized that the magnitude of wildfire risk is unique to California.

15 Post AB 1054, the state’s utilities will still bear more risk than their industry peers. In
16 other words, the higher overall number and risk of wildfires, the higher the risk that a
17 utility’s equipment will be involved in one ignition. As S&P recently stated, “because we
18 view the likelihood of a change to California’s interpretation of inverse condemnation as
19 remote, and favorable climate change patterns are also unlikely to emerge for a state with
20 a long history of drought conditions, we are unlikely to raise ratings for utilities with
21 meaningful wildfire-related risks in the near term.”⁵⁷ As a result, the combination of risk-
22 reducing elements of the legislation and these remaining uncertainties following
23 implementation cannot be measured within a standard industry peer group.

⁵⁴ California Wildfire Fund Durability Analysis, Filsinger Energy Partners (June 26, 2019) at 2-3, (assuming a 20% cap, as ultimately adopted); *see also* Moody’s, *Rating Action: Moody’s affirms San Diego Gas & Electric’s ratings; changes outlook to positive from negative* (July 29, 2019) at 1, (referencing Filsinger analysis).

⁵⁵ S&P June 3, 2021; Moody’s May 10, 2021.

⁵⁶ AB 1054, Chapter 3. Operations of the Fund, (3)(A).

⁵⁷ S&P Jun. 3, 2021 at 10.

1 Thinking about this from an investor’s perspective, with all other risks being equal, why
2 would an investor choose to invest in a California utility company without a premium for
3 bearing that additional risk?

4 **Q. Please describe your approach to estimating the risk of potential losses associated**
5 **with wildfires.**

6 A. As described above, the Company experienced devastating wildfires in 2007 resulting in
7 significant liabilities that were borne by shareholders. Since that time, the Company has
8 made substantial efforts to mitigate that risk as described in its Wildfire Mitigation Plan
9 (“WMP”) and is recognized as a “global leader” in wildfire mitigation.⁵⁸ Nonetheless,
10 even though the Company has sought to limit the potential for another catastrophic
11 wildfire, it cannot eliminate that risk. The Company has also taken steps to limit its
12 financial exposure to the potential liabilities associated with wildfire events. But it may
13 also be financially inefficient to fully-insure against that risk, if it is even possible.
14 Looking at the earnings impact from future wildfire liabilities relative to the Company’s
15 insurance coverage provides an estimate of losses an investor can expect, and the
16 offsetting earnings required to compensate for that loss.

17 **Q. What is the Company’s current level of insurance coverage for liabilities associated**
18 **with wildfires?**

19 A. The Company currently maintains insurance policies for wildfire liabilities with a
20 covered amount of \$1.25 billion. This includes several conventional insurance policies
21 arrayed in an “insurance tower,” which also includes two CAT bonds. For comparison,
22 the liability claims and expenses associated with the 2007 wildfires were approximately

⁵⁸ S&P Jun. 3, 2021 at 8.

1 \$2.4 billion. If the Company experienced an event of a similar magnitude today, there
2 would be a potential gap of \$1.15 billion of claims above insurance reimbursements.
3 However, the effects of inflation, increased residential and commercial density in the
4 service territory, and litigation experience could make a similar fire far more costly
5 today.

6 **Q. Have you included an estimated risk premium in your ROE recommendation?**

7 A. No, I have not. While it is possible to estimate an appropriate risk premium to
8 compensate investors for the risks related to wildfire liabilities based on the cost of
9 insurance, I did not make an explicit adjustment to my ROE recommendation. Rather, I
10 considered wildfire risks along with several other risk factors in assessing how the
11 Company compares to an average risk utility company.

12 **B. Capital Expenditure Program**

13 **Q. Please discuss SDG&E's capital spending program.**

14 A. The Company plans a major capital investment program over the 2022-2026 period,
15 totaling \$11.4 billion, which will result in an unprecedented increase in the Company's
16 invested plant. As with any utility facing substantial capital expenditure requirements,
17 the Company's risk profile is affected in two significant and related ways: (1) the
18 heightened level of investment increases the risk of under recovery or delayed recovery
19 of the invested capital; and (2) an inadequate return would put downward pressure on key
20 credit metrics. The absolute level of investment required will put significant pressure on
21 the Company's ability to raise capital, and the terms will have lasting impacts for the
22 Company's customers.

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

3 A. Yes. From a credit perspective, the additional pressure on cash flows associated with
4 higher levels of capital expenditures exerts corresponding pressure on credit metrics and,
5 therefore, credit ratings. To that point, S&P explains the importance of regulatory
6 support for large capital projects:

7 When applicable, a jurisdiction’s willingness to support large capital
8 projects with cash during construction is an important aspect of our
9 analysis. This is especially true when the project represents a major
10 addition to rate base and entails long lead times and technological risks
11 that make it susceptible to construction delays. Broad support for all
12 capital spending is the most credit-sustaining. Support for only specific
13 types of capital spending, such as specific environmental projects or
14 system integrity plans, is less so, but still favorable for creditors.
15 Allowance of a cash return on construction work-in-progress or similar
16 ratemaking methods historically were extraordinary measures for use in
17 unusual circumstances, but when construction costs are rising, cash flow
18 support could be crucial to maintain credit quality through the spending
19 program. Even more favorable are those jurisdictions that present an
20 opportunity for a higher return on capital projects as an incentive to
21 investors.⁵⁹

22 With regard to SDG&E’s credit profile, S&P acknowledged that the Company’s capital
23 spending as a “key risk,” and more specifically “[c]ontinued negative discretionary cash
24 flow primarily driven by robust capital spending.”⁶⁰ Moody’s similarly regards SDG&E’s
25 elevated level of capital spending as a credit challenge.⁶¹ Therefore, to the extent that
26 SDG&E’s rates do not permit the Company an opportunity to recover its full cost of doing

⁵⁹ S&P Global Ratings, *Assessing U.S. Investor-Owned Utility Regulatory Environments* (August 10, 2016) at 7.

⁶⁰ S&P Global Ratings, *Sempra Energy Outlook Remains Negative, 'BBB+' Rating Affirmed On Asset Sell-Down* (December 22, 2021) at 3

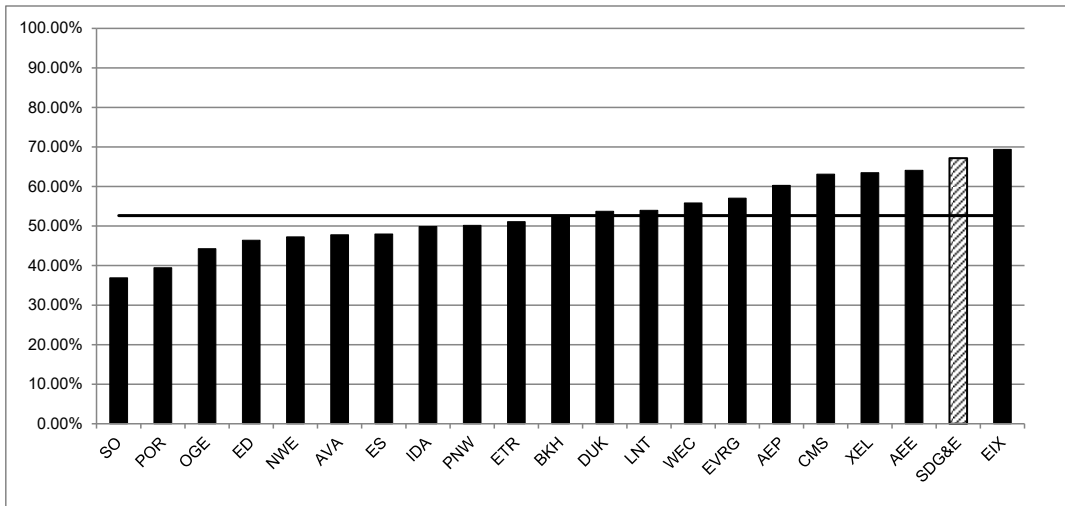
⁶¹ Moody’s Mar. 30, 2021.

1 business, SDG&E will face increased recovery risk and increased pressure on its credit
2 metrics. Maintaining access to capital markets on favorable terms is especially important
3 for utilities and their customers during periods of significant capital investment.

4 **Q. Have you analyzed how SDG&E’s capital spending program compares to those of**
5 **the proxy group companies?**

6 A. Yes. I compared the ratio of projected capital expenditures to net utility plant for SDG&E
7 to the ratios for the proxy group companies. Figure 16 shows that SDG&E’s ratio of
8 projected capital expenditures to net utility plant is 1.28 times higher than the median ratio
9 for the proxy group of 52.66 percent.

10 **Figure 16: Ratio of 2022-26 Capital Expenditures to 2020 Net Utility Plant**



11
12 **Q. What is your conclusion regarding how SDG&E’s projected capital expenditure**
13 **program affects the Company’s risk profile and cost of equity?**

14 A. My primary conclusion is that SDG&E is projecting a substantial capital spending
15 program through 2026 that will require the Company to maintain access to capital
16 markets on favorable terms and conditions. SDG&E’s ratio of capital expenditure
17 requirements to net utility plant is above the ratios for the proxy group average, and the

1 absolute magnitude of SDG&E’s capital program places pressure on the Company’s cash
2 flows and credit metrics. These investments elevate the risk profile of SDG&E. For these
3 reasons, it is important that the authorized ROE be set at a level that allows SDG&E to
4 continue to attract both debt and equity under favorable terms under a variety of
5 economic and financial market conditions.

6 **C. Environmental and Clean Energy Mandates**

7 **Q. Please describe the environmental mandates that will be required by SDG&E to**
8 **achieve California’s clean energy goals.**

9 A. Senate Bill 100 (“SB 100”) requires each California electric utility, including SDG&E, to
10 procure 50 percent of its annual electric energy requirements from renewable energy
11 sources by 2026, and 60 percent by 2030. In addition, SB 100 creates the policy of
12 meeting all of California’s retail electricity supply with a mix of Renewable Portfolio
13 Standard (“RPS”) Program-eligible and zero-carbon resources by 2045.⁶²

14 **Q. Have you considered how the SB 100 requirements compare to other states and the**
15 **proxy companies?**

16 A. Yes. California is one of eight states that will require at least 50 percent carbon-free
17 generation by 2050. Moody’s has recognized the incremental risk in California relative
18 to other states, observing that “SDG&E’s credit also factors in our view that political risk,
19 in terms of media attention and the demand on utilities to implement the state’s clean
20 energy policy goals, is higher in California compared to most other jurisdictions in the
21 US.”⁶³ To assess the relative risk compared to the proxy group, I compared all of the

⁶² Sempra Energy, 2020 SEC Form 10-K (February 27, 2020) at 37.

⁶³ Moody’s May 10, 2021 at 1.

operating companies in the proxy group by the renewable portfolio standards by state for each company’s service territory. Based on the state requirements, I assigned each state a value of 1 through 5 based on the following criteria shown in Figure 17, with 1 representing the strongest or strictest requirements, like those mandated in California.

Figure 17: RPS Rankings

State Requirement Categories	Rank Assigned
Requirements of 50% or greater, and 100% by 2050 or sooner	1
Requirements of 50% or greater	2
Requirements of < 50%	3
Voluntary Goal	4
No Standard or Target	5

In order to compare this information for each proxy company, I combined the rankings for the operating companies’ jurisdictions, weighting each jurisdiction by the operating company’s customers as a percent of the total customers. This resulted in a weighted total ranking for each proxy company, shown in the Figure 18, below in order of most strict to least strict requirements.

Figure 18: Proxy Group Comparative RPS Rankings

Company	Weighted Average Ranking
<i>SDG&E</i>	<i>1.00</i>
Edison International	1.00
Consolidated Edison, Inc.	1.02
Portland General Electric Company	2.00
Xcel Energy Inc.	2.23
Avista Corporation	2.49
Eversource Energy	2.67
Black Hills Corporation	2.84
WEC Energy Group, Inc.	2.99
Alliant Energy Corporation	3.00
Ameren Corporation	3.00

CMS Energy Corporation	3.00
Pinnacle West Capital Corporation	3.00
NorthWestern Corporation	3.15
American Electric Power Company, Inc.	3.58
Evergy, Inc.	3.61
Duke Energy Corporation	3.76
OGE Energy Corp.	4.08
Entergy Corporation	4.70
IDACORP, Inc.	4.90
Southern Company	5.00

1 The requirements imposed on SDG&E are significantly more stringent relative to the
2 proxy companies, and only matched by one other company, Edison International. There
3 are other companies that have set voluntary corporate targets, but these lack the
4 enforcement of California’s mandate that an investor would consider. Compliance with
5 SB 100’s requirements create risks for SDG&E relative to the proxy companies.

6 **D. Regulatory Risk**

7 **Q. Please explain how the regulatory framework affects investors’ risk assessments.**

8 A. The ratemaking process is premised on the principle that, for investors and companies to
9 commit the capital needed to provide safe and reliable utility services, the utility must
10 have the opportunity to recover invested capital and the market-required return on such
11 capital. Regulatory commissions recognize that, because utility operations are capital
12 intensive, regulatory decisions should enable the utility to attract capital at reasonable
13 terms, thereby balancing the long-term interests of investors and customers. In that
14 respect, the regulatory framework in which a utility operates is one of the most important
15 factors in both debt and equity investors’ risk assessments. Because investors have many
16 investment alternatives, even within a given market sector, the Company’s authorized

1 return must be adequate on a relative basis to ensure its ability to attract capital under a
2 variety of economic and financial market conditions.

3 **Q. Please explain how credit rating agencies consider the regulatory framework in**
4 **establishing a company’s credit rating.**

5 A. Moody’s and S&P both consider the overall regulatory framework in establishing credit
6 ratings. Moody’s establishes credit ratings based on four key factors:

7 **Figure 19: Moody’s Rating Factors**

Factor	Weighting
Regulatory Framework	25%
Ability to Recover Costs and Earn Returns	25%
Diversification	10%
Financial Strength	40%
Total	100%

8
9 Two of these factors (*i.e.*, regulatory framework and the ability to recover costs and earn
10 returns) are based on the regulatory environment such that half of Moody’s overall
11 assessment of business and financial risk for regulated utilities is based upon the
12 regulatory environment.⁶⁴ Moody’s further subdivides the first two factors, Regulatory
13 Framework and the Ability to Recover Costs and Earn Returns, into sub-factors to help
14 “provide more granularity and transparency on the overall regulatory environment, which
15 is the most important consideration for this sector.”⁶⁵ Similarly, S&P has identified the
16 regulatory environment as an important factor, stating, “we believe the fundamental

⁶⁴ Moody’s Investor Service, Rating Methodology, Regulated Electric and Gas Utilities, December 23, 2013, at 6.

⁶⁵ *Id.* at 3.

1 regulatory environment in the jurisdictions in which a utility operates often influence
2 credit quality the most.”⁶⁶

3 **Q. Please explain the effect of regulatory risk on the Company’s ability to raise capital**
4 **and the impact on customers.**

5 A. Given the robust capital spending plan, and the consequent need to raise capital, it is
6 important that the Company be able to maintain access to the capital markets at
7 reasonable rates. Moody’s has highlighted SDG&E’s material capital investment plan,
8 which will require incremental debt, as a “credit challenge.”⁶⁷ In addition, Moody’s
9 observes “Our view considers the elevated political risk and public scrutiny in California
10 along with affordability issues and the significant demands that are placed on the
11 California utilities amid many ambitious public policy initiatives.”⁶⁸ Equity analysts
12 have similarly discounted Sempra and other publicly-traded California utility parent
13 companies based upon “a challenging regulatory and political backdrop along with
14 heightened fire risk.”⁶⁹ In other states, the regulatory environment has come into
15 increased focus for investors. For example, in New York, several of the state’s operating
16 utilities have experienced an erosion in credit metrics and received credit rating
17 downgrades. Figure 20 below summarizes the recent credit ratings actions by Moody’s
18 on New York utilities.

⁶⁶ Standard & Poor’s, *Assessing U.S. Utility Regulatory Environments*, March 11, 2010, at 2.

⁶⁷ Moody’s at 2.

⁶⁸ *Id.* at 10.

⁶⁹ Morgan Stanley, *Sempra* (June 30, 2021) at 2.

1

Figure 20: Moody's Rating Actions on New York Utilities

Credit Action	Date
Brooklyn Union Gas ("KEDNY") and KeySpan Gas East ("KEDLI") - put on review for downgrade	November 2019
KEDNY and KEDLI - ratings confirmed with negative outlooks	December 2019
Consolidated Edison, Inc. ("ConEd"), Consolidated Edison Company of New York, Inc. ("CECONY") and Orange and Rockland Utilities ("O&R")	December 2019
ConEd and CECONY downgraded	March 2020
Niagara Mohawk - negative outlook	June 2020
KEDNY - review for downgrade	August 2020
New York State Electric & Gas and Rochester Gas and Electric - negative outlooks	September 2020
Central Hudson Gas & Electric - negative outlook	October 2020
KEDNY - downgraded to Baa1	November 2020

2 Declining credit ratings will increase costs to customers by increasing the cost of debt as
3 the New York utilities continue to raise capital to support their capital programs. As
4 noted, Moody's has similarly stated that a downgrade of SDG&E's credit rating is
5 possible if there is a "deterioration in regulatory support or an increase in regulatory
6 contentiousness."⁷⁰ In particular, Moody's notes that it's outlook is predicated upon
7 continued regulatory and political support for SDG&E's wildfire mitigation plans,
8 including its use of public safety power shutoffs;⁷¹ which S&P believes are mitigating
9 fire risks.⁷² As discussed above, the Company's capital expenditure program is designed
10 to benefit and deliver value for customers. Given the significant level of planned capital

⁷⁰ Moody's Mar. 30, 2021 at 2.

⁷¹ *Id.* at 1.

⁷² S&P Jun. 3, 2021 at 3.

1 expenditures, any increases in borrowing costs would have a proportional impact on costs
2 to customers.

3 **Q. Have you performed an analysis of the regulatory mechanisms for SDG&E as**
4 **compared to those for the proxy group companies?**

5 A. Yes. I have conducted an analysis of the regulatory mechanisms that are in place for
6 SDG&E compared with those for the operating utility companies held by the proxy
7 group. The results of my analysis are presented in Exhibit JMC-9. Specifically, I
8 examined the following factors that affect the regulatory risk of SDG&E and the proxy
9 group companies: (1) test year convention; (2) rate base convention; (3) revenue
10 decoupling; (4) capital cost recovery; and (5) Construction Work in Progress (“CWIP”)
11 in rate base.

12 While SDG&E has a number of regulatory balancing accounts, it is instructive to look at
13 the overall regulatory cost recovery mechanisms available to the proxy companies when
14 evaluating the regulatory risk of the subject company to the proxy group. As shown in
15 Exhibit JMC-9, 53 percent of the operating companies in the proxy group provide service
16 in jurisdictions that allow the use of a fully or partially forecasted test year, which is
17 effectively similar to SDG&E’s projected rate base for the forecasted test year.

18 Approximately 43 percent of the operating companies in the proxy group use year-end
19 rate base, which provides more timely cost recovery of capital investments, while 57
20 percent, like SDG&E, use average rate base. SDG&E is able to apply a true-up
21 mechanism to mitigate volumetric risk through decoupling, while approximately 55
22 percent of the operating companies held by the proxy group have either full or partial
23 revenue decoupling mechanisms that protect against volumetric risk. Approximately 17

1 percent of the operating companies in the proxy group have a cost recovery mechanism
2 for generation capacity, and about 38 percent have cost recovery for generic
3 infrastructure replacement. Finally, approximately 71 percent of the operating companies
4 held by the proxy group are allowed to include CWIP in a rate base. Overall, from an
5 investor perspective, the regulatory framework available to SDG&E is constructive, but
6 does not provide risk mitigation that is meaningfully different from the proxy companies.

7 **VIII. CAPITAL STRUCTURE**

8 **Q. What is SDG&E's proposed capital structure?**

9 A. As discussed in Maritza Mekitarian's testimony (Exhibit SDG&E-02), SDG&E is
10 proposing to use an authorized financial capital structure consisting of 54 percent
11 common equity and 46 percent debt, compared to its actual capital structure of 56 percent
12 common equity and 44 percent debt, and its currently authorized capital structure of
13 52.00 percent common equity, 2.75 percent preferred equity, and 45.25 percent long-term
14 debt.

15 **Q. How have you assessed the reasonableness of SDG&E's proposed capital structure 16 with respect to the proxy group?**

17 A. The proxy group has been selected to reflect comparable companies in terms of business
18 and financial risks. Therefore, it is appropriate to compare the financial capital structures
19 of the proxy group companies to the financial capital structure proposed by SDG&E in
20 order to assess whether the Company's capital structure is reasonable and consistent with
21 industry standards for companies with commensurate risk. I calculated the weighted
22 average capital structures for each of the proxy group operating companies on a quarterly
23 basis for the eight quarters through Q3 2021. Exhibit JMC-10 shows that the Company's
24 proposed common equity ratio of 54 percent is well within the range of actual common

1 equity ratios of 46.90 percent to 61.73 percent, and just over the mean of 52.65 percent,
2 for the operating companies held by the proxy group over this period. In addition, recent
3 benchmarks are consistent with the Company's requested ROE and capital structure. For
4 example, on August 10, 2021, Florida Power and Light, filed a settlement agreement with
5 the Florida Public Service Commission that specifies an authorized ROE of 10.6 percent
6 and an ROE allowance up to 11.7 percent over a four-year rate term on a 59.46 percent
7 equity ratio.⁷³

8 **Q. Please describe how customers have benefited from SDG&E's actual equity ratio of**
9 **56 percent.**

10 A. SDG&E's capital structure directly affects the Company's credit metrics. As such,
11 customers have benefited from the Company decreasing its financial risk by maintaining
12 a 56 percent equity ratio. However, the Company's authorized rate of return does not
13 reflect its actual equity ratio, as SDG&E's currently authorized equity ratio is 52 percent.
14 That is, customers have received the benefits associated with a stronger balance sheet, but
15 the Company is not able to recover the costs associated with a higher equity ratio. The
16 proposed 54 percent equity ratio will continue to allow customers to benefit from the
17 Company's actual 56 percent equity ratio, but it will more closely align the authorized
18 equity ratio with the actual capital structure relative to the 52 percent equity ratio
19 authorized in the last case. If the Commission continues to authorize a 52 percent equity
20 ratio for SDG&E, an ROE of 10.81 percent (a 26 basis point increase compared to the
21 Company's requested 10.55 percent) would be reasonable to allow the Company to

⁷³ Florida Public Service Commission, Docket No: 20210015-EI, *Joint Motion for Approval of Settlement Agreement* (August 10, 2021) at 3, available at <https://cleanenergy.org/wp-content/uploads/20210015-Joint-Motion-for-Approval-of-Settlement-Agreement.pdf>.

1 maintain an equivalent rate of return to support the Company's financial soundness and
2 credit ratings.

3 **Q. What is your conclusion regarding the appropriateness of SDG&E's proposed**
4 **capital structure in this proceeding?**

5 A. Based on the analysis presented in Exhibit JMC-10, my conclusion is that SDG&E's
6 proposed financial capital structure is reasonable. Sufficient equity in the capital
7 structure is an important factor for maintaining SDG&E's financial integrity and
8 investment grade credit rating and it is an essential component of SDG&E's financial
9 policies enabling access to capital on favorable terms in a variety of market
10 circumstances.

11 **IX. CONCLUSIONS**

12 **Q. What is your conclusion regarding a fair ROE for SDG&E?**

13 A. Based on the quantitative analyses provided in my Direct Testimony, I have established a
14 range of ROE results shown previously in Figure 13 (also see Exhibit JMC-2 for
15 summary table). I consider a reasonable range of ROE to be in the range 10.40 percent to
16 11.40 percent. In creating this range, I give weight to the results of the DCF, CAPM,
17 Bond Yield Risk Premium and the Expected Earnings analysis. In addition to
18 establishing the range of ROE results, I also considered SDG&E risks compared to the
19 proxy utilities and conclude that SDG&E is above average risk and that it would be
20 reasonable for SDG&E's ROE to be set at the top of the range, given the wildfire risk
21 alone. From within that reasonable range, the Company is requesting an ROE of 10.55

1 percent. Based on SDG&E's business and financial risks, the Company's requested ROE
2 of 10.55 percent is fair and appropriate, and is in fact conservative.

3 **Q. What is your recommendation with regard to the capital structure for SDG&E in**
4 **this proceeding?**

5 A. I support SDG&E's actual financial capital structure of 54 percent common equity and 46
6 percent debt as reasonable relative to the range of capital structures for the operating
7 companies held by the proxy group companies.

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

9 A. Yes, it does.

EXHIBIT JMC-1

RESUME OF JAMES M. COYNE

JAMES M. COYNE

Senior Vice President

Mr. Coyne provides financial, regulatory, strategic, and litigation support services to clients in the natural gas, power, and utilities industries. Drawing upon his industry and regulatory expertise, he regularly advises utilities, public agencies and investors on business strategies, investment evaluations, and matters pertaining to rate and regulatory policy. Prior to Concentric, Mr. Coyne worked in senior consulting positions focused on North American utilities industries, in corporate planning for an integrated energy company, and in regulatory and policy positions in Maine and Massachusetts. He has authored numerous articles on the energy industry and provided testimony and expert reports before federal, state and provincial jurisdictions in the U.S. and Canada. Mr. Coyne holds a B.S. in Business from Georgetown University and an M.S. in Resource Economics from the University of New Hampshire.

AREAS OF EXPERTISE

Energy Regulation

- Rate policy
- Cost of capital
- Incentive regulation
- Fuels and power markets

Management and Business Strategy

- Fuels and power market assessments
- Investment feasibility
- Corporate and business unit planning
- Benchmarking and productivity analysis

Financial and Economic Advisory

- Valuation analysis
- Due diligence
- Buy and sell-side advisory

Litigation Support and Expert Testimony

- Rate and regulatory policy
- Fuels and power markets
- Contract litigation
- Valuation and damages



PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2006 – Present)

Senior Vice President

Vice President

FTI Consulting (Lexecon) (2002 – 2006)

Senior Managing Director – Energy Practice

Arthur Andersen LLP (2000 – 2002)

Managing Director, Andersen Corporate Finance – Energy and Utilities

Navigant Consulting, Inc. (1996 – 2000)

Managing Director, Financial Services Practice

Senior Vice President, Strategy Practice

TotalFinaElf (1990 – 1996)

Manager, Corporate Planning and Development

Manager, Investor Relations

Manager of Strategic Planning and Vice President, Natural Gas Division

Arthur D. Little, Inc. (1989 – 1990)

Senior Consultant – International Energy Practice

DRI/McGraw-Hill (1984 – 1989)

Director, North American Natural Gas Consulting

Senior Economist, U.S. Electricity Service

Massachusetts Energy Facilities Siting Council (1982 – 1984)

Senior Economist – Gas and Electric Utilities

Maine Office of Energy Resources (1981 – 1982)

State Energy Economist

EDUCATION

University of New Hampshire

M.S., Resource Economics, *with honors*, 1981

Georgetown University

B.S., Business Administration and Economics, *cum laude*, 1975

DESIGNATIONS AND AFFILIATIONS

Community Rowing Inc., Board of Directors, 2015 - 2019

Georgetown University, Alumni Admissions Interviewer, 1988 – current

NASD General Securities Representative and Managing Principal (Series 7, 63 and 24 Certifications), 2001



American Petroleum Institute, CEO's Liaison to Management and Policy Committees, 1994-1996

National Petroleum Council, Regulatory and Policy Task Forces, 1992

President, International Association for Energy Economics, Dallas Chapter, 1995

Gas Research Institute, Economics Advisory Committee, 1990-1993

NARUC, Advanced Regulatory Studies Program, Michigan State University, 1984

PUBLICATIONS AND RESEARCH

"Advancing FERC's Methodology for Determining Allowed ROEs for Electric Transmission Companies," submitted to FERC on behalf of EEL, James Coyne, Joshua Nowak and Julie Lieberman, May, 2020.

"Regulator Rationale for Ratepayer-Funded Electricity and Natural Gas Innovation", James M. Coyne, Robert C. Yardley, Jr. and Jessalyn G. Pryciak, Energy Regulation Quarterly, Volume 6, Issue 3, 2018.

"Stimulating Innovation on Behalf of Canada's Electricity and Natural Gas Consumers" (with Robert Yardley), prepared for the Canadian Gas Association and Canadian Electricity Association, May 2015.

"Autopilot Error: Why Similar U.S. and Canadian Risk Profiles Yield Varied Rate-making Results" (with John Trogonoski), Public Utilities Fortnightly, May 2010

"A Comparative Analysis of Return on Equity of Natural Gas Utilities" (with Dan Dane and Julie Lieberman), prepared for the Ontario Energy Board, June 2007

"Do Utilities Mergers Deliver?" (with Prescott Hartshorne), Public Utilities Fortnightly, June 2006

"Winners and Losers: Utility Strategy and Shareholder Return" (with Prescott Hartshorne), Public Utilities Fortnightly, October 2004

"Winners and Losers in Restructuring: Assessing Electric and Gas Company Financial Performance" (with Prescott Hartshorne), white paper distributed to clients and press, August 2003

"The New Generation Business," commissioned by the Electric Power Research Institute (EPRI) and distributed to EPRI members to contribute to a series on the changes in the Power Industry, December 2001

Potential for Natural Gas in the United States, Volume V, Regulatory and Policy Issues (co-author), National Petroleum Council, December 1992

"Natural Gas Outlook," articles on U.S. natural gas markets, published quarterly in the Data Resources Energy Review and Natural Gas Review, 1984-1989

SELECTED SPEAKING ENGAGEMENTS

"Energy Sector in Transition", Ontario Energy Association, Toronto, ON, September 24, 2018.

"Understanding Regulated Utilities in Today's Capital Markets", NARUC Annual Meeting, La Quinta, CA, November 14, 2016.



“Rate of Return: Where the Regulatory Rubber Meets the Road,” CAMPUT Annual Conference, Montreal, Quebec, May 17, 2016.

“Innovations in Utility Business Models and Regulation”, The Canadian Association of Members of Public Utility Tribunals (CAMPUT) 2015 Energy Regulation Course, Queens University, Kingston, Ontario, June 2015

“M&A and Valuations,” Panelist at Infocast Utility Scale Solar Summit, September 2010

“The Use of Expert Evidence,” The Canadian Association of Members of Public Utility Tribunals (CAMPUT) 2010 Energy Regulation Course, Queens University, Kingston, Ontario, June 2010

“A Comparative Analysis of Return on Equity for Utilities in Canada and the U.S.”, The Canadian Association of Members of Public Utility Tribunals (CAMPUT) Annual Conference, Banff, Alberta, April 22, 2008

“Nuclear Power on the Verge of a New Era,” moderator for a client event co-hosted by Sutherland Asbill & Brennan and Lexecon, Washington D.C., October 2005

“The Investment Implications of the Repeal of PUCHA,” Skadden Arps Client Conference, New York, NY, October 2005

“Anatomy of the Deal,” First Annual Energy Transactions Conference, Newport, RI, May 2005

“The Outlook for Wind Power,” Skadden Arps Annual Energy and Project Finance Seminar, Naples, FL, March 2005

“Direction of U.S. M&A Activity for Utilities,” Energy and Mineral Law Foundation Conference, Sanibel Island, FL, February 2002

“Outlook for U.S. Merger & Acquisition Activity,” Utility Mergers & Acquisitions Conference, San Antonio, TX, October 2001

“Investor Perspectives on Emerging Energy Companies,” Panel Moderator at Energy Venture Conference, Boston, MA, June 2001

“Electric Generation Asset Transactions: A Practical Guide,” workshop conducted at the 1999 Thai Electricity and Gas Investment Briefing, Bangkok, Thailand, July 1999

“New Strategic Options for the Power Sector,” Electric Utility Business Environment Conference, Denver, CO, May 1999

“Electric and Gas Industries: Moving Forward Together,” New England Gas Association Annual Meeting, November 1998

“Opportunities and Challenges in the Electric Marketplace,” Electric Power Research Institute, July 1998



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Alberta Beverage Container Management Board				
Alberta Beverage Container Management Board	2016 2019	Expert for the Board	N/A	Return Margin on Bottle Depots
Alberta Utilities Commission				
ATCO Utilities Group	2008 2009	ATCO Gas; ATCO Pipelines Ltd.; ATCO Electric Ltd.	Application No. 1578571 / Proceeding ID. 85	2009 Generic Cost of Capital Proceeding (Gas & Electric)
Enmax Power Corporation	2017	Enmax	22570	Cost of Common Equity
Enmax Power Corporation	2020	Enmax	24110	2021 Generic Cost of Capital
American Arbitration Association				
TransCanada Corporation	2004	TransCanada Corporation	AAA Case No. 50T 1810018804	Valuation of Natural Gas Pipeline
British Columbia Utilities Commission				
FortisBC	2012	FortisBC Utilities	G-20-12	Cost of Capital Adjustment Mechanisms
FortisBC	2015 2016	FortisBC Utilities	Project 3698852	Cost of Capital (Gas and Electric Distribution)
FortisBC	2022	FortisBC Utilities		Cost of Capital (Gas and Electric Distribution)
California Public Utilities Commission				
San Diego Gas & Electric Company	2019	San Diego Gas & Electric Company	A-19-04-014	Cost of Capital (Gas Distribution)
San Diego Gas & Electric Company	2021	San Diego Gas & Electric Company	A-21-08-014	Cost of Capital (Electric & Gas Distribution)
Canada Energy Regulator				
Enbridge Pipelines Inc.	2021	Enbridge Pipelines Inc.	RH-001-2020	Cost of Capital (Oil Pipeline)
Connecticut Department of Public Utility Control				
Aquarion Water Company of CT/ Macquarie Securities	2007	Aquarion Water Company of CT	DPUC Docket No. 07-05-19	Return on Equity (Water)
Federal Energy Regulatory Commission				
Atlantic Power Corporation	2007	Atlantic Path 15, LLC	ER08-374-000	Return on Equity (Electric)
Atlantic Power Corporation	2010	Atlantic Path 15, LLC	Docket No. ER11-2909-000	Return on Equity (Electric)
Atlantic Power Corporation	2011	Atlantic Path 15, LLC	Docket Nos. ER11-2909 and EL11-29	Rate of Return (Electric Transmission)



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Startrans IO, LLC	2012	Startrans IO, LLC	ER-13-272-000	Cost of Capital (Electric Transmission)
Startrans IO, LLC	2015	Startran IO, LLC	ER-16-194-000 and EL16-25-000	Cost of Capital (Electric Transmission)
Northern States Power Company	2019	Northern States Power Company	ER20-26-000	Cost of Capital (Electric Transmission)
PPL Electric Utilities Corp.	2020	PP&I Industrial Customer Alliance v. PPL Electric	EL20-48-000	Answering Testimony in Response to a Section 206 ROE Complaint
South First Energy Operating Companies	2020	South First Energy Operating Companies	ER21-253-000	Cost of Capital (Electric Transmission)
Florida Public Service Commission				
Florida Power & Light Company	2021	Florida Power & Light Company	Docket No. 20210015-EI	Cost of Capital (Electric)
Hawaii Public Utility Commission				
The Gas Company	2017	The Gas Company	Docket No. 2017-0105	Cost of Capital (Gas Distribution)
Maine Public Utilities Commission				
Bangor Hydro Electric Company	1998	Bangor Hydro Electric Company	MPUC Docket No. 98-820	Transaction-Related Financial Advisory Services, Valuation
Central Maine Power Company	2007	Central Maine Power Company	MPUC Docket No. 2007-215	Sales Forecast
Enmax Corporation	2019	Enmax Corporation	2019-00097	Regulatory Approval of Emera Maine Acquisition
Versant Power	2021	Versant Power	MPUC Docket No. 2020-00316	Cost of Capital (Electric)
Maryland State Board of Contract Appeals				
Green Planet Power Solutions	2018	Green Planet Power Solutions and Maryland Bio Energy LLC v. Maryland Department of General Services	MSBCA 3061	Contract Litigation, Power Purchase Agreement, Damages Analysis
Massachusetts Superior Court				
Burncoat Pond Watershed District	2010	Central Water District v. Burncoat Pond Watershed District	WDCV 2001-0105	Valuation/Eminent Domain



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Minnesota Public Utilities Commission				
Northern States Power Company	2015 2016	Northern States Power Company	E-002-GR-15-826	Cost of Capital (Electric)
Northern States Power Company	2017	Northern States Power Company	E002/M-17-797 G002/M-17-787 E002/M-17-818	Cost of Capital (Electric and Gas Rate Riders for Transmission, Renewable Generation and Gas Distribution)
New Brunswick Energy and Utilities Board				
Liberty Utilities (Gas New Brunswick) LP	2021	Liberty Utilities (Gas New Brunswick) LP	491	Cost of Capital (Gas)
Newfoundland and Labrador Board of Commissioners of Public Utilities				
Newfoundland Power	2016	Newfoundland Power	2016 GRA	Cost of Capital (Electric)
Newfoundland Power	2018	Newfoundland Power	2018 GRA	Cost of Capital (Electric)
Newfoundland Power	2021	Newfoundland Power	2021 GRA	Cost of Capital (Electric)
New Jersey Board of Public Utilities				
Conectiv	2000- 2001	Atlantic City Electric Company	NJBPU Docket No. EM00020106	Transaction-Related Financial Advisory Services
Nova Scotia Utility and Review Board				
Nova Scotia Power Inc.	2012	Nova Scotia Power Inc.	2013 GRA	Return on Equity/Business Risk (Electric)
Nova Scotia Power Inc.	2022	Nova Scotia Power Inc.	2022 GRA	Return on Equity/Business Risk (Electric)
Ontario Energy Board				
Enbridge Gas Distribution and Hydro One Networks and the Coalition of Large Distributors	2009	Enbridge Gas Distribution and Hydro One Networks and the Coalition of Large Distributors	EB-2009-0084	Ontario Energy Board's 2009 Consultative Process on Cost of Capital Review (Gas & Electric)
Enbridge Gas Distribution	2012	Enbridge Gas Distribution	EB-2011-0354	Industry Benchmarking Study and Cost of Capital (Gas Distribution)
Enbridge Gas Distribution	2014	Enbridge Gas Distribution	EB-2012-0459	Incentive Regulation Plan and Industry Productivity Study



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Ontario Power Generation	2016	Ontario Power Generation	EB-2016-0152	Cost of Capital (Electric Generation)
Ontario Power Generation	2020	Ontario Power Generation	EB-2020-0290	Capital Structure (Electric Generation)
Prince Edward Island Regulatory and Appeals Commission				
Maritime Electric Company	2015	Maritime Electric Company	UE20942	Return on Capital (Electric)
Régie de l'énergie du Québec				
Gaz Métro	2012	Gaz Métro	R-3809-2012	Return on Equity/Business Risk/ Capital Structure (Gas Distribution)
Hydro-Québec Distribution and Hydro- Québec TransÉnergie	2013	Hydro-Québec Distribution and Hydro- Québec TransÉnergie	R-3842-2013	Return on Equity/Business Risk (Electric)
Hydro-Québec Distribution	2014	Hydro-Québec Distribution	R-3905-2014	Remuneration of Deferral Accounts
Hydro-Québec Distribution and Hydro- Québec TransÉnergie	2015-2017	Hydro-Québec Distribution and Hydro- Québec TransÉnergie	R-3897-2014	Performance-Based Ratemaking
South Carolina Public Service Commission				
Piedmont Natural Gas Company	2022	Piedmont Natural Gas Company	2022-89-G	Return on Equity
South Dakota Public Service Commission				
Northern States Power Company-MN	2012	Northern States Power Company-MN	EL 11-019	Return on Equity
Texas Public Utility Commission				
Texas New Mexico Power Company	2004	Texas New Mexico Power Company	PUC Docket No. 29206	Auction Process and Stranded Cost Recovery
U.S. Department of Commerce				
Government of Québec	2017	Duty Investigation of Uncoated Groundwood Paper from Canada	PUC Docket No. 29206	Contracting for Renewable Resources, Market Analysis, Damages Analysis
Vermont Public Service Board				
Vermont Gas Systems, Inc.	2006	Vermont Gas Systems, Inc.	VPSB Docket No. 7109	Models of Incentive Regulation
Vermont Gas Systems, Inc.	2012	Vermont Gas Systems, Inc.	Docket No. 7803A	Cost of Capital (Gas Distribution)



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Green Mountain Power Corporation	2013	Green Mountain Power Corporation	Docket No. 8191	Return on Equity (Electric)
Vermont Gas Systems, Inc.	2016	Vermont Gas Systems, Inc.	Docket No. 8698/8710	Return on Equity (Gas Distribution)
Green Mountain Power Corporation	2017	Green Mountain Power Corporation	Docket No. Tariff-8677	Return on Equity (Electric)
Green Mountain Power Corporation	2018	Green Mountain Power Corporation	18-0974	Return on Equity (Electric)
State Corporation of Virginia				
Dominion Energy Virginia	2021	Virginia Electric and Power Company	PUR-2021-00058	Cost of Capital (Electric)
Wisconsin Public Service Commission				
Wisconsin Power and Light Company	2007	Wisconsin Power and Light Company	PSCW Docket No. 6680-CE-170	Return on Equity (Electric)
Wisconsin Power and Light Company	2007	Wisconsin Power and Light Company	PSCW Docket No. 6680-CE-171	Return on Equity (Electric)
Northern States Power Company	2011	Northern States Power Company	PSCW Docket No. 4220-UR-117	Return on Equity (Electric)
Northern States Power Company	2013	Northern States Power Company	PSCW Docket No. 4220-UR-119	Return on Equity (Gas & Electric)
Northern States Power Company	2015	Northern States Power Company	PSCW Docket No. 4220-UR-121	Return on Equity (Gas & Electric)
Northern States Power Company	2017 2019	Northern States Power Company	PSCW Docket No. 4220-UR-123, 4220-UR-124	Return on Equity (Gas & Electric)
Northern States Power Company	2021	Northern States Power Company	4220-UR-125	Cost of Capital (Electric, Affidavit)
Yukon Utilities Board				
ATCO Electric Yukon	2016	ATCO Electric Yukon	2016-2017 GRA	Return on Equity (Electric)

EXHIBIT JMC-2

COMPREHENSIVE SUMMARY OF ROE RESULTS

COMBINED DCF, CAPM, RISK PREMIUM AND EXPECTED EARNINGS RESULTS - CURRENT INTEREST RATES

Company		30-Day DCF	90-Day DCF	180-Day DCF	CAPM VL Beta	CAPM BB Beta	AVG DCF	AVG CAPM	Risk Premium	Expected Earnings	4-model Average
Alliant Energy Corporation	LNT	8.92%	8.93%	8.92%	13.61%	13.80%	8.92%	13.71%	9.47%	11.79%	10.97%
Ameren Corporation	AEE	9.94%	9.95%	9.97%	12.94%	12.90%	9.95%	12.92%	9.47%	10.93%	10.82%
American Electric Power Company, Inc.	AEP	9.56%	9.65%	9.65%	12.27%	13.42%	9.62%	12.84%	9.47%	10.92%	10.71%
Avista Corporation	AVA	9.40%	9.60%	9.59%	14.95%	13.17%	9.53%	14.06%	9.47%	8.23%	10.32%
Black Hills Corporation	BKH	8.95%	8.96%	8.95%	15.62%	15.44%	8.95%	15.53%	9.47%	9.31%	10.81%
CMS Energy Corporation	CMS	9.87%	9.91%	9.93%	12.94%	13.09%	9.91%	13.01%	9.47%	12.99%	11.34%
Consolidated Edison, Inc.	ED	6.31%	6.42%	6.60%	12.27%	11.49%	6.44%	11.88%	9.47%	8.14%	8.98%
Duke Energy Corporation	DUK	10.29%	10.29%	10.27%	13.61%	13.00%	10.28%	13.30%	9.47%	9.64%	10.67%
Edison International	EIX	9.41%	9.23%	9.48%	14.95%	14.64%	9.37%	14.79%	9.47%	12.23%	11.47%
Entergy Corporation	ETR	7.14%	7.17%	7.19%	14.95%	15.08%	7.17%	15.02%	9.47%	11.27%	10.73%
Evergy, Inc.	EVRG	10.13%	10.04%	10.05%	14.95%	13.96%	10.07%	14.45%	9.47%	9.68%	10.92%
Eversource Energy	ES	8.98%	8.95%	8.96%	14.28%	14.19%	8.96%	14.24%	9.47%	9.74%	10.60%
IDACORP, Inc.	IDA	7.11%	7.08%	7.14%	12.94%	13.62%	7.11%	13.28%	9.47%	9.67%	9.88%
NorthWestern Corporation	NWE	7.52%	7.61%	7.45%	14.95%	15.74%	7.53%	15.35%	9.47%	7.77%	10.03%
OGE Energy Corporation	OGE	7.62%	7.73%	7.86%	16.30%	16.11%	7.74%	16.20%	9.47%	12.75%	11.54%
Pinnacle West Capital Corporation	PNW	4.97%	5.10%	4.74%	14.28%	14.43%	4.94%	14.36%	9.47%	8.60%	9.34%
Portland General Electric Company	POR	11.54%	11.58%	11.65%	14.28%	13.86%	11.59%	14.07%	9.47%	9.67%	11.20%
Southern Company	SO	9.46%	9.55%	9.60%	14.95%	14.29%	9.53%	14.62%	9.47%	14.30%	11.98%
Wisconsin Energy Corporation	WEC	9.42%	9.43%	9.43%	12.94%	13.03%	9.43%	12.99%	9.47%	13.25%	11.28%
Xcel Energy Inc.	XEL	9.22%	9.27%	9.26%	12.94%	13.27%	9.25%	13.10%	9.47%	11.29%	10.78%
PROXY GROUP MEAN		8.79%	8.82%	8.83%	14.05%	13.93%	8.81%	13.99%	9.47%	10.61%	10.72%
PROXY GROUP MEDIAN		9.31%	9.25%	9.35%	14.28%	13.83%	9.31%	14.07%	9.47%	10.33%	10.80%
Range - Low		4.97%	5.10%	4.74%	12.27%	11.49%	4.94%	11.88%	9.47%	7.77%	8.98%
Range - High		11.54%	11.58%	11.65%	16.30%	16.11%	11.59%	16.20%	9.47%	14.30%	11.98%

COMBINED DCF, CAPM, RISK PREMIUM AND EXPECTED EARNINGS RESULTS - PROJECTED INTEREST RATES

Company		30-Day DCF	90-Day DCF	180-Day DCF	CAPM VL Beta	CAPM BB Beta	AVG DCF	AVG CAPM	Risk Premium	Expected Earnings	4-model Average
Alliant Energy Corporation	LNT	8.92%	8.93%	8.92%	13.79%	13.96%	8.92%	13.88%	9.99%	11.79%	11.14%
Ameren Corporation	AEE	9.94%	9.95%	9.97%	13.18%	13.15%	9.95%	13.16%	9.99%	10.93%	11.01%
American Electric Power Company, Inc.	AEP	9.56%	9.65%	9.65%	12.57%	13.62%	9.62%	13.09%	9.99%	10.92%	10.91%
Avista Corporation	AVA	9.40%	9.60%	9.59%	15.01%	13.39%	9.53%	14.20%	9.99%	8.23%	10.49%
Black Hills Corporation	BKH	8.95%	8.96%	8.95%	15.62%	15.46%	8.95%	15.54%	9.99%	9.31%	10.95%
CMS Energy Corporation	CMS	9.87%	9.91%	9.93%	13.18%	13.32%	9.91%	13.25%	9.99%	12.99%	11.53%
Consolidated Edison, Inc.	ED	6.31%	6.42%	6.60%	12.57%	11.86%	6.44%	12.21%	9.99%	8.14%	9.19%
Duke Energy Corporation	DUK	10.29%	10.29%	10.27%	13.79%	13.23%	10.28%	13.51%	9.99%	9.64%	10.86%
Edison International	EIX	9.41%	9.23%	9.48%	15.01%	14.73%	9.37%	14.87%	9.99%	12.23%	11.61%
Entergy Corporation	ETR	7.14%	7.17%	7.19%	15.01%	15.13%	7.17%	15.07%	9.99%	11.27%	10.87%
Evergy, Inc.	EVRG	10.13%	10.04%	10.05%	15.01%	14.10%	10.07%	14.56%	9.99%	9.68%	11.07%
Eversource Energy	ES	8.98%	8.95%	8.96%	14.40%	14.32%	8.96%	14.36%	9.99%	9.74%	10.76%
IDACORP, Inc.	IDA	7.11%	7.08%	7.14%	13.18%	13.80%	7.11%	13.49%	9.99%	9.67%	10.07%
NorthWestern Corporation	NWE	7.52%	7.61%	7.45%	15.01%	15.73%	7.53%	15.37%	9.99%	7.77%	10.16%
OGE Energy Corporation	OGE	7.62%	7.73%	7.86%	16.24%	16.07%	7.74%	16.15%	9.99%	12.75%	11.66%
Pinnacle West Capital Corporation	PNW	4.97%	5.10%	4.74%	14.40%	14.54%	4.94%	14.47%	9.99%	8.60%	9.50%
Portland General Electric Company	POR	11.54%	11.58%	11.65%	14.40%	14.02%	11.59%	14.21%	9.99%	9.67%	11.36%
Southern Company	SO	9.46%	9.55%	9.60%	15.01%	14.41%	9.53%	14.71%	9.99%	14.30%	12.13%
Wisconsin Energy Corporation	WEC	9.42%	9.43%	9.43%	13.18%	13.26%	9.43%	13.22%	9.99%	13.25%	11.47%
Xcel Energy Inc.	XEL	9.22%	9.27%	9.26%	13.18%	13.48%	9.25%	13.33%	9.99%	11.29%	10.96%
PROXY GROUP MEAN		8.79%	8.82%	8.83%	14.19%	14.08%	8.81%	14.13%	9.99%	10.61%	10.89%
PROXY GROUP MEDIAN		9.31%	9.25%	9.35%	14.40%	13.99%	9.31%	14.21%	9.99%	10.33%	10.96%
Range - Low		4.97%	5.10%	4.74%	12.57%	11.86%	4.94%	12.21%	9.99%	7.77%	9.19%
Range - High		11.54%	11.58%	11.65%	16.24%	16.07%	11.59%	16.15%	9.99%	14.30%	12.13%

EXHIBIT JMC-3

PROXY GROUP SCREENING ANALYSIS

PROXY GROUP SCREENING DATA AND RESULTS - FINAL PROXY GROUP

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	
Company	Ticker	Dividends	S&P Credit Rating Between BBB- and AAA	Covered by More Than 1 Analyst	Positive Growth Rates From At Least 2 Sources	% Regulated Revenue of Total Utility Revenue > 80%	Regulated Operating Income of Total Income > 80%	Regulated Electric Revenue of Total Regulated Revenue	Regulated Electric Income of Total Regulated Income	Regulated Electric Revenue of Total Regulated Revenue	Regulated Electric Income of Total Regulated Income	Announced Merger within 180 days from 6/30/21
Alliant Energy Corporation	LNT	Yes	A-	Yes	Yes	98%	96%	86%	91%	12%	9%	No
Ameren Corporation	AEE	Yes	BBB+	Yes	Yes	100%	100%	81%	86%	18%	14%	No
American Electric Power Company, Inc.	AEP	Yes	A-	Yes	Yes	95%	97%	100%	100%	0%	0%	No
Avista Corporation	AVA	Yes	BBB	Yes	Yes	99%	100%	70%	78%	30%	22%	No
Black Hills Corporation	BKH	Yes	BBB+	Yes	Yes	100%	95%	42%	44%	59%	56%	No
CMS Energy Corporation	CMS	Yes	BBB+	Yes	Yes	93%	91%	70%	71%	29%	29%	No
Consolidated Edison, Inc.	ED	Yes	A-	Yes	Yes	94%	93%	75%	75%	20%	23%	No
Duke Energy Corporation	DUK	Yes	BBB+	Yes	Yes	98%	99%	92%	91%	8%	9%	No
Edison International	EIX	Yes	BBB	Yes	Yes	100%	90%	100%	100%	0%	0%	No
Entergy Corporation	ETR	Yes	BBB+	Yes	Yes	88%	100%	99%	99%	1%	1%	No
Evergy, Inc.	EVRG	Yes	A-	Yes	Yes	100%	100%	100%	100%	0%	0%	No
Eversource Energy	ES	Yes	A-	Yes	Yes	100%	92%	88%	89%	11%	11%	No
IDACORP, Inc.	IDA	Yes	BBB	Yes	Yes	100%	100%	100%	100%	0%	0%	No
NorthWestern Corporation	NWE	Yes	BBB	Yes	Yes	100%	100%	78%	83%	22%	17%	No
OGE Energy Corporation	OGE	Yes	BBB+	Yes	Yes	100%	100%	100%	100%	0%	0%	No
Pinnacle West Capital Corporation	PNW	Yes	A-	Yes	Yes	100%	100%	100%	100%	0%	0%	No
Portland General Electric Company	POR	Yes	BBB+	Yes	Yes	100%	100%	100%	100%	0%	0%	No
Southern Company	SO	Yes	A-	Yes	Yes	90%	87%	81%	82%	19%	18%	No
Wisconsin Energy Corporation	WEC	Yes	A-	Yes	Yes	99%	92%	59%	53%	41%	47%	No
Xcel Energy Inc.	XEL	Yes	A-	Yes	Yes	99%	100%	85%	87%	15%	13%	No

Notes:

[1] Source: Bloomberg Professional

[2] Source: SNL Financial

[3] Source: Yahoo! Finance and Zacks

[4] Source: Yahoo! Finance, Value Line Investment Survey, and Zacks

[5] - [10] Source: Form 10-Ks for 2018, 2019 & 2020, three-year average

[11] SNL Financial News Releases

EXHIBIT JMC-4

CONSTANT GROWTH DCF ANALYSIS

30-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
Alliant Energy Corporation	LNT	\$1.71	\$58.33	2.93%	3.02%	5.50%	6.10%	6.10%	5.90%	8.51%	8.92%	9.12%
Ameren Corporation	AEE	\$2.20	\$86.38	2.55%	2.64%	6.50%	7.90%	7.50%	7.30%	9.13%	9.94%	10.55%
American Electric Power Company, Inc.	AEP	\$3.12	\$88.53	3.52%	3.63%	6.50%	5.70%	5.60%	5.93%	9.22%	9.56%	10.14%
Avista Corporation	AVA	\$1.76	\$43.74	4.02%	4.13%	3.00%	6.20%	6.60%	5.27%	7.08%	9.40%	10.76%
Black Hills Corporation	BKH	\$2.38	\$67.38	3.53%	3.63%	5.00%	4.67%	6.30%	5.32%	8.28%	8.95%	9.94%
CMS Energy Corporation	CMS	\$1.84	\$63.31	2.91%	3.01%	6.00%	6.50%	8.10%	6.87%	8.99%	9.87%	11.12%
Consolidated Edison, Inc.	ED	\$3.16	\$84.03	3.76%	3.81%	3.50%	2.00%	2.00%	2.50%	5.80%	6.31%	7.33%
Duke Energy Corporation	DUK	\$3.94	\$101.88	3.87%	3.99%	7.00%	5.90%	6.00%	6.30%	9.88%	10.29%	11.00%
Edison International	EIX	\$2.80	\$61.52	4.55%	4.66%	NMF	5.80%	3.70%	4.75%	8.34%	9.41%	10.48%
Entergy Corporation	ETR	\$4.04	\$107.95	3.74%	3.80%	3.00%	6.00%	1.00%	3.33%	4.76%	7.14%	9.85%
Evergy, Inc.	EVERG	\$2.29	\$63.44	3.61%	3.73%	8.00%	5.12%	6.10%	6.41%	8.82%	10.13%	11.75%
Eversource Energy	ES	\$2.41	\$85.17	2.83%	2.92%	5.50%	6.50%	6.20%	6.07%	8.41%	8.98%	9.42%
IDACORP, Inc.	IDA	\$3.00	\$106.50	2.82%	2.88%	4.00%	4.40%	4.30%	4.23%	6.87%	7.11%	7.28%
NorthWestern Corporation	NWE	\$2.48	\$58.28	4.26%	4.32%	2.00%	4.50%	3.10%	3.20%	6.30%	7.52%	8.85%
OGE Energy Corporation	OGE	\$1.64	\$37.11	4.42%	4.49%	4.00%	1.90%	3.50%	3.13%	6.36%	7.62%	8.51%
Pinnacle West Capital Corporation	PNW	\$3.40	\$69.88	4.87%	4.87%	Nil	0.10%	n/a	0.10%	4.97%	4.97%	4.97%
Portland General Electric Company	POR	\$1.72	\$51.51	3.34%	3.47%	7.00%	12.60%	4.60%	8.07%	8.02%	11.54%	16.15%
Southern Company	SO	\$2.64	\$66.80	3.95%	4.06%	5.50%	6.70%	4.00%	5.40%	8.03%	9.46%	10.78%
Wisconsin Energy Corporation	WEC	\$2.91	\$93.28	3.12%	3.22%	6.50%	6.10%	6.00%	6.20%	9.21%	9.42%	9.72%
Xcel Energy Inc.	XEL	\$1.83	\$67.71	2.70%	2.79%	6.00%	6.90%	6.40%	6.43%	8.78%	9.22%	9.70%
PROXY GROUP MEAN				3.56%	3.65%	5.25%	5.58%	5.11%	5.14%	7.79%	8.79%	9.87%

Notes

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 30-day average as of February 28, 2022

[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]))

90-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
Alliant Energy Corporation	LNT	\$1.71	\$58.17	2.94%	3.03%	5.50%	6.10%	6.10%	5.90%	8.52%	8.93%	9.13%
Ameren Corporation	AEE	\$2.20	\$86.13	2.55%	2.65%	6.50%	7.90%	7.50%	7.30%	9.14%	9.95%	10.56%
American Electric Power Company, Inc.	AEP	\$3.12	\$86.45	3.61%	3.72%	6.50%	5.70%	5.60%	5.93%	9.31%	9.65%	10.23%
Avista Corporation	AVA	\$1.76	\$41.69	4.22%	4.33%	3.00%	6.20%	6.60%	5.27%	7.29%	9.60%	10.96%
Black Hills Corporation	BKH	\$2.38	\$67.27	3.54%	3.63%	5.00%	4.67%	6.30%	5.32%	8.29%	8.96%	9.95%
CMS Energy Corporation	CMS	\$1.84	\$62.52	2.94%	3.04%	6.00%	6.50%	8.10%	6.87%	9.03%	9.91%	11.16%
Consolidated Edison, Inc.	ED	\$3.16	\$81.65	3.87%	3.92%	3.50%	2.00%	2.00%	2.50%	5.91%	6.42%	7.44%
Duke Energy Corporation	DUK	\$3.94	\$101.92	3.87%	3.99%	7.00%	5.90%	6.00%	6.30%	9.88%	10.29%	11.00%
Edison International	EIX	\$2.80	\$63.96	4.38%	4.48%	NMF	5.80%	3.70%	4.75%	8.16%	9.23%	10.30%
Entergy Corporation	ETR	\$4.04	\$106.97	3.78%	3.84%	3.00%	6.00%	1.00%	3.33%	4.80%	7.17%	9.89%
Evergy, Inc.	EVRG	\$2.29	\$65.04	3.52%	3.63%	8.00%	5.12%	6.10%	6.41%	8.73%	10.04%	11.66%
Eversource Energy	ES	\$2.41	\$86.06	2.80%	2.89%	5.50%	6.50%	6.20%	6.07%	8.38%	8.95%	9.39%
IDACORP, Inc.	IDA	\$3.00	\$107.47	2.79%	2.85%	4.00%	4.40%	4.30%	4.23%	6.85%	7.08%	7.25%
NorthWestern Corporation	NWE	\$2.48	\$57.13	4.34%	4.41%	2.00%	4.50%	3.10%	3.20%	6.38%	7.61%	8.94%
OGE Energy Corporation	OGE	\$1.64	\$36.24	4.53%	4.60%	4.00%	1.90%	3.50%	3.13%	6.47%	7.73%	8.62%
Pinnacle West Capital Corporation	PNW	\$3.40	\$68.10	4.99%	5.00%	Nil	0.10%	n/a	0.10%	5.10%	5.10%	5.10%
Portland General Electric Company	POR	\$1.72	\$50.96	3.38%	3.51%	7.00%	12.60%	4.60%	8.07%	8.05%	11.58%	16.19%
Southern Company	SO	\$2.64	\$65.39	4.04%	4.15%	5.50%	6.70%	4.00%	5.40%	8.12%	9.55%	10.87%
Wisconsin Energy Corporation	WEC	\$2.91	\$92.87	3.13%	3.23%	6.50%	6.10%	6.00%	6.20%	9.23%	9.43%	9.74%
Xcel Energy Inc.	XEL	\$1.83	\$66.56	2.75%	2.84%	6.00%	6.90%	6.40%	6.43%	8.83%	9.27%	9.74%
PROXY GROUP MEAN				3.60%	3.69%	5.25%	5.58%	5.11%	5.14%	7.82%	8.82%	9.91%

Notes

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 90-day average as of February 28, 2022

[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]))

180-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
Alliant Energy Corporation	LNT	\$1.71	\$58.26	2.93%	3.02%	5.50%	6.10%	6.10%	5.90%	8.52%	8.92%	9.12%
Ameren Corporation	AEE	\$2.20	\$85.32	2.58%	2.67%	6.50%	7.90%	7.50%	7.30%	9.16%	9.97%	10.58%
American Electric Power Company, Inc.	AEP	\$3.12	\$86.34	3.61%	3.72%	6.50%	5.70%	5.60%	5.93%	9.31%	9.65%	10.23%
Avista Corporation	AVA	\$1.76	\$41.80	4.21%	4.32%	3.00%	6.20%	6.60%	5.27%	7.27%	9.59%	10.95%
Black Hills Corporation	BKH	\$2.38	\$67.45	3.53%	3.62%	5.00%	4.67%	6.30%	5.32%	8.28%	8.95%	9.94%
CMS Energy Corporation	CMS	\$1.84	\$62.08	2.96%	3.07%	6.00%	6.50%	8.10%	6.87%	9.05%	9.93%	11.18%
Consolidated Edison, Inc.	ED	\$3.16	\$78.11	4.05%	4.10%	3.50%	2.00%	2.00%	2.50%	6.09%	6.60%	7.62%
Duke Energy Corporation	DUK	\$3.94	\$102.28	3.85%	3.97%	7.00%	5.90%	6.00%	6.30%	9.87%	10.27%	10.99%
Edison International	EIX	\$2.80	\$60.56	4.62%	4.73%	NMF	5.80%	3.70%	4.75%	8.41%	9.48%	10.56%
Entergy Corporation	ETR	\$4.04	\$106.44	3.80%	3.86%	3.00%	6.00%	1.00%	3.33%	4.81%	7.19%	9.91%
Evergy, Inc.	EVRG	\$2.29	\$64.88	3.53%	3.64%	8.00%	5.12%	6.10%	6.41%	8.74%	10.05%	11.67%
Eversource Energy	ES	\$2.41	\$85.92	2.80%	2.89%	5.50%	6.50%	6.20%	6.07%	8.38%	8.96%	9.40%
IDACORP, Inc.	IDA	\$3.00	\$105.55	2.84%	2.90%	4.00%	4.40%	4.30%	4.23%	6.90%	7.14%	7.30%
NorthWestern Corporation	NWE	\$2.48	\$59.33	4.18%	4.25%	2.00%	4.50%	3.10%	3.20%	6.22%	7.45%	8.77%
OGE Energy Corporation	OGE	\$1.64	\$35.28	4.65%	4.72%	4.00%	1.90%	3.50%	3.13%	6.59%	7.86%	8.74%
Pinnacle West Capital Corporation	PNW	\$3.40	\$73.24	4.64%	4.64%	Nil	0.10%	n/a	0.10%	4.74%	4.74%	4.74%
Portland General Electric Company	POR	\$1.72	\$49.93	3.44%	3.58%	7.00%	12.60%	4.60%	8.07%	8.12%	11.65%	16.26%
Southern Company	SO	\$2.64	\$64.58	4.09%	4.20%	5.50%	6.70%	4.00%	5.40%	8.17%	9.60%	10.92%
Wisconsin Energy Corporation	WEC	\$2.91	\$92.75	3.14%	3.23%	6.50%	6.10%	6.00%	6.20%	9.23%	9.43%	9.74%
Xcel Energy Inc.	XEL	\$1.83	\$66.77	2.74%	2.83%	6.00%	6.90%	6.40%	6.43%	8.82%	9.26%	9.74%
PROXY GROUP MEAN				3.61%	3.70%	5.25%	5.58%	5.11%	5.14%	7.84%	8.83%	9.92%

Notes

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 180-day average as of February 28, 2022

[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])

EXHIBIT JMC-5.1
MARKET RISK PREMIUM

MARKET RISK PREMIUM DERIVED FROM S&P EARNINGS AND ESTIMATE REPORT

[1] S&P's estimate of the S&P 500 Dividend Yield	1.46%
[2] S&P's estimate of the S&P 500 Growth Rate	15.12%
[3] S&P 500 Estimated Required Market Return	16.69%

Notes:

[1] Source: S&P Dow Jones Indices, S&P 500 Earnings and Estimate Report, February 28, 2022

[2] Source: S&P Dow Jones Indices, S&P 500 Earnings and Estimate Report, February 28, 2022

[3] Equals $([7] \times (1 + (0.5 \times [8]))) + [8]$

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED BLOOMBERG GROWTH RATES

[4] Cap. Weighted Estimate of the S&P 500 Dividend Yield	1.44%
[5] Cap. Weighted Estimate of the S&P 500 Growth Rate	13.54%
[6] Cap. Weighted S&P 500 Estimated Required Market Return	15.08%

Notes:

[4] Source: Bloomberg Professional, as of February 28, 2022

[5] Source: Bloomberg Professional, as of February 28, 2022

[6] Equals (([4] x (1 + (0.5 x [5]))) + [5])

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED BLOOMBERG GROWTH RATES

Name	Ticker	Shares	Outst'g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Long-Term Growth
LyondellBasell Industries NV	LYB	328.01	97.23	4.65	8.00	31,892.41	0.08%	0.39%	0.68%	
Signature Bank/New York NY	SBNY	62.57	344.89	0.65	12.25	21,579.42	0.06%	0.04%	0.70%	
American Express Co	AXP	759.36	194.54	0.88	28.39	147,724.92	0.39%	0.35%	11.11%	
Verizon Communications Inc	VZ	4197.82	53.67	4.77	2.90	225,297.21	0.60%	2.85%	1.73%	
Broadcom Inc	AVGO	409.61	587.44	2.79	14.17	240,623.06	0.64%	1.78%	9.03%	
Boeing Co/The	BA	583.00	205.34	n/a	80.64	119,713.22	0.32%		25.58%	
Caterpillar Inc	CAT	535.89	187.58	2.37	11.73	100,521.87	0.27%	0.63%	3.13%	
JPMorgan Chase & Co	JPM	2952.81	141.80	2.82	3.23	418,708.32	1.11%	3.13%	3.59%	
Chevron Corp	CVX	1947.55	144.00	3.94	28.85	280,447.63	0.74%	2.93%	21.44%	
Coca-Cola Co/The	KO	4335.47	62.24	2.83	9.69	269,839.84	0.72%	2.02%	6.93%	
AbbVie Inc	ABBV	1768.75	147.77	3.82	-0.71	261,368.78	0.69%	2.64%	-0.49%	
Walt Disney Co/The	DIS	1820.63	148.46	n/a	30.44	270,291.18	0.72%		21.80%	
FleetCor Technologies Inc	FLT	81.20	234.20	n/a	16.01	19,016.81	0.05%		0.81%	
Extra Space Storage Inc	EXR	134.15	188.15	3.19	11.62	25,240.89	0.07%	0.21%	0.78%	
Exxon Mobil Corp	XOM	4233.59	78.42	4.49	26.88	331,998.28	0.88%	3.95%	23.65%	
Phillips 66	PSX	438.46	84.24	4.37	7.28	36,936.04	0.10%	0.43%	0.71%	
General Electric Co	GE	1099.32	95.51	0.34	8.50	104,996.24	0.28%	0.09%	2.36%	
HP Inc	HPQ	1053.37	34.36	2.91	2.34	36,193.66	0.10%	0.28%	0.22%	
Home Depot Inc/The	HD	1044.24	315.83	2.41	7.32	329,802.00	0.87%	2.10%	6.40%	
Monolithic Power Systems Inc	MPWR	46.51	458.70	0.65	24.50	21,333.68	0.06%	0.04%	1.38%	
International Business Machines Corp	IBM	899.31	122.51	5.35	13.42	110,174.47	0.29%	1.56%	3.92%	
Johnson & Johnson	JNJ	2629.27	164.57	2.58	7.33	432,698.63	1.15%	2.95%	8.41%	
McDonald's Corp	MCD	743.59	244.77	2.26	8.81	182,007.30	0.48%	1.09%	4.25%	
Merck & Co Inc	MRK	2527.73	76.58	3.60	9.63	193,573.87	0.51%	1.85%	4.94%	
3M Co	MMM	571.10	148.65	4.01	7.67	84,894.02	0.22%	0.90%	1.72%	
American Water Works Co Inc	AWK	181.73	151.09	1.60	7.69	27,456.83	0.07%	0.12%	0.56%	
Bank of America Corp	BAC	8069.80	44.20	1.90	3.50	356,685.20	0.95%	1.80%	3.31%	
Pfizer Inc	PFE	5623.35	46.94	3.41	3.41	263,959.86	0.70%	2.38%	2.38%	
Procter & Gamble Co/The	PG	2397.07	155.89	2.23	5.99	373,678.62	0.99%	2.21%	5.93%	
AT&T Inc	T	7142.89	23.69	8.78	3.86	169,215.14	0.45%	3.94%	1.73%	
Travelers Cos Inc/The	TRV	241.50	171.83	2.05	3.97	41,497.12	0.11%	0.23%	0.44%	
Raytheon Technologies Corp	RTX	1492.33	102.70	1.99	13.46	153,262.39	0.41%	0.81%	5.47%	
Analog Devices Inc	ADI	523.32	160.29	1.90	11.18	83,882.16	0.22%	0.42%	2.48%	
Walmart Inc	WMT	2773.88	135.16	1.66	9.85	374,917.35	0.99%	1.65%	9.79%	
Cisco Systems Inc/Delaware	CSCO	4154.17	55.77	2.73	5.20	231,677.95	0.61%	1.67%	3.19%	
Intel Corp	INTC	4072.00	47.70	3.06	6.10	194,234.40	0.51%	1.58%	3.14%	
General Motors Co	GM	1453.02	46.72	n/a	9.96	67,885.14	0.18%		1.79%	
Microsoft Corp	MSFT	7496.87	298.79	0.83	12.78	2,239,988.59	5.94%	4.93%	75.86%	
Dollar General Corp	DG	231.71	198.34	0.85	9.82	45,956.77	0.12%	0.10%	1.20%	
Cigna Corp	CI	320.95	237.78	1.88	9.19	76,316.20	0.20%	0.38%	1.86%	
Kinder Morgan Inc	KMI	2267.49	17.40	6.21	5.15	39,454.24	0.10%	0.65%	0.54%	
Citigroup Inc	C	1980.90	59.23	3.44	9.23	117,328.41	0.31%	1.07%	2.87%	
American International Group Inc	AIG	814.76	61.24	2.09	21.00	49,895.78	0.13%	0.28%	2.78%	
Altria Group Inc	MO	1817.26	51.29	7.02	3.60	93,207.11	0.25%	1.73%	0.89%	
HCA Healthcare Inc	HCA	303.60	250.31	0.89	12.65	75,994.12	0.20%	0.18%	2.55%	
Under Armour Inc	UA	188.67	17.89	n/a	25.00	3,375.29	0.01%		0.22%	
International Paper Co	IP	376.36	43.53	4.25	16.90	16,383.12	0.04%	0.18%	0.73%	
Hewlett Packard Enterprise Co	HPE	1300.27	15.92	3.02	4.28	20,700.31	0.05%	0.17%	0.23%	
Abbott Laboratories	ABT	1763.48	120.62	1.56	11.67	212,711.20	0.56%	0.88%	6.58%	
Aflac Inc	AFL	649.86	61.09	2.62	n/a	0.00	0.00%	0.00%		
Air Products and Chemicals Inc	APD	221.72	236.30	2.74	13.78	52,391.73	0.14%	0.38%	1.91%	
Royal Caribbean Cruises Ltd	RCL	254.82	80.72	n/a	-188.41	20,569.07	0.05%		-10.27%	
Hess Corp	HES	309.73	101.06	0.99	47.10	31,301.01	0.08%	0.08%	3.91%	
Archer-Daniels-Midland Co	ADM	562.17	78.45	2.04	1.24	44,102.00	0.12%	0.24%	0.14%	
Automatic Data Processing Inc	ADP	420.05	204.44	2.03	13.45	85,874.00	0.23%	0.46%	3.06%	
Verisk Analytics Inc	VRSK	161.28	177.34	0.70	n/a	0.00	0.00%	0.00%		
AutoZone Inc	AZO	20.63	1863.39	n/a	10.57	38,449.19	0.10%		1.08%	
Avery Dennison Corp	AVY	82.46	176.20	1.54	7.60	14,529.63	0.04%	0.06%	0.29%	
Enphase Energy Inc	ENPH	133.94	166.70	n/a	36.20	22,327.13	0.06%		2.14%	
MSCI Inc	MSCI	81.27	501.69	0.83	13.30	40,771.34	0.11%	0.09%	1.44%	
Ball Corp	BLL	321.50	89.74	0.89	7.70	28,851.05	0.08%	0.07%	0.59%	
Ceridian HCM Holding Inc	CDAY	152.05	72.91	n/a	58.30	11,085.97	0.03%		1.71%	
Carrier Global Corp	CARR	855.51	44.88	1.34	8.95	38,395.47	0.10%	0.14%	0.91%	

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED BLOOMBERG GROWTH RATES

Name	Ticker	Shares Out/g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Bank of New York Mellon Corp/The	BK	804.50	53.15	2.56	9.50	42,758.91	0.11%	0.29%	1.08%
Otis Worldwide Corp	OTIS	424.96	78.33	1.23	9.63	33,287.27	0.09%	0.11%	0.85%
Baxter International Inc	BAX	502.29	84.97	1.32	13.05	42,679.92	0.11%	0.15%	1.48%
Becton Dickinson and Co	BDX	284.77	271.28	1.28	10.45	77,252.68	0.20%	0.26%	2.14%
Berkshire Hathaway Inc	BRK/B	1291.21	321.45	n/a	2.30	415,060.42	1.10%		2.53%
Best Buy Co Inc	BBY	240.56	96.64	2.90	7.07	23,247.82	0.06%	0.18%	0.44%
Boston Scientific Corp	BSX	1426.73	44.17	n/a	18.63	63,018.44	0.17%		3.11%
Bristol-Myers Squibb Co	BMJ	2179.71	68.67	3.15	6.98	149,680.89	0.40%	1.25%	2.77%
Fortune Brands Home & Security Inc	FBHS	134.17	86.90	1.29	8.96	11,659.72	0.03%	0.04%	0.28%
Brown-Forman Corp	BF/B	309.74	65.23	1.16	7.68	20,204.54	0.05%	0.06%	0.41%
Coterra Energy Inc	CTRA	813.58	23.33	9.60	16.78	18,980.77	0.05%	0.48%	0.84%
Campbell Soup Co	CPB	301.74	44.97	3.29	2.31	13,569.16	0.04%	0.12%	0.08%
Hilton Worldwide Holdings Inc	HLT	279.14	148.86	n/a	37.88	41,552.63	0.11%		4.17%
Carnival Corp	CCL	986.36	20.33	n/a	n/a	0.00	0.00%		
Qorvo Inc	QRVO	108.43	136.78	n/a	11.82	14,831.33	0.04%		0.46%
Lumen Technologies Inc	LUMN	1023.37	10.36	9.65	-10.47	10,602.13	0.03%	0.27%	-0.29%
UDR Inc	UDR	318.27	54.87	2.64	5.32	17,463.20	0.05%	0.12%	0.25%
Clorox Co/The	CLX	123.06	145.79	3.18	-0.45	17,940.63	0.05%	0.15%	-0.02%
Paycom Software Inc	PAYC	60.21	339.21	n/a	25.40	20,425.19	0.05%		1.37%
CMS Energy Corp	CMS	289.76	64.01	2.87	7.03	18,547.54	0.05%	0.14%	0.35%
Newell Brands Inc	NWL	425.50	23.75	3.87	7.00	10,105.63	0.03%	0.10%	0.19%
Colgate-Palmolive Co	CL	840.49	76.95	2.34	8.73	64,675.47	0.17%	0.40%	1.50%
EPAM Systems Inc	EPAM	56.88	207.75	n/a	25.70	11,816.61	0.03%		0.80%
Comerica Inc	CMA	131.08	95.49	2.85	11.22	12,516.73	0.03%	0.09%	0.37%
IPG Photonics Corp	IPGP	52.94	130.35	n/a	12.40	6,900.60	0.02%		0.23%
Conagra Brands Inc	CAG	479.70	34.97	3.57	6.45	16,775.04	0.04%	0.16%	0.29%
Consolidated Edison Inc	ED	354.09	85.77	3.68	3.85	30,370.30	0.08%	0.30%	0.31%
Corning Inc	GLW	845.85	40.40	2.67	11.45	34,172.30	0.09%	0.24%	1.04%
Cummins Inc	CMI	142.43	204.12	2.84	8.54	29,072.20	0.08%	0.22%	0.66%
Caesars Entertainment Inc	CZR	214.12	84.19	n/a	-39.81	18,027.02	0.05%		-1.90%
Danaher Corp	DHR	715.35	274.41	0.36	21.85	196,300.02	0.52%	0.19%	11.37%
Target Corp	TGT	479.12	199.77	1.80	20.57	95,714.60	0.25%	0.46%	5.22%
Deere & Co	DE	306.78	360.02	1.17	14.68	110,448.38	0.29%	0.34%	4.30%
Dominion Energy Inc	D	810.46	79.53	3.36	6.87	64,456.12	0.17%	0.57%	1.17%
Dover Corp	DOV	144.06	156.86	1.28	14.60	22,596.47	0.06%	0.08%	0.87%
Alliant Energy Corp	LNT	250.48	58.40	2.93	5.97	14,627.97	0.04%	0.11%	0.23%
Duke Energy Corp	DUK	769.00	100.41	3.92	5.17	77,215.29	0.20%	0.80%	1.06%
Regency Centers Corp	REG	171.37	65.89	3.79	13.86	11,291.77	0.03%	0.11%	0.41%
Eaton Corp PLC	ETN	398.80	154.29	2.10	12.23	61,530.85	0.16%	0.34%	1.99%
Ecolab Inc	ECL	286.75	176.26	1.16	14.50	50,542.91	0.13%	0.16%	1.94%
PerkinElmer Inc	PKI	126.20	179.61	0.16	1.60	22,666.78	0.06%	0.01%	0.10%
Emerson Electric Co	EMR	594.00	92.92	2.22	11.17	55,194.48	0.15%	0.32%	1.63%
EOG Resources Inc	EOG	585.42	114.92	2.61	9.74	67,276.35	0.18%	0.47%	1.74%
Aon PLC	AON	213.94	292.14	0.70	12.00	62,501.60	0.17%	0.12%	1.99%
Entergy Corp	ETR	203.03	105.21	3.84	4.85	21,360.58	0.06%	0.22%	0.27%
Equifax Inc	EFX	122.09	218.34	0.71	13.45	26,656.04	0.07%	0.05%	0.95%
IQVIA Holdings Inc	IQV	190.91	230.12	n/a	17.56	43,932.67	0.12%		2.04%
Gartner Inc	IT	82.29	280.42	n/a	13.50	23,074.92	0.06%		0.83%
FedEx Corp	FDX	264.97	222.27	1.35	12.20	58,894.66	0.16%	0.21%	1.90%
FMC Corp	FMC	125.70	117.25	1.81	9.23	14,738.21	0.04%	0.07%	0.36%
Brown & Brown Inc	BRO	282.22	67.61	0.61	8.00	19,080.62	0.05%	0.03%	0.40%
Ford Motor Co	F	3933.40	17.56	2.28	-6.94	69,070.42	0.18%	0.42%	-1.27%
NextEra Energy Inc	NEE	1962.75	78.27	2.17	9.45	153,624.05	0.41%	0.88%	3.85%
Franklin Resources Inc	BEN	502.12	29.73	3.90	n/a	0.00	0.00%	0.00%	
Garmin Ltd	GRMN	192.79	110.44	2.64	11.10	21,291.40	0.06%	0.15%	0.63%
Freeport-McMoRan Inc	FCX	1454.78	46.95	0.64	-14.26	68,301.97	0.18%	0.12%	-2.58%
Dexcom Inc	DXCM	97.07	413.91	n/a	15.45	40,176.59	0.11%		1.64%
General Dynamics Corp	GD	277.70	234.45	2.03	10.29	65,106.30	0.17%	0.35%	1.77%
General Mills Inc	GIS	603.21	67.43	3.03	6.50	40,674.25	0.11%	0.33%	0.70%
Genuine Parts Co	GPC	141.96	122.16	2.93	16.20	17,342.20	0.05%	0.13%	0.74%
Atmos Energy Corp	ATO	135.43	109.81	2.48	7.39	14,871.79	0.04%	0.10%	0.29%
WW Grainger Inc	GWV	51.11	477.06	1.36	12.27	24,381.58	0.06%	0.09%	0.79%
Halliburton Co	HAL	898.57	33.53	1.43	44.87	30,129.12	0.08%	0.11%	3.58%
L3Harris Technologies Inc	LHX	193.07	252.31	1.78	4.39	48,712.48	0.13%	0.23%	0.57%
Healthpeak Properties Inc	PEAK	539.30	31.06	3.86	12.16	16,750.78	0.04%	0.17%	0.54%
Catalent Inc	CTLT	179.13	102.04	n/a	17.25	18,278.22	0.05%		0.84%
Fortive Corp	FTV	359.10	64.75	0.43	10.63	23,251.73	0.06%	0.03%	0.66%
Hershey Co/The	HSY	145.63	202.26	1.78	7.75	29,454.72	0.08%	0.14%	0.60%
Synchrony Financial	SYF	521.27	42.78	2.06	36.95	22,300.02	0.06%	0.12%	2.18%
Hormel Foods Corp	HRL	542.57	47.64	2.18	6.71	25,848.03	0.07%	0.15%	0.46%
Arthur J Gallagher & Co	AJG	208.54	158.19	1.29	14.81	32,989.26	0.09%	0.11%	1.29%
Mondelez International Inc	MDLZ	1388.33	65.48	2.14	7.58	90,907.72	0.24%	0.52%	1.83%
CenterPoint Energy Inc	CNP	628.87	27.35	2.49	3.53	17,199.49	0.05%	0.11%	0.16%
Humana Inc	HUM	126.63	434.32	0.73	12.70	54,998.68	0.15%	0.11%	1.85%
Willis Towers Watson PLC	WTW	117.75	222.30	1.48	16.00	26,174.94	0.07%	0.10%	1.11%
Illinois Tool Works Inc	ITW	312.93	216.34	2.26	11.60	67,698.63	0.18%	0.40%	2.08%
CDW Corp/DE	CDW	134.94	172.46	1.16	13.10	23,272.44	0.06%	0.07%	0.81%
Trane Technologies PLC	TT	233.54	153.93	1.74	11.84	35,948.50	0.10%	0.17%	1.13%
Interpublic Group of Cos Inc/The	IPG	393.96	36.80	3.15	3.07	14,497.73	0.04%	0.12%	0.12%
International Flavors & Fragrances Inc	IFF	254.69	133.00	2.38	6.62	33,873.11	0.09%	0.21%	0.59%
Jacobs Engineering Group Inc	J	129.22	123.00	0.75	13.56	15,893.69	0.04%	0.03%	0.57%
Generac Holdings Inc	GNRC	63.78	315.47	n/a	11.10	20,121.94	0.05%		0.59%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED BLOOMBERG GROWTH RATES

Name	Ticker	Shares Out/g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
NXP Semiconductors NV	NXPI	262.54	190.12	1.78	18.60	49,913.72	0.13%	0.24%	2.46%
Kellogg Co	K	341.68	63.94	3.63	4.05	21,846.70	0.06%	0.21%	0.23%
Broadridge Financial Solutions Inc	BR	116.77	146.21	1.75	12.20	17,073.38	0.05%	0.08%	0.55%
Kimberly-Clark Corp	KMB	336.99	130.15	3.57	-1.35	43,859.64	0.12%	0.41%	-0.16%
Kimco Realty Corp	KIM	616.66	23.53	3.23	8.91	14,509.99	0.04%	0.12%	0.34%
Oracle Corp	ORCL	2670.45	75.97	1.68	7.57	202,873.86	0.54%	0.91%	4.07%
Kroger Co/The	KR	735.26	46.80	1.79	8.26	34,409.98	0.09%	0.16%	0.75%
Lennar Corp	LEN	261.37	89.88	1.67	4.55	23,492.30	0.06%	0.10%	0.28%
Eli Lilly & Co	LLY	952.35	249.95	1.57	14.41	238,039.13	0.63%	0.99%	9.09%
Bath & Body Works Inc	BBWI	257.72	53.37	1.50	9.26	13,754.68	0.04%	0.05%	0.34%
Charter Communications Inc	CHTR	172.74	601.78	n/a	25.32	103,952.08	0.28%		6.97%
Lincoln National Corp	LNC	172.46	67.42	2.67	20.79	11,626.92	0.03%	0.08%	0.64%
Loews Corp	L	248.20	61.34	0.41	n/a	0.00	0.00%	0.00%	
Lowe's Cos Inc	LOW	670.00	221.06	1.45	18.83	148,110.20	0.39%	0.57%	7.39%
IDEX Corp	IEX	76.12	191.90	1.13	13.00	14,607.43	0.04%	0.04%	0.50%
Marsh & McLennan Cos Inc	MMC	502.77	155.41	1.38	7.81	78,134.86	0.21%	0.29%	1.62%
Masco Corp	MAS	239.93	56.04	2.00	12.42	13,445.45	0.04%	0.07%	0.44%
S&P Global Inc	SPGI	354.36	375.70	0.90	8.60	133,132.68	0.35%	0.32%	3.03%
Medtronic PLC	MDT	1342.57	104.99	2.40	7.50	140,956.00	0.37%	0.90%	2.80%
Viatis Inc	VTRS	1209.39	11.01	4.36	n/a	0.00	0.00%	0.00%	
CVS Health Corp	CVS	1312.51	103.65	2.12	7.20	136,041.66	0.36%	0.77%	2.60%
DuPont de Nemours Inc	DD	512.91	77.37	1.71	10.43	39,683.61	0.11%	0.18%	1.10%
Micron Technology Inc	MU	1119.78	88.86	0.45	17.17	99,503.38	0.26%	0.12%	4.53%
Motorola Solutions Inc	MSI	168.21	220.43	1.43	11.20	37,078.31	0.10%	0.14%	1.10%
Cboe Global Markets Inc	CBOE	106.60	117.29	1.64	n/a	0.00	0.00%	0.00%	
Laboratory Corp of America Holdings	LH	93.40	271.26	n/a	-6.59	25,335.68	0.07%		-0.44%
Newmont Corp	NEM	792.50	66.20	3.32	-3.00	52,463.63	0.14%	0.46%	-0.42%
NIKE Inc	NKE	1276.29	136.55	0.89	14.74	174,277.13	0.46%	0.41%	6.81%
NiSource Inc	NI	405.39	28.93	3.25	6.69	11,727.79	0.03%	0.10%	0.21%
Norfolk Southern Corp	NSC	239.78	256.52	1.93	11.31	61,507.60	0.16%	0.32%	1.84%
Principal Financial Group Inc	PFJ	261.23	70.64	3.62	8.30	18,453.15	0.05%	0.18%	0.41%
Eversource Energy	ES	344.44	81.80	3.12	7.66	28,175.19	0.07%	0.23%	0.57%
Northrop Grumman Corp	NOC	156.10	442.14	1.42	0.30	69,018.94	0.18%	0.26%	0.05%
Wells Fargo & Co	WFC	3814.56	53.37	1.87	8.01	203,582.91	0.54%	1.01%	4.32%
Nucor Corp	NUE	269.13	131.62	1.52	n/a	0.00	0.00%	0.00%	
PVH Corp	PVH	69.98	97.89	0.15	56.81	6,850.15	0.02%	0.00%	1.03%
Occidental Petroleum Corp	OXY	934.06	43.73	1.19	n/a	0.00	0.00%	0.00%	
Omnicom Group Inc	OMC	208.99	83.89	3.34	8.77	17,532.34	0.05%	0.16%	0.41%
ONEOK Inc	OKE	445.94	65.30	5.73	n/a	0.00	0.00%	0.00%	
Raymond James Financial Inc	RJF	207.60	109.65	1.24	10.90	22,763.56	0.06%	0.07%	0.66%
Parker-Hannifin Corp	PH	128.48	296.39	1.39	13.15	38,079.59	0.10%	0.14%	1.33%
Rollins Inc	ROL	492.09	32.63	1.23	11.10	16,056.77	0.04%	0.05%	0.47%
PPL Corp	PPL	735.36	26.17	3.06	5.20	19,244.42	0.05%	0.16%	0.27%
ConocoPhillips	COP	1299.53	94.86	1.94	n/a	0.00	0.00%	0.00%	
PulteGroup Inc	PHM	248.65	49.66	1.21	24.62	12,348.01	0.03%	0.04%	0.81%
Pinnacle West Capital Corp	PNW	112.93	70.83	4.80	-3.77	7,998.97	0.02%	0.10%	-0.08%
PNC Financial Services Group Inc/The	PNC	418.46	199.25	2.51	21.40	83,377.16	0.22%	0.55%	4.73%
PPG Industries Inc	PPG	236.00	133.45	1.77	12.66	31,494.07	0.08%	0.15%	1.06%
Progressive Corp/The	PGR	584.85	105.93	0.38	32.79	61,953.05	0.16%	0.06%	5.38%
Public Service Enterprise Group Inc	PEG	502.08	64.83	3.33	3.28	32,549.72	0.09%	0.29%	0.28%
Robert Half International Inc	RHI	110.69	120.29	1.43	-6.90	13,314.42	0.04%	0.05%	-0.24%
Edison International	EIX	380.70	63.42	4.42	3.05	24,143.80	0.06%	0.28%	0.20%
Schlumberger NV	SLB	1413.02	39.24	1.27	43.92	55,446.87	0.15%	0.19%	6.45%
Charles Schwab Corp/The	SCHW	1814.62	84.46	0.95	21.75	153,262.89	0.41%	0.38%	8.83%
Sherwin-Williams Co/The	SHW	260.37	263.13	0.91	10.11	68,512.21	0.18%	0.17%	1.83%
West Pharmaceutical Services Inc	WST	74.28	387.08	0.19	8.57	28,753.08	0.08%	0.01%	0.65%
J M Smucker Co/The	SJM	108.36	134.75	2.94	1.49	14,601.91	0.04%	0.11%	0.06%
Snap-on Inc	SNA	53.44	210.18	2.70	6.89	11,231.81	0.03%	0.08%	0.21%
AMETEK Inc	AME	231.70	129.79	0.68	11.67	30,072.47	0.08%	0.05%	0.93%
Southern Co/The	SO	1059.80	64.77	4.08	5.03	68,643.51	0.18%	0.74%	0.91%
Truist Financial Corp	TFC	1328.12	62.22	3.09	9.07	82,635.63	0.22%	0.68%	1.99%
Southwest Airlines Co	LUV	592.34	43.80	n/a	29.70	25,944.58	0.07%		2.04%
W R Berkley Corp	WRB	176.79	90.30	0.58	13.67	15,964.23	0.04%	0.02%	0.58%
Stanley Black & Decker Inc	SWK	163.35	162.70	1.94	8.53	26,577.37	0.07%	0.14%	0.60%
Public Storage	PSA	175.46	355.02	2.25	12.89	62,292.52	0.17%	0.37%	2.13%
Arista Networks Inc	ANET	307.77	122.73	n/a	17.19	37,772.24	0.10%		1.72%
Sysco Corp	SYU	507.45	87.10	2.16	13.95	44,198.63	0.12%	0.25%	1.63%
Corteva Inc	CTVA	726.53	52.03	1.08	11.10	37,801.20	0.10%	0.11%	1.11%
Texas Instruments Inc	TXN	923.55	169.99	2.71	8.30	156,993.75	0.42%	1.13%	3.45%
Textron Inc	TXT	216.68	73.13	0.11	13.88	15,845.95	0.04%	0.00%	0.58%
Thermo Fisher Scientific Inc	TMO	391.19	544.00	0.22	10.28	212,808.45	0.56%	0.12%	5.79%
TJX Cos Inc/The	TJX	1192.88	66.10	1.79	69.15	78,849.24	0.21%	0.37%	14.45%
Globe Life Inc	GL	99.34	100.96	0.78	n/a	0.00	0.00%	0.00%	
Johnson Controls International plc	JCI	702.63	64.96	2.09	14.30	45,642.65	0.12%	0.25%	1.73%
Ulta Beauty Inc	ULTA	54.12	374.50	n/a	45.46	20,267.94	0.05%		2.44%
Union Pacific Corp	UNP	636.90	245.95	1.92	9.33	156,645.31	0.42%	0.80%	3.87%
Keysight Technologies Inc	KEYS	180.80	157.37	n/a	10.31	28,452.50	0.08%		0.78%
UnitedHealth Group Inc	UNH	940.90	475.87	1.22	12.19	447,745.61	1.19%	1.45%	14.46%
Marathon Oil Corp	MRO	730.77	22.56	1.24	-1.68	16,486.06	0.04%	0.05%	-0.07%
Bio-Rad Laboratories Inc	BIO	24.86	625.96	n/a	13.90	15,561.99	0.04%		0.57%
Ventas Inc	VTR	399.50	54.00	3.33	13.82	21,572.78	0.06%	0.19%	0.79%
VF Corp	VFC	388.90	58.02	3.45	29.56	22,564.09	0.06%	0.21%	1.77%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED BLOOMBERG GROWTH RATES

Name	Ticker	Shares Out/g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Vornado Realty Trust	VNO	191.72	43.28	4.90	-15.89	8,297.81	0.02%	0.11%	-0.35%
Vulcan Materials Co	VMC	132.79	181.45	0.88	24.14	24,095.11	0.06%	0.06%	1.54%
Weyerhaeuser Co	WY	746.33	38.88	1.85	n/a	0.00	0.00%	0.00%	
Whirlpool Corp	WHR	58.61	201.27	3.48	6.16	11,796.64	0.03%	0.11%	0.19%
Williams Cos Inc/The	WMB	1215.59	31.28	5.43	6.00	38,023.75	0.10%	0.55%	0.60%
Constellation Energy Corp	CEG	326.00	45.98	1.23	n/a	0.00	0.00%	0.00%	
WEC Energy Group Inc	WEC	315.44	90.88	3.20	6.62	28,666.73	0.08%	0.24%	0.50%
Adobe Inc	ADBE	471.70	467.68	n/a	16.45	220,604.66	0.58%		9.62%
AES Corp/The	AES	667.40	21.23	2.98	8.00	14,168.80	0.04%	0.11%	0.30%
Amgen Inc	AMGN	557.03	226.48	3.43	7.40	128,155.93	0.33%	1.15%	2.47%
Apple Inc	AAPL	16319.44	165.12	0.53	9.40	2,694,666.10	7.14%	3.81%	67.12%
Autodesk Inc	ADSK	219.97	220.23	n/a	16.90	48,444.65	0.13%		2.17%
Cintas Corp	CTAS	103.73	375.32	1.01	6.00	38,933.07	0.10%	0.10%	0.62%
Comcast Corp	CMCSA	4523.79	46.76	2.31	10.68	211,532.23	0.56%	1.29%	5.98%
Molson Coors Beverage Co	TAP	200.60	52.18	2.91	5.98	10,467.26	0.03%	0.08%	0.17%
KLA Corp	KLAC	150.72	348.50	1.21	14.54	52,524.18	0.14%	0.17%	2.02%
Marriott International Inc/MD	MAR	326.31	170.14	n/a	40.03	55,518.55	0.15%		5.89%
McCormick & Co Inc/MD	MKC	249.74	95.17	1.56	5.05	23,768.04	0.06%	0.10%	0.32%
PACCAR Inc	PCAR	347.57	91.81	1.48	10.90	31,910.59	0.08%	0.13%	0.92%
Costco Wholesale Corp	COST	443.43	519.25	0.61	10.71	230,252.07	0.61%	0.37%	6.53%
First Republic Bank/CA	FRC	179.06	173.26	0.51	12.39	31,023.94	0.08%	0.04%	1.02%
Stryker Corp	SYK	377.55	263.35	1.06	12.07	99,426.48	0.26%	0.28%	3.18%
Tyson Foods Inc	TSN	292.46	92.66	1.99	0.78	27,098.88	0.07%	0.14%	0.06%
Lamb Weston Holdings Inc	LW	145.20	66.43	1.48	13.26	9,645.90	0.03%	0.04%	0.34%
Applied Materials Inc	AMAT	883.40	134.20	0.72	12.18	118,551.61	0.31%	0.22%	3.82%
American Airlines Group Inc	AAL	649.16	17.25	n/a	n/a	0.00	0.00%		
Cardinal Health Inc	CAH	277.06	54.01	3.63	4.34	14,964.06	0.04%	0.14%	0.17%
Cerner Corp	CERN	293.34	93.25	1.16	11.00	27,354.33	0.07%	0.08%	0.80%
Cincinnati Financial Corp	CINF	160.43	122.79	2.25	n/a	0.00	0.00%	0.00%	
Paramount Global	PARA	607.88	30.61	3.14	1.85	18,607.11	0.05%	0.15%	0.09%
DR Horton Inc	DHI	354.36	85.40	1.05	18.07	30,262.17	0.08%	0.08%	1.45%
Electronic Arts Inc	EA	281.22	130.09	0.52	9.30	36,584.17	0.10%	0.05%	0.90%
Expeditors International of Washington Inc	EXPD	169.40	103.36	1.12	-7.65	17,509.60	0.05%	0.05%	-0.35%
Fastenal Co	FAST	575.55	51.46	2.41	9.30	29,618.01	0.08%	0.19%	0.73%
M&T Bank Corp	MTB	129.03	182.23	2.63	7.54	23,513.87	0.06%	0.16%	0.47%
Xcel Energy Inc	XEL	544.21	67.33	2.90	6.90	36,641.93	0.10%	0.28%	0.67%
Fiserv Inc	FISV	652.20	97.67	n/a	16.40	63,700.08	0.17%		2.77%
Fifth Third Bancorp	FITB	683.67	47.84	2.51	2.20	32,706.82	0.09%	0.22%	0.19%
Gilead Sciences Inc	GILD	1253.89	60.40	4.83	8.67	75,734.77	0.20%	0.97%	1.74%
Hasbro Inc	HAS	138.96	97.05	2.89	5.60	13,486.07	0.04%	0.10%	0.20%
Huntington Bancshares Inc/OH	HBAN	1438.09	15.52	3.99	17.65	22,319.13	0.06%	0.24%	1.04%
Welltower Inc	WELL	447.28	83.29	2.93	19.74	37,253.95	0.10%	0.29%	1.95%
Biogen Inc	BIIB	146.96	211.01	n/a	-5.95	31,010.66	0.08%		-0.49%
Northern Trust Corp	NTRS	207.90	113.90	2.46	13.60	23,679.58	0.06%	0.15%	0.85%
Packaging Corp of America	PKG	93.53	147.19	2.72	3.00	13,767.27	0.04%	0.10%	0.11%
Paychex Inc	PAYX	360.76	119.06	2.22	9.00	42,951.73	0.11%	0.25%	1.02%
People's United Financial Inc	PBCT	427.92	21.08	3.46	n/a	0.00	0.00%	0.00%	
QUALCOMM Inc	QCOM	1127.00	171.99	1.58	15.57	193,832.73	0.51%	0.81%	8.00%
Roper Technologies Inc	ROP	105.60	448.22	0.55	11.93	47,333.38	0.13%	0.07%	1.50%
Ross Stores Inc	ROST	353.33	91.39	1.25	53.80	32,290.83	0.09%	0.11%	4.60%
IDEXX Laboratories Inc	IDXX	84.25	532.35	n/a	10.92	44,849.96	0.12%		1.30%
Starbucks Corp	SBUX	1150.30	91.79	2.14	12.48	105,586.04	0.28%	0.60%	3.49%
KeyCorp	KEY	927.76	25.07	3.11	19.12	23,258.97	0.06%	0.19%	1.18%
Fox Corp	FOXA	315.81	41.83	1.15	8.39	13,210.16	0.04%	0.04%	0.29%
Fox Corp	FOX	247.10	38.26	1.25	8.39	9,453.89	0.03%	0.03%	0.21%
State Street Corp	STT	366.07	85.33	2.67	10.20	31,236.50	0.08%	0.22%	0.84%
Norwegian Cruise Line Holdings Ltd	NCLH	416.89	19.49	n/a	153.32	8,125.23	0.02%		3.30%
US Bancorp	USB	1483.90	56.54	3.25	9.31	83,899.82	0.22%	0.72%	2.07%
A O Smith Corp	AOS	131.41	68.58	1.63	10.00	9,012.37	0.02%	0.04%	0.24%
NortonLifeLock Inc	NLOK	582.18	28.98	1.73	9.50	16,871.61	0.04%	0.08%	0.42%
T Rowe Price Group Inc	TROW	228.09	144.56	3.32	3.32	32,973.12	0.09%	0.29%	0.29%
Waste Management Inc	WM	414.59	144.40	1.59	11.37	59,866.36	0.16%	0.25%	1.80%
Constellation Brands Inc	STZ	164.34	215.62	1.41	8.05	35,434.78	0.09%	0.13%	0.76%
DENTSPLY SIRONA Inc	XRAY	218.61	54.14	0.92	10.25	11,835.38	0.03%	0.03%	0.32%
Zions Bancorp NA	ZION	151.57	70.89	2.14	8.93	10,745.08	0.03%	0.06%	0.25%
Alaska Air Group Inc	ALK	125.91	56.14	n/a	n/a	0.00	0.00%		
Invesco Ltd	IVZ	460.75	21.24	3.20	0.20	9,786.35	0.03%	0.08%	0.01%
Linde PLC	LIN	508.33	293.24	1.60	9.73	149,063.28	0.39%	0.63%	3.84%
Intuit Inc	INTU	283.17	474.37	0.57	17.43	134,325.93	0.36%	0.20%	6.21%
Morgan Stanley	MS	1781.30	90.74	3.09	3.33	161,635.07	0.43%	1.32%	1.43%
Microchip Technology Inc	MCHP	555.99	70.33	1.44	17.71	39,102.85	0.10%	0.15%	1.84%
Chubb Ltd	CB	426.23	203.64	1.57	12.87	86,797.27	0.23%	0.36%	2.96%
Hologic Inc	HOLX	249.98	71.17	n/a	-18.45	17,791.36	0.05%		-0.87%
Citizens Financial Group Inc	CFG	422.14	52.42	2.98	0.99	22,128.68	0.06%	0.17%	0.06%
O'Reilly Automotive Inc	ORLY	66.60	649.24	n/a	15.72	43,240.03	0.11%		1.80%
Allstate Corp/The	ALL	278.35	122.36	2.78	3.63	34,058.42	0.09%	0.25%	0.33%
Equity Residential	EQR	375.92	85.30	2.83	10.96	32,065.72	0.08%	0.24%	0.93%
BorgWarner Inc	BWA	239.97	41.01	1.66	29.15	9,841.21	0.03%	0.04%	0.76%
Organon & Co	OGN	253.55	37.33	3.00	-2.99	9,465.02	0.03%	0.08%	-0.07%
Host Hotels & Resorts Inc	HST	714.15	18.27	0.16	n/a	0.00	0.00%	0.00%	
Incyte Corp	INCY	221.33	68.30	n/a	36.00	15,116.50	0.04%		1.44%
Simon Property Group Inc	SPG	342.85	137.56	4.80	8.67	47,162.31	0.12%	0.60%	1.08%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED BLOOMBERG GROWTH RATES

Name	Ticker	Shares Out/g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Eastman Chemical Co	EMN	128.97	118.47	2.57	13.76	15,278.84	0.04%	0.10%	0.56%
Twitter Inc	TWTR	800.64	35.55	n/a	39.00	28,462.79	0.08%		2.94%
AvalonBay Communities Inc	AVB	139.75	238.59	2.67	8.02	33,343.43	0.09%	0.24%	0.71%
Prudential Financial Inc	PRU	376.30	111.66	4.30	2.40	42,017.66	0.11%	0.48%	0.27%
United Parcel Service Inc	UPS	732.55	210.42	2.89	8.90	154,144.01	0.41%	1.18%	3.63%
Walgreens Boots Alliance Inc	WBA	863.27	46.09	4.14	0.74	39,788.21	0.11%	0.44%	0.08%
STERIS PLC	STE	100.13	240.00	0.72	10.80	24,030.48	0.06%	0.05%	0.69%
McKesson Corp	MCK	149.80	274.96	0.68	11.66	41,188.46	0.11%	0.07%	1.27%
Lockheed Martin Corp	LMT	272.33	433.80	2.58	4.12	118,135.45	0.31%	0.81%	1.29%
AmerisourceBergen Corp	ABC	209.14	142.53	1.29	8.25	29,808.30	0.08%	0.10%	0.65%
Capital One Financial Corp	COF	413.66	153.27	1.57	41.05	63,401.82	0.17%	0.26%	6.90%
Waters Corp	WAT	60.52	316.73	n/a	10.35	19,167.23	0.05%		0.53%
Nordson Corp	NDSN	57.94	226.49	0.90	11.93	13,123.06	0.03%	0.03%	0.41%
Dollar Tree Inc	DLTR	224.96	142.08	n/a	11.55	31,961.75	0.08%		0.98%
Darden Restaurants Inc	DRI	127.72	145.22	3.03	12.85	18,548.08	0.05%	0.15%	0.63%
Match Group Inc	MTCH	285.15	111.49	n/a	48.47	31,791.15	0.08%		4.08%
Domino's Pizza Inc	DPZ	36.39	432.21	0.87	n/a	0.00	0.00%	0.00%	
NVR Inc	NVR	3.38	4958.44	n/a	26.00	16,774.40	0.04%		1.16%
NetApp Inc	NTAP	222.28	78.38	2.55	11.16	17,422.15	0.05%	0.12%	0.52%
Citrix Systems Inc	CTXS	125.55	102.50	1.44	10.20	12,868.77	0.03%	0.05%	0.35%
DXC Technology Co	DXC	244.48	34.03	n/a	27.18	8,319.59	0.02%		0.60%
Old Dominion Freight Line Inc	ODFL	114.86	314.03	0.38	17.72	36,070.74	0.10%	0.04%	1.69%
DaVita Inc	DVA	96.30	112.77	n/a	10.56	10,859.75	0.03%		0.30%
Hartford Financial Services Group Inc/The	HIG	331.65	69.48	2.22	7.00	23,042.83	0.06%	0.14%	0.43%
Iron Mountain Inc	IRM	289.83	49.18	5.03	4.00	14,253.84	0.04%	0.19%	0.15%
Estee Lauder Cos Inc/The	EL	232.42	296.33	0.81	12.21	68,874.20	0.18%	0.15%	2.23%
Cadence Design Systems Inc	CDNS	277.34	151.43	n/a	13.72	41,996.99	0.11%		1.53%
Tyler Technologies Inc	TYL	41.35	428.26	n/a	16.27	17,708.12	0.05%		0.76%
Universal Health Services Inc	UHS	67.55	143.93	0.56	9.42	9,722.76	0.03%	0.01%	0.24%
Skyworks Solutions Inc	SWKS	164.01	138.17	1.62	9.94	22,660.71	0.06%	0.10%	0.60%
Quest Diagnostics Inc	DGX	119.46	131.27	2.01	-6.42	15,680.86	0.04%	0.08%	-0.27%
Activision Blizzard Inc	ATVI	779.24	81.50	0.58	10.80	63,507.65	0.17%	0.10%	1.82%
Rockwell Automation Inc	ROK	116.20	266.58	1.68	10.46	30,975.53	0.08%	0.14%	0.86%
Kraft Heinz Co/The	KHC	1223.74	39.22	4.08	4.60	47,995.08	0.13%	0.52%	0.59%
American Tower Corp	AMT	455.89	226.87	2.45	13.04	103,426.63	0.27%	0.67%	3.57%
Regeneron Pharmaceuticals Inc	REGN	106.72	618.36	n/a	-3.27	65,988.91	0.17%		-0.57%
Amazon.com Inc	AMZN	508.84	3071.26	n/a	18.87	1,562,792.22	4.14%		78.13%
Jack Henry & Associates Inc	JKHY	72.83	176.80	1.11	15.05	12,875.46	0.03%	0.04%	0.51%
Ralph Lauren Corp	RL	46.29	132.04	2.08	90.72	6,111.60	0.02%	0.03%	1.47%
Boston Properties Inc	BXP	156.68	122.31	3.20	-8.21	19,163.04	0.05%	0.16%	-0.42%
Amphenol Corp	APH	598.94	76.01	1.05	10.14	45,525.43	0.12%	0.13%	1.22%
Howmet Aerospace Inc	HWM	418.91	35.92	0.22	33.00	15,047.07	0.04%	0.01%	1.32%
Pioneer Natural Resources Co	PXD	242.88	239.60	6.31	13.23	58,195.01	0.15%	0.97%	2.04%
Valero Energy Corp	VLO	409.30	83.51	4.69	n/a	0.00	0.00%	0.00%	
Synopsys Inc	SNPS	153.10	312.39	n/a	16.36	47,826.60	0.13%		2.07%
Etsy Inc	ETSY	127.03	154.89	n/a	23.77	19,676.14	0.05%		1.24%
CH Robinson Worldwide Inc	CHRW	128.80	96.68	2.28	12.65	12,452.29	0.03%	0.08%	0.42%
Accenture PLC	ACN	658.33	316.02	1.23	11.00	208,046.39	0.55%	0.68%	6.06%
TransDigm Group Inc	TDG	55.46	666.59	n/a	23.15	36,970.41	0.10%		2.27%
Yum! Brands Inc	YUM	288.98	122.58	1.86	11.59	35,423.29	0.09%	0.17%	1.09%
Prologis Inc	PLD	739.75	145.85	2.77	8.27	107,891.81	0.29%	0.62%	2.36%
FirstEnergy Corp	FE	570.34	41.85	3.73	4.63	23,868.90	0.06%	0.24%	0.29%
VeriSign Inc	VRSN	110.17	213.72	n/a	8.80	23,544.89	0.06%		0.55%
Quanta Services Inc	PWR	142.69	108.94	0.26	14.50	15,544.65	0.04%	0.01%	0.60%
Henry Schein Inc	HSIC	137.17	86.38	n/a	14.95	11,849.00	0.03%		0.47%
Ameren Corp	AEE	255.41	85.95	2.75	7.70	21,952.49	0.06%	0.16%	0.45%
ANSYS Inc	ANSS	87.23	324.19	n/a	11.65	28,279.09	0.07%		0.87%
FactSet Research Systems Inc	FDS	37.80	406.09	0.81	9.00	15,348.98	0.04%	0.03%	0.37%
NVIDIA Corp	NVDA	2500.00	243.85	0.07	25.13	609,625.00	1.62%	0.11%	40.59%
Sealed Air Corp	SEE	148.16	67.13	1.19	8.79	9,945.85	0.03%	0.03%	0.23%
Cognizant Technology Solutions Corp	CTSH	524.54	86.13	1.25	12.40	45,178.20	0.12%	0.15%	1.48%
SVB Financial Group	SIVB	58.75	606.00	n/a	7.00	35,601.29	0.09%		0.66%
Intuitive Surgical Inc	ISRG	357.74	290.33	n/a	3.25	103,863.82	0.28%		0.89%
Take-Two Interactive Software Inc	TTWO	115.42	162.00	n/a	9.90	18,697.39	0.05%		0.49%
Republic Services Inc	RSG	316.43	120.28	1.53	8.76	38,060.32	0.10%	0.15%	0.88%
eBay Inc	EBAY	587.53	54.59	1.61	8.92	32,073.21	0.08%	0.14%	0.76%
Goldman Sachs Group Inc/The	GS	337.92	341.29	2.34	6.80	115,328.74	0.31%	0.72%	2.08%
SBA Communications Corp	SBAC	108.78	303.39	0.94	23.30	33,003.07	0.09%	0.08%	2.04%
Sempra Energy	SRE	315.07	144.22	3.18	5.85	45,439.54	0.12%	0.38%	0.70%
Moody's Corp	MCO	185.20	322.03	0.87	10.00	59,639.96	0.16%	0.14%	1.58%
Booking Holdings Inc	BKNG	40.89	2172.25	n/a	28.35	88,818.96	0.24%		6.67%
F5 Inc	FFIV	60.74	200.85	n/a	13.60	12,199.23	0.03%		0.44%
Akamai Technologies Inc	AKAM	160.35	108.26	n/a	16.30	17,359.17	0.05%		0.75%
Charles River Laboratories International Inc	CRL	50.49	291.16	n/a	15.15	14,699.50	0.04%		0.59%
MarketAxess Holdings Inc	MKTX	37.84	381.43	0.73	10.80	14,431.40	0.04%	0.03%	0.41%
Devon Energy Corp	DVN	664.20	59.55	6.72	16.68	39,553.11	0.10%	0.70%	1.75%
Alphabet Inc	GOOGL	300.76	2701.14	n/a	20.34	812,381.36	2.15%		43.79%
Bio-Techne Corp	TECH	39.29	419.41	0.31	25.07	16,477.78	0.04%	0.01%	1.09%
Teleflex Inc	TFX	46.85	336.31	0.40	11.70	15,754.44	0.04%	0.02%	0.49%
Netflix Inc	NFLX	443.96	394.52	n/a	27.97	175,152.28	0.46%		12.98%
Allegion plc	ALLE	88.23	114.52	1.43	7.09	10,104.10	0.03%	0.04%	0.19%
Agilent Technologies Inc	A	302.00	130.36	0.64	10.65	39,368.72	0.10%	0.07%	1.11%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED BLOOMBERG GROWTH RATES

Name	Ticker	Shares Out/g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Anthem Inc	ANTM	241.30	451.85	1.13	10.09	109,033.21	0.29%	0.33%	2.92%
Trimble Inc	TRMB	251.22	69.75	n/a	10.00	17,522.32	0.05%		0.46%
CME Group Inc	CME	359.40	236.53	1.69	7.85	85,007.70	0.23%	0.38%	1.77%
Juniper Networks Inc	JNPR	322.76	33.79	2.49	8.85	10,906.03	0.03%	0.07%	0.26%
BlackRock Inc	BLK	152.04	743.89	2.62	10.00	113,102.52	0.30%	0.79%	3.00%
DTE Energy Co	DTE	193.75	121.59	2.91	5.87	23,558.31	0.06%	0.18%	0.37%
Nasdaq Inc	NDAQ	164.41	171.15	1.26	10.64	28,139.11	0.07%	0.09%	0.79%
Celanese Corp	CE	108.03	139.28	1.95	8.26	15,046.28	0.04%	0.08%	0.33%
Philip Morris International Inc	PM	1549.83	101.07	4.95	7.86	156,641.12	0.42%	2.05%	3.26%
salesforce.com Inc	CRM	985.00	210.53	n/a	17.28	207,372.05	0.55%		9.50%
Ingersoll Rand Inc	IR	407.97	50.52	0.16	14.85	20,610.54	0.05%	0.01%	0.81%
Huntington Ingalls Industries Inc	HII	39.99	204.40	2.31	25.20	8,173.75	0.02%	0.05%	0.55%
MetLife Inc	MET	825.08	67.55	2.84	1.41	55,734.02	0.15%	0.42%	0.21%
Under Armour Inc	UA	253.22	15.63	n/a	n/a	0.00	0.00%		
Tapestry Inc	TPR	263.99	40.90	2.44	13.53	10,797.19	0.03%	0.07%	0.39%
CSX Corp	CSX	2193.39	33.91	1.18	12.45	74,377.82	0.20%	0.23%	2.45%
Edwards Lifesciences Corp	EW	623.21	112.37	n/a	14.33	70,028.77	0.19%		2.66%
Ameriprise Financial Inc	AMP	110.75	299.79	1.51	14.50	33,202.04	0.09%	0.13%	1.28%
Zebra Technologies Corp	ZBRA	53.08	413.34	n/a	10.80	21,940.09	0.06%		0.63%
Zimmer Biomet Holdings Inc	ZBH	209.18	123.39	0.78	8.63	25,810.33	0.07%	0.05%	0.59%
CBRE Group Inc	CBRE	334.67	96.85	n/a	19.40	32,412.40	0.09%		1.67%
Mastercard Inc	MA	969.73	360.82	0.54	22.26	349,897.62	0.93%	0.50%	20.64%
CarMax Inc	KMX	161.68	109.33	n/a	17.07	17,676.47	0.05%		0.80%
Intercontinental Exchange Inc	ICE	561.85	128.12	1.19	9.55	71,984.48	0.19%	0.23%	1.82%
Fidelity National Information Services Inc	FIS	609.59	95.23	1.97	11.81	58,051.35	0.15%	0.30%	1.82%
Chipotle Mexican Grill Inc	CMG	28.03	1523.35	n/a	29.20	42,702.55	0.11%		3.30%
Wynn Resorts Ltd	WYNN	115.90	86.52	n/a	n/a	0.00	0.00%		
Live Nation Entertainment Inc	LYV	224.63	120.82	n/a	n/a	0.00	0.00%		
Assurant Inc	AIZ	55.16	169.71	1.60	17.67	9,361.54	0.02%	0.04%	0.44%
NRG Energy Inc	NRG	242.15	37.84	3.70	29.36	9,163.07	0.02%	0.09%	0.71%
Regions Financial Corp	RF	937.15	24.19	2.81	-1.12	22,669.56	0.06%	0.17%	-0.07%
Monster Beverage Corp	MNST	529.36	84.40	n/a	10.20	44,677.90	0.12%		1.21%
Mosaic Co/The	MOS	368.31	52.43	0.86	-5.67	19,310.44	0.05%	0.04%	-0.29%
Baker Hughes Co	BKR	953.34	29.38	2.45	63.81	28,009.16	0.07%	0.18%	4.74%
Expedia Group Inc	EXPE	150.23	196.11	n/a	32.25	29,461.80	0.08%		2.52%
Evergy Inc	EVER	226.99	62.41	3.67	6.21	14,166.63	0.04%	0.14%	0.23%
Discovery Inc	DISCA	169.58	28.05	n/a	-2.75	4,756.72	0.01%		-0.03%
CF Industries Holdings Inc	CF	207.31	81.19	1.48	8.87	16,831.09	0.04%	0.07%	0.40%
Leidos Holdings Inc	LDOS	140.51	101.84	1.41	7.17	14,309.03	0.04%	0.05%	0.27%
APA Corp	APA	346.78	35.63	1.40	14.62	12,355.63	0.03%	0.05%	0.48%
Alphabet Inc	GOOG	315.64	2697.82	n/a	20.34	851,537.21	2.26%		45.90%
TE Connectivity Ltd	TEL	325.58	142.43	1.57	9.02	46,371.65	0.12%	0.19%	1.11%
Cooper Cos Inc/The	COO	49.30	409.02	0.01	11.90	20,163.05	0.05%	0.00%	0.64%
Discover Financial Services	DFS	284.90	123.44	1.62	25.35	35,168.55	0.09%	0.15%	2.36%
Visa Inc	V	1658.42	216.12	0.69	18.44	358,418.59	0.95%	0.66%	17.51%
Mid-America Apartment Communities Inc	MAA	115.34	204.61	2.13	n/a	0.00	0.00%	0.00%	
Xylem Inc/NY	XYL	179.90	88.95	1.35	15.75	16,002.19	0.04%	0.06%	0.67%
Marathon Petroleum Corp	MPC	565.21	77.87	2.98	10.93	44,013.14	0.12%	0.35%	1.27%
Tractor Supply Co	TSCO	112.77	203.79	1.81	9.10	22,981.81	0.06%	0.11%	0.55%
Advanced Micro Devices Inc	AMD	1627.37	123.34	n/a	32.95	200,719.20	0.53%		17.53%
ResMed Inc	RMD	146.23	246.75	0.68	15.97	36,083.24	0.10%	0.07%	1.53%
Mettler-Toledo International Inc	MTD	22.81	1408.74	n/a	17.37	32,127.72	0.09%		1.48%
Copart Inc	CPRT	237.19	122.88	n/a	n/a	0.00	0.00%		
Albemarle Corp	ALB	117.04	195.89	0.81	24.28	22,926.38	0.06%	0.05%	1.48%
Fortinet Inc	FTNT	160.82	344.52	n/a	17.16	55,403.98	0.15%		2.52%
Moderna Inc	MRNA	402.87	153.60	n/a	-165.06	61,881.29	0.16%		-27.07%
Essex Property Trust Inc	ESS	65.28	317.17	2.77	7.22	20,704.54	0.05%	0.15%	0.40%
Realty Income Corp	O	591.32	66.09	4.48	7.57	39,080.40	0.10%	0.46%	0.78%
Westrock Co	WRK	263.21	45.27	2.21	14.21	11,915.70	0.03%	0.07%	0.45%
IHS Markit Ltd	INFO	#N/A	#N/A	#N/A	n/a	11.20	0.00%	0.00%	0.00%
Westinghouse Air Brake Technologies Corp	WAB	185.29	92.82	0.65	10.27	17,198.62	0.05%	0.03%	0.47%
Pool Corp	POOL	40.17	458.58	0.70	n/a	0.00	0.00%	0.00%	
Western Digital Corp	WDC	312.92	50.94	n/a	13.62	15,940.04	0.04%		0.58%
PepsiCo Inc	PEP	1363.45	163.74	2.63	7.35	226,526.27	0.60%	1.58%	4.41%
Diamondback Energy Inc	FANG	177.42	138.10	1.74	23.11	24,501.01	0.06%	0.11%	1.50%
ServiceNow Inc	NOW	200.00	579.92	n/a	36.00	115,984.00	0.31%		11.06%
Church & Dwight Co Inc	CHD	242.69	97.85	1.07	6.83	23,747.41	0.06%	0.07%	0.43%
Duke Realty Corp	DRE	382.77	53.00	2.11	7.56	20,286.70	0.05%	0.11%	0.41%
Federal Realty Investment Trust	FRT	78.62	117.58	3.64	13.11	9,243.79	0.02%	0.09%	0.32%
MGM Resorts International	MGM	439.17	44.29	0.02	0.85	19,450.93	0.05%	0.00%	0.04%
American Electric Power Co Inc	AEP	504.21	90.65	3.44	6.24	45,706.82	0.12%	0.42%	0.76%
SolarEdge Technologies Inc	SEDG	52.82	319.42	n/a	23.27	16,871.44	0.04%		1.04%
PTC Inc	PTC	116.95	111.28	n/a	12.14	13,014.42	0.03%		0.42%
JB Hunt Transport Services Inc	JBHT	104.85	202.93	0.79	21.50	21,277.21	0.06%	0.04%	1.21%
Lam Research Corp	LROX	139.50	561.35	1.07	13.53	78,308.33	0.21%	0.22%	2.81%
Mohawk Industries Inc	MHK	65.07	140.78	n/a	13.59	9,160.70	0.02%		0.33%
Pentair PLC	PNR	165.10	57.91	1.45	9.60	9,560.88	0.03%	0.04%	0.24%
Vertex Pharmaceuticals Inc	VRTX	254.58	230.02	n/a	28.98	58,557.80	0.16%		4.50%
Amcor PLC	AMCR	1513.73	11.63	4.13	7.80	17,604.65	0.05%	0.19%	0.36%
Meta Platforms Inc	FB	2309.08	211.03	n/a	19.42	487,285.15	1.29%		25.07%
T-Mobile US Inc	TMUS	1249.29	123.21	n/a	20.33	153,925.02	0.41%		8.29%
United Rentals Inc	URI	72.42	321.62	n/a	14.01	23,292.36	0.06%		0.86%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED BLOOMBERG GROWTH RATES

Name	Ticker	Shares Outst'g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
ABIOMED Inc	ABMD	45.52	310.74	n/a	n/a	0.00	0.00%		
Honeywell International Inc	HON	685.82	189.75	2.07	10.35	130,134.16	0.34%	0.71%	3.57%
Alexandria Real Estate Equities Inc	ARE	159.94	189.40	2.43	-2.12	30,293.20	0.08%	0.19%	-0.17%
Delta Air Lines Inc	DAL	639.93	39.92	n/a	86.00	25,546.01	0.07%		5.82%
Seagate Technology Holdings PLC	STX	218.90	103.16	2.71	8.18	22,581.52	0.06%	0.16%	0.49%
United Airlines Holdings Inc	UAL	323.61	44.40	n/a	n/a	0.00	0.00%		
News Corp	NWS	198.48	22.43	0.89	14.30	4,451.97	0.01%	0.01%	0.17%
Centene Corp	CNC	582.87	82.62	n/a	10.65	48,156.39	0.13%		1.36%
Martin Marietta Materials Inc	MLM	62.40	379.40	0.64	13.23	23,672.66	0.06%	0.04%	0.83%
Tetradyme Inc	TER	162.42	117.92	0.37	12.64	19,152.21	0.05%	0.02%	0.64%
PayPal Holdings Inc	PYPL	1165.01	111.93	n/a	19.93	130,399.01	0.35%		6.89%
Tesla Inc	TSLA	1033.51	870.43	n/a	36.20	899,596.37	2.38%		86.29%
DISH Network Corp	DISH	290.57	31.96	n/a	1.75	9,286.65	0.02%		0.04%
Dow Inc	DOW	735.75	58.96	4.75	27.00	43,379.64	0.11%	0.55%	3.10%
Penn National Gaming Inc	PENN	168.32	51.35	n/a	16.00	8,643.39	0.02%		0.37%
Everest Re Group Ltd	RE	39.27	298.22	2.08	41.40	11,711.70	0.03%	0.06%	1.28%
Teledyne Technologies Inc	TDY	47.20	429.38	n/a	9.22	20,264.59	0.05%		0.50%
News Corp	NWSA	390.87	22.32	0.90	14.30	8,724.31	0.02%	0.02%	0.33%
Exelon Corp	EXC	978.32	42.56	3.17	n/a	0.00	0.00%	0.00%	
Global Payments Inc	GPN	281.97	133.38	0.75	17.43	37,608.89	0.10%	0.07%	1.74%
Crown Castle International Corp	CCI	432.22	166.59	3.53	10.10	72,002.70	0.19%	0.67%	1.93%
Aptiv PLC	APTV	270.51	129.44	n/a	22.27	35,015.33	0.09%		2.07%
Advance Auto Parts Inc	AAP	61.10	204.48	2.93	16.53	12,493.32	0.03%	0.10%	0.55%
Align Technology Inc	ALGN	78.80	511.46	n/a	15.28	40,300.49	0.11%		1.63%
Ilumina Inc	ILMN	157.00	326.60	n/a	31.19	51,276.20	0.14%		4.24%
LKQ Corp	LKQ	285.01	46.95	2.13	3.30	13,381.41	0.04%	0.08%	0.12%
Nielsen Holdings PLC	NLSN	359.49	17.42	1.38	n/a	0.00	0.00%	0.00%	
Zoetis Inc	ZTS	471.97	193.65	0.67	12.56	91,397.18	0.24%	0.16%	3.04%
Zimvie Inc	ZIMV	#N/A N/A	38.00	n/a	n/a	0.00	0.00%		
Equinix Inc	EQIX	90.72	709.73	1.75	18.30	64,387.42	0.17%	0.30%	3.12%
Digital Realty Trust Inc	DLR	284.47	134.92	3.44	14.56	38,380.56	0.10%	0.35%	1.48%
Las Vegas Sands Corp	LVS	763.99	42.86	n/a	n/a	0.00	0.00%		
Discovery Inc	DISCK	330.15	27.97	n/a	-2.75	9,234.41	0.02%		-0.07%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VALUE LINE GROWTH RATES

[7] Cap. Weighted Estimate of the S&P 500 Dividend Yield	1.45%
[8] Cap. Weighted Estimate of the S&P 500 Growth Rate	14.61%
[9] Cap. Weighted S&P 500 Estimated Required Market Return	16.17%

Notes:

- [7] Source: Bloomberg Professional, as of February 28, 2022
- [8] Source: Bloomberg Professional, as of February 28, 2022, and Value Line, as of February 28, 2022
- [9] Equals $([7] \times (1 + (0.5 \times [8]))) + [8]$

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VALUE LINE GROWTH RATES

Name	Ticker	Shares Outst'g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Long-Term Growth
LyondellBasell Industries NV	LYB	328.01	97.23	4.65	5.50	31,892.41	0.09%	0.41%	0.49%
Signature Bank/New York NY	SBNY	62.57	344.89	0.65	12.00	21,579.42	0.06%	0.04%	0.72%
American Express Co	AXP	759.36	194.54	0.88	12.00	147,724.92	0.41%	0.36%	4.91%
Verizon Communications Inc	VZ	4197.82	53.67	4.77	2.50	225,297.21	0.62%	2.98%	1.56%
Broadcom Inc	AVGO	409.61	587.44	2.79	27.00	240,623.06	0.67%	1.86%	18.00%
Boeing Co/The	BA	583.00	205.34	n/a	0.00	0.00	0.00%	0.00%	0.00%
Caterpillar Inc	CAT	535.89	187.58	2.37	8.00	100,521.87	0.28%	0.66%	2.23%
JPMorgan Chase & Co	JPM	2952.81	141.80	2.82	7.50	418,708.32	1.16%	3.27%	8.70%
Chevron Corp	CVX	1947.55	144.00	3.94	25.00	280,447.63	0.78%	3.07%	19.43%
Coca-Cola Co/The	KO	4335.47	62.24	2.83	7.00	269,839.84	0.75%	2.11%	5.23%
AbbVie Inc	ABBV	1768.75	147.77	3.82	6.50	261,368.78	0.72%	2.76%	4.71%
Walt Disney Co/The	DIS	1820.63	148.46	n/a	37.50	270,291.18	0.75%	28.09%	28.09%
FleetCor Technologies Inc	FLT	81.20	234.20	n/a	11.00	19,016.81	0.05%	0.22%	0.58%
Extra Space Storage Inc	EXR	134.15	188.15	3.19	5.50	25,240.89	0.07%	0.22%	0.38%
Exxon Mobil Corp	XOM	4233.59	78.42	4.49	0.00	0.00	0.00%	0.00%	0.00%
Phillips 66	PSX	438.46	84.24	4.37	17.00	36,936.04	0.10%	0.45%	1.74%
General Electric Co	GE	1099.32	95.51	0.34	15.00	104,996.24	0.29%	0.10%	4.36%
HP Inc	HPQ	1053.37	34.36	2.91	15.50	36,193.66	0.10%	0.29%	1.55%
Home Depot Inc/The	HD	1044.24	315.83	2.41	11.00	329,802.00	0.91%	2.20%	10.05%
Monolithic Power Systems Inc	MPWR	46.51	458.70	0.65	20.50	21,333.68	0.06%	0.04%	1.21%
International Business Machines Corp	IBM	899.31	122.51	5.35	0.50	110,174.47	0.31%	1.63%	0.15%
Johnson & Johnson	JNJ	2629.27	164.57	2.58	8.00	432,698.63	1.20%	3.09%	9.59%
McDonald's Corp	MCD	743.59	244.77	2.26	10.00	182,007.30	0.50%	1.14%	5.04%
Merck & Co Inc	MRK	2527.73	76.58	3.60	7.50	193,573.87	0.54%	1.93%	4.02%
3M Co	MMM	571.10	148.65	4.01	6.00	84,894.02	0.24%	0.94%	1.41%
American Water Works Co Inc	AWK	181.73	151.09	1.60	8.50	27,456.83	0.08%	0.12%	0.65%
Bank of America Corp	BAC	8069.80	44.20	1.90	7.50	356,685.20	0.99%	1.88%	7.41%
Pfizer Inc	PFE	5623.35	46.94	3.41	11.50	263,959.86	0.73%	2.49%	8.41%
Procter & Gamble Co/The	PG	2397.07	155.89	2.23	7.00	373,678.62	1.04%	2.31%	7.25%
AT&T Inc	T	7142.89	23.69	8.78	1.50	169,215.14	0.47%	4.12%	0.70%
Travelers Cos Inc/The	TRV	241.50	171.83	2.05	8.00	41,497.12	0.11%	0.24%	0.92%
Raytheon Technologies Corp	RTX	1492.33	102.70	1.99	7.50	153,262.39	0.42%	0.84%	3.19%
Analog Devices Inc	ADI	523.32	160.29	1.90	11.00	83,882.16	0.23%	0.44%	2.56%
Walmart Inc	WMT	2773.88	135.16	1.66	7.50	374,917.35	1.04%	1.72%	7.79%
Cisco Systems Inc/Delaware	CSCO	4154.17	55.77	2.73	7.00	231,677.95	0.64%	1.75%	4.49%
Intel Corp	INTC	4072.00	47.70	3.06	7.00	194,234.40	0.54%	1.65%	3.77%
General Motors Co	GM	1453.02	46.72	n/a	12.00	67,885.14	0.19%	0.26%	2.26%
Microsoft Corp	MSFT	7496.87	298.79	0.83	17.50	2,239,988.59	6.21%	5.15%	108.62%
Dollar General Corp	DG	231.71	198.34	0.85	10.50	45,956.77	0.13%	0.11%	1.34%
Cigna Corp	CI	320.95	237.78	1.88	10.00	76,316.20	0.21%	0.40%	2.11%
Kinder Morgan Inc	KMI	2267.49	17.40	6.21	19.00	39,454.24	0.11%	0.68%	2.08%
Citigroup Inc	C	1980.90	59.23	3.44	7.00	117,328.41	0.33%	1.12%	2.28%
American International Group Inc	AIG	814.76	61.24	2.09	31.50	49,895.78	0.14%	0.29%	4.36%
Altria Group Inc	MO	1817.26	51.29	7.02	5.50	93,207.11	0.26%	1.81%	1.42%
HCA Healthcare Inc	HCA	303.60	250.31	0.89	12.50	75,994.12	0.21%	0.19%	2.63%
Under Armour Inc	UA	188.67	17.89	n/a	33.00	3,375.29	0.01%	0.01%	0.31%
International Paper Co	IP	376.36	43.53	4.25	12.00	16,383.12	0.05%	0.19%	0.54%
Hewlett Packard Enterprise Co	HPE	1300.27	15.92	3.02	6.50	20,700.31	0.06%	0.17%	0.37%
Abbott Laboratories	ABT	1763.48	120.62	1.56	10.00	212,711.20	0.59%	0.92%	5.89%
Aflac Inc	AFL	649.86	61.09	2.62	11.00	39,700.01	0.11%	0.29%	1.21%
Air Products and Chemicals Inc	APD	221.72	236.30	2.74	12.00	52,391.73	0.15%	0.40%	1.74%
Royal Caribbean Cruises Ltd	RCL	254.82	80.72	n/a	0.00	0.00	0.00%	0.00%	0.00%
Hess Corp	HES	309.73	101.06	0.99	0.00	0.00	0.00%	0.00%	0.00%
Archer-Daniels-Midland Co	ADM	562.17	78.45	2.04	12.50	44,102.00	0.12%	0.25%	1.53%
Automatic Data Processing Inc	ADP	420.05	204.44	2.03	9.00	85,874.00	0.24%	0.48%	2.14%
Verisk Analytics Inc	VRSK	161.28	177.34	0.70	10.50	28,601.93	0.08%	0.06%	0.83%
AutoZone Inc	AZO	20.63	1863.39	n/a	16.50	38,449.19	0.11%	0.11%	1.76%
Avery Dennison Corp	AVY	82.46	176.20	1.54	9.00	14,529.63	0.04%	0.06%	0.36%
Enphase Energy Inc	ENPH	133.94	166.70	n/a	40.00	22,327.13	0.06%	0.06%	2.47%
MSCI Inc	MSCI	81.27	501.69	0.83	15.50	40,771.34	0.11%	0.09%	1.75%
Ball Corp	BLL	321.50	89.74	0.89	21.00	28,851.05	0.08%	0.07%	1.68%
Ceridian HCM Holding Inc	CDAY	152.05	72.91	n/a	0.00	0.00	0.00%	0.00%	0.00%
Carrier Global Corp	CARR	855.51	44.88	1.34	0.00	0.00	0.00%	0.00%	0.00%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VALUE LINE GROWTH RATES

Name	Ticker	Shares Outst'g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Bank of New York Mellon Corp/The	BK	804.50	53.15	2.56	5.00	42,758.91	0.12%	0.30%	0.59%
Otis Worldwide Corp	OTIS	424.96	78.33	1.23		0.00	0.00%	0.00%	0.00%
Baxter International Inc	BAX	502.29	84.97	1.32	9.50	42,679.92	0.12%	0.16%	1.12%
Becton Dickinson and Co	BDX	284.77	271.28	1.28	6.00	77,252.68	0.21%	0.27%	1.28%
Berkshire Hathaway Inc	BRK/B	1291.21	321.45	n/a	6.00	415,060.42	1.15%		6.90%
Best Buy Co Inc	BBY	240.56	96.64	2.90	8.50	23,247.82	0.06%	0.19%	0.55%
Boston Scientific Corp	BSX	1426.73	44.17	n/a	16.00	63,018.44	0.17%		2.79%
Bristol-Myers Squibb Co	BMJ	2179.71	68.67	3.15	12.50	149,680.89	0.41%	1.30%	5.18%
Fortune Brands Home & Security Inc	FBHS	134.17	86.90	1.29	11.00	11,659.72	0.03%	0.04%	0.36%
Brown-Forman Corp	BF/B	309.74	65.23	1.16	13.00	20,204.54	0.06%	0.06%	0.73%
Coterra Energy Inc	CTRA	813.58	23.33	9.60		0.00	0.00%	0.00%	0.00%
Campbell Soup Co	CPB	301.74	44.97	3.29	5.50	13,569.16	0.04%	0.12%	0.21%
Hilton Worldwide Holdings Inc	HLT	279.14	148.86	n/a		0.00	0.00%		0.00%
Carnival Corp	CCL	986.36	20.33	n/a		0.00	0.00%		0.00%
Qorvo Inc	QRVO	108.43	136.78	n/a	27.00	14,831.33	0.04%		1.11%
Lumen Technologies Inc	LUMN	1023.37	10.36	9.65	3.50	10,602.13	0.03%	0.28%	0.10%
UDR Inc	UDR	318.27	54.87	2.64	6.00	17,463.20	0.05%	0.13%	0.29%
Clorox Co/The	CLX	123.06	145.79	3.18	5.00	17,940.63	0.05%	0.16%	0.25%
Paycom Software Inc	PAYC	60.21	339.21	n/a	20.00	20,425.19	0.06%		1.13%
CMS Energy Corp	CMS	289.76	64.01	2.87	6.00	18,547.54	0.05%	0.15%	0.31%
Newell Brands Inc	NWL	425.50	23.75	3.87		0.00	0.00%	0.00%	0.00%
Colgate-Palmolive Co	CL	840.49	76.95	2.34	5.00	64,675.47	0.18%	0.42%	0.90%
EPAM Systems Inc	EPAM	56.88	207.75	n/a	23.50	11,816.61	0.03%		0.77%
Comerica Inc	CMA	131.08	95.49	2.85	6.00	12,516.73	0.03%	0.10%	0.21%
IPG Photonics Corp	IPGP	52.94	130.35	n/a	17.00	6,900.60	0.02%		0.33%
Conagra Brands Inc	CAG	479.70	34.97	3.57	4.50	16,775.04	0.05%	0.17%	0.21%
Consolidated Edison Inc	ED	354.09	85.77	3.68	3.50	30,370.30	0.08%	0.31%	0.29%
Corning Inc	GLW	845.85	40.40	2.67	20.00	34,172.30	0.09%	0.25%	1.89%
Cummins Inc	CMI	142.43	204.12	2.84	8.00	29,072.20	0.08%	0.23%	0.64%
Caesars Entertainment Inc	CZR	214.12	84.19	n/a		0.00	0.00%		0.00%
Danaher Corp	DHR	715.35	274.41	0.36	21.00	196,300.02	0.54%	0.20%	11.42%
Target Corp	TGT	479.12	199.77	1.80	15.00	95,714.60	0.27%	0.48%	3.98%
Deere & Co	DE	306.78	360.02	1.17	21.50	110,448.38	0.31%	0.36%	6.58%
Dominion Energy Inc	D	810.46	79.53	3.36	11.50	64,456.12	0.18%	0.60%	2.05%
Dover Corp	DOV	144.06	156.86	1.28	9.00	22,596.47	0.06%	0.08%	0.56%
Alliant Energy Corp	LNT	250.48	58.40	2.93	5.50	14,627.97	0.04%	0.12%	0.22%
Duke Energy Corp	DUK	769.00	100.41	3.92	7.00	77,215.29	0.21%	0.84%	1.50%
Regency Centers Corp	REG	171.37	65.89	3.79	16.00	11,291.77	0.03%	0.12%	0.50%
Eaton Corp PLC	ETN	398.80	154.29	2.10	11.50	61,530.85	0.17%	0.36%	1.96%
Ecolab Inc	ECL	286.75	176.26	1.16	8.00	50,542.91	0.14%	0.16%	1.12%
PerkinElmer Inc	PKI	126.20	179.61	0.16	10.00	22,666.78	0.06%	0.01%	0.63%
Emerson Electric Co	EMR	594.00	92.92	2.22	11.50	55,194.48	0.15%	0.34%	1.76%
EOG Resources Inc	EOG	585.42	114.92	2.61	16.00	67,276.35	0.19%	0.49%	2.98%
Aon PLC	AON	213.94	292.14	0.70	7.00	62,501.60	0.17%	0.12%	1.21%
Entergy Corp	ETR	203.03	105.21	3.84	3.00	21,360.58	0.06%	0.23%	0.18%
Equifax Inc	EFX	122.09	218.34	0.71	10.50	26,656.04	0.07%	0.05%	0.78%
IQVIA Holdings Inc	IQV	190.91	230.12	n/a	14.50	43,932.67	0.12%		1.77%
Gartner Inc	IT	82.29	280.42	n/a	20.50	23,074.92	0.06%		1.31%
FedEx Corp	FDX	264.97	222.27	1.35	13.00	58,894.66	0.16%	0.22%	2.12%
FMC Corp	FMC	125.70	117.25	1.81	10.50	14,738.21	0.04%	0.07%	0.43%
Brown & Brown Inc	BRO	282.22	67.61	0.61	10.50	19,080.62	0.05%	0.03%	0.56%
Ford Motor Co	F	393.40	17.56	2.28	29.00	69,070.42	0.19%	0.44%	5.55%
NextEra Energy Inc	NEE	1962.75	78.27	2.17	11.00	153,624.05	0.43%	0.92%	4.68%
Franklin Resources Inc	BEN	502.12	29.73	3.90	11.00	14,928.15	0.04%	0.16%	0.46%
Garmin Ltd	GRMN	192.79	110.44	2.64	10.00	21,291.40	0.06%	0.16%	0.59%
Freeport-McMoRan Inc	FCX	1454.78	46.95	0.64	37.50	68,301.97	0.19%	0.12%	7.10%
Dexcom Inc	DXCM	97.07	413.91	n/a	34.00	40,176.59	0.11%		3.79%
General Dynamics Corp	GD	277.70	234.45	2.03	6.00	65,106.30	0.18%	0.37%	1.08%
General Mills Inc	GIS	603.21	67.43	3.03	3.50	40,674.25	0.11%	0.34%	0.39%
Genuine Parts Co	GPC	141.96	122.16	2.93	7.00	17,342.20	0.05%	0.14%	0.34%
Atmos Energy Corp	ATO	135.43	109.81	2.48	7.50	14,871.79	0.04%	0.10%	0.31%
WW Grainger Inc	GWG	51.11	477.06	1.36	6.50	24,381.58	0.07%	0.09%	0.44%
Halliburton Co	HAL	898.57	33.53	1.43	9.50	30,129.12	0.08%	0.12%	0.79%
L3Harris Technologies Inc	LHX	193.07	252.31	1.78		0.00	0.00%	0.00%	0.00%
Healthpeak Properties Inc	PEAK	539.30	31.06	3.86	-12.00	16,750.78	0.05%	0.18%	-0.56%
Catalent Inc	CTLT	179.13	102.04	n/a	21.00	18,278.22	0.05%		1.06%
Fortive Corp	FTV	359.10	64.75	0.43	12.00	23,251.73	0.06%	0.03%	0.77%
Hershey Co/The	HSY	145.63	202.26	1.78	6.00	29,454.72	0.08%	0.15%	0.49%
Synchrony Financial	SYF	521.27	42.78	2.06	9.50	22,300.02	0.06%	0.13%	0.59%
Hormel Foods Corp	HRL	542.57	47.64	2.18	6.50	25,848.03	0.07%	0.16%	0.47%
Arthur J Gallagher & Co	AJG	208.54	158.19	1.29	14.50	32,989.26	0.09%	0.12%	1.33%
Mondelez International Inc	MDLZ	1388.33	65.48	2.14	8.00	90,907.72	0.25%	0.54%	2.02%
CenterPoint Energy Inc	CNP	628.87	27.35	2.49	4.50	17,199.49	0.05%	0.12%	0.21%
Humana Inc	HUM	126.63	434.32	0.73	12.00	54,999.68	0.15%	0.11%	1.83%
Willis Towers Watson PLC	WTW	117.75	222.30	1.48	11.00	26,174.94	0.07%	0.11%	0.80%
Illinois Tool Works Inc	ITW	312.93	216.34	2.26	11.00	67,698.63	0.19%	0.42%	2.06%
CDW Corp/DE	CDW	134.94	172.46	1.16	11.00	23,272.44	0.06%	0.07%	0.71%
Trane Technologies PLC	TT	233.54	153.93	1.74		0.00	0.00%	0.00%	0.00%
Interpublic Group of Cos Inc/The	IPG	393.96	36.80	3.15	12.00	14,497.73	0.04%	0.13%	0.48%
International Flavors & Fragrances Inc	IFF	254.69	133.00	2.38	7.00	33,873.11	0.09%	0.22%	0.66%
Jacobs Engineering Group Inc	J	129.22	123.00	0.75	15.00	15,893.69	0.04%	0.03%	0.66%
Generac Holdings Inc	GNRC	63.78	315.47	n/a	23.50	20,121.94	0.06%		1.31%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VALUE LINE GROWTH RATES

Name	Ticker	Shares Out/g	Price	Dividend Yield	Value Line		Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
					Long-Term Growth Estimate	Market Cap				
NXP Semiconductors NV	NXPI	262.54	190.12	1.78	11.00	49,913.72	0.14%	0.25%	1.52%	
Kellogg Co	K	341.68	63.94	3.63	3.50	21,846.70	0.06%	0.22%	0.21%	
Broadridge Financial Solutions Inc	BR	116.77	146.21	1.75	9.00	17,073.38	0.05%	0.08%	0.43%	
Kimberly-Clark Corp	KMB	336.99	130.15	3.57	4.50	43,859.64	0.12%	0.43%	0.55%	
Kimco Realty Corp	KIM	616.66	23.53	3.23	10.50	14,509.99	0.04%	0.13%	0.42%	
Oracle Corp	ORCL	2670.45	75.97	1.68	10.00	202,873.86	0.56%	0.95%	5.62%	
Kroger Co/The	KR	735.26	46.80	1.79	6.50	34,409.98	0.10%	0.17%	0.62%	
Lennar Corp	LEN	261.37	89.88	1.67	12.50	23,492.30	0.07%	0.11%	0.81%	
Eli Lilly & Co	LLY	952.35	249.95	1.57	12.00	238,039.13	0.66%	1.03%	7.92%	
Bath & Body Works Inc	BBWI	257.72	53.37	1.50	26.00	13,754.68	0.04%	0.06%	0.99%	
Charter Communications Inc	CHTR	172.74	601.78	n/a	29.50	103,952.08	0.29%		8.50%	
Lincoln National Corp	LNC	172.46	67.42	2.67	9.00	11,626.92	0.03%	0.09%	0.29%	
Loews Corp	L	248.20	61.34	0.41	12.50	15,224.71	0.04%	0.02%	0.53%	
Lowe's Cos Inc	LOW	670.00	221.06	1.45	16.50	148,110.20	0.41%	0.59%	6.77%	
IDEX Corp	IEX	76.12	191.90	1.13	8.00	14,607.43	0.04%	0.05%	0.32%	
Marsh & McLennan Cos Inc	MMC	502.77	155.41	1.38	12.00	78,134.86	0.22%	0.30%	2.60%	
Masco Corp	MAS	239.93	56.04	2.00	10.00	13,445.45	0.04%	0.07%	0.37%	
S&P Global Inc	SPGI	354.36	375.70	0.90	10.50	133,132.68	0.37%	0.33%	3.87%	
Medtronic PLC	MDT	1342.57	104.99	2.40	8.50	140,956.00	0.39%	0.94%	3.32%	
Viartis Inc	VTRS	1209.39	11.01	4.36		0.00	0.00%	0.00%	0.00%	
CVS Health Corp	CVS	1312.51	103.65	2.12	6.00	136,041.66	0.38%	0.80%	2.26%	
DuPont de Nemours Inc	DD	512.91	77.37	1.71		0.00	0.00%	0.00%	0.00%	
Micron Technology Inc	MU	1119.78	88.86	0.45	22.50	99,503.38	0.28%	0.12%	6.20%	
Motorola Solutions Inc	MSI	168.21	220.43	1.43	7.00	37,078.31	0.10%	0.15%	0.72%	
Cboe Global Markets Inc	CBOE	106.60	117.29	1.64	12.00	12,503.35	0.03%	0.06%	0.42%	
Laboratory Corp of America Holdings	LH	93.40	271.26	n/a	6.00	25,335.68	0.07%		0.42%	
Newmont Corp	NEM	792.50	66.20	3.32	12.00	52,463.63	0.15%	0.48%	1.74%	
NIKE Inc	NKE	1276.29	136.55	0.89	27.00	174,277.13	0.48%	0.43%	13.04%	
NISource Inc	NI	405.39	28.93	3.25	10.50	11,727.79	0.03%	0.11%	0.34%	
Norfolk Southern Corp	NSC	239.78	256.52	1.93	10.00	61,507.60	0.17%	0.33%	1.70%	
Principal Financial Group Inc	PFJ	261.23	70.64	3.62	6.00	18,453.15	0.05%	0.19%	0.31%	
Eversource Energy	ES	344.44	81.80	3.12	5.50	28,175.19	0.08%	0.24%	0.43%	
Northrop Grumman Corp	NOC	156.10	442.14	1.42	8.50	69,018.94	0.19%	0.27%	1.63%	
Wells Fargo & Co	WFC	3814.56	53.37	1.87	5.50	203,582.91	0.56%	1.06%	3.10%	
Nucor Corp	NUE	269.13	131.62	1.52	12.00	35,422.23	0.10%	0.15%	1.18%	
PVH Corp	PVH	69.98	97.89	0.15	14.00	6,850.15	0.02%	0.00%	0.27%	
Occidental Petroleum Corp	OXY	934.06	43.73	1.19	30.50	40,846.62	0.11%	0.13%	3.45%	
Omnicom Group Inc	OMC	208.99	83.89	3.34	6.00	17,532.34	0.05%	0.16%	0.29%	
ONEOK Inc	OKE	445.94	65.30	5.73	12.00	29,119.69	0.08%	0.46%	0.97%	
Raymond James Financial Inc	RJF	207.60	109.65	1.24	10.50	22,763.56	0.06%	0.08%	0.66%	
Parker-Hannifin Corp	PH	128.48	296.39	1.39	13.50	38,079.59	0.11%	0.15%	1.42%	
Rollins Inc	ROL	492.09	32.63	1.23	10.50	16,056.77	0.04%	0.05%	0.47%	
PPL Corp	PPL	735.36	26.17	3.06		0.00	0.00%	0.00%	0.00%	
ConocoPhillips	COP	1299.53	94.86	1.94	16.50	123,273.13	0.34%	0.66%	5.64%	
PulteGroup Inc	PHM	248.65	49.66	1.21	13.00	12,348.01	0.03%	0.04%	0.44%	
Pinnacle West Capital Corp	PNW	112.93	70.83	4.80	0.00	7,998.97	0.02%	0.11%	0.00%	
PNC Financial Services Group Inc/The	PNC	418.46	199.25	2.51	11.50	83,377.16	0.23%	0.58%	2.66%	
PPG Industries Inc	PPG	236.00	133.45	1.77	10.00	31,494.07	0.09%	0.15%	0.87%	
Progressive Corp/The	PGR	584.85	105.93	0.38	4.50	61,953.05	0.17%	0.06%	0.77%	
Public Service Enterprise Group Inc	PEG	502.08	64.83	3.33	4.00	32,549.72	0.09%	0.30%	0.36%	
Robert Half International Inc	RHI	110.69	120.29	1.43	7.50	13,314.42	0.04%	0.05%	0.28%	
Edison International	EIX	380.70	63.42	4.42		0.00	0.00%	0.00%	0.00%	
Schlumberger NV	SLB	1413.02	39.24	1.27	11.50	55,446.87	0.15%	0.20%	1.77%	
Charles Schwab Corp/The	SCHW	1814.62	84.46	0.95	7.00	153,262.89	0.42%	0.40%	2.97%	
Sherwin-Williams Co/The	SHW	260.37	263.13	0.91	10.50	68,512.21	0.19%	0.17%	1.99%	
West Pharmaceutical Services Inc	WST	74.28	387.08	0.19	17.00	28,753.08	0.08%	0.01%	1.35%	
J M Smucker Co/The	SJM	108.36	134.75	2.94	4.00	14,601.91	0.04%	0.12%	0.16%	
Snap-on Inc	SNA	53.44	210.18	2.70	4.50	11,231.81	0.03%	0.08%	0.14%	
AMETEK Inc	AME	231.70	129.79	0.68	9.00	30,072.47	0.08%	0.06%	0.75%	
Southern Co/The	SO	1059.80	64.77	4.08	5.50	68,643.51	0.19%	0.78%	1.05%	
Truist Financial Corp	TFC	1328.12	62.22	3.09	7.00	82,635.63	0.23%	0.71%	1.60%	
Southwest Airlines Co	LUV	592.34	43.80	n/a	29.50	25,944.58	0.07%		2.12%	
W R Berkley Corp	WRB	176.79	90.30	0.58	17.50	15,964.23	0.04%	0.03%	0.77%	
Stanley Black & Decker Inc	SWK	163.35	162.70	1.94	6.00	26,577.37	0.07%	0.14%	0.44%	
Public Storage	PSA	175.46	355.02	2.25	6.50	62,292.52	0.17%	0.39%	1.12%	
Arista Networks Inc	ANET	307.77	122.73	n/a	4.50	37,772.24	0.10%		0.47%	
Sysco Corp	SY	507.45	87.10	2.16	17.50	44,198.63	0.12%	0.26%	2.14%	
Corteva Inc	CTVA	726.53	52.03	1.08		0.00	0.00%	0.00%	0.00%	
Texas Instruments Inc	TXN	923.55	169.99	2.71	9.00	156,993.75	0.44%	1.18%	3.92%	
Textron Inc	TXT	216.68	73.13	0.11	8.50	15,845.95	0.04%	0.00%	0.37%	
Thermo Fisher Scientific Inc	TMO	391.19	544.00	0.22	15.50	212,808.45	0.59%	0.13%	9.14%	
TJX Cos Inc/The	TJX	1192.88	66.10	1.79	20.00	78,849.24	0.22%	0.39%	4.37%	
Globe Life Inc	GL	99.34	100.96	0.78	8.00	10,029.16	0.03%	0.02%	0.22%	
Johnson Controls International plc	JCI	702.63	64.96	2.09	14.00	45,642.65	0.13%	0.26%	1.77%	
Ulta Beauty Inc	ULTA	54.12	374.50	n/a	15.50	20,267.94	0.06%		0.87%	
Union Pacific Corp	UNP	636.90	245.95	1.92	9.00	156,645.31	0.43%	0.83%	3.91%	
Keysight Technologies Inc	KEYS	180.80	157.37	n/a	13.00	28,452.50	0.08%		1.02%	
UnitedHealth Group Inc	UNH	940.90	475.87	1.22	12.00	447,745.61	1.24%	1.51%	14.89%	
Marathon Oil Corp	MRO	730.77	22.56	1.24		0.00	0.00%	0.00%	0.00%	
Bio-Rad Laboratories Inc	BIO	24.86	625.96	n/a	9.50	15,561.99	0.04%		0.41%	
Ventas Inc	VTR	399.50	54.00	3.33	4.50	21,572.78	0.06%	0.20%	0.27%	
VF Corp	VFC	388.90	58.02	3.45	9.50	22,564.09	0.06%	0.22%	0.59%	

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VALUE LINE GROWTH RATES

Name	Ticker	Shares Outst'g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Vornado Realty Trust	VNO	191.72	43.28	4.90	-22.50	8,297.81	0.02%	0.11%	-0.52%
Vulcan Materials Co	VMC	132.79	181.45	0.88	10.00	24,095.11	0.07%	0.06%	0.67%
Weyerhaeuser Co	WY	746.33	38.88	1.85	22.00	29,017.35	0.08%	0.15%	1.77%
Whirlpool Corp	WHR	58.61	201.27	3.48	9.50	11,796.64	0.03%	0.11%	0.31%
Williams Cos Inc/The	WMB	1215.59	31.28	5.43	10.00	38,023.75	0.11%	0.57%	1.05%
Constellation Energy Corp	CEG	326.00	45.98	1.23		0.00	0.00%	0.00%	0.00%
WEC Energy Group Inc	WEC	315.44	90.88	3.20	6.50	28,666.73	0.08%	0.25%	0.52%
Adobe Inc	ADBE	471.70	467.68	n/a	15.50	220,604.66	0.61%		9.48%
AES Corp/The	AES	667.40	21.23	2.98	24.00	14,168.80	0.04%	0.12%	0.94%
Amgen Inc	AMGN	557.03	226.48	3.43	5.50	128,155.93	0.35%	1.20%	1.92%
Apple Inc	AAPL	16319.44	165.12	0.53	13.00	2,694,666.10	7.47%	3.98%	97.07%
Autodesk Inc	ADSK	219.97	220.23	n/a	18.00	48,444.65	0.13%		2.42%
Cintas Corp	CTAS	103.73	375.32	1.01	13.50	38,933.07	0.11%	0.11%	1.46%
Comcast Corp	CMCSA	4523.79	46.76	2.31	11.00	211,532.23	0.59%	1.35%	6.45%
Molson Coors Beverage Co	TAP	200.60	52.18	2.91	41.00	10,467.26	0.03%	0.08%	1.19%
KLA Corp	KLAC	150.72	348.50	1.21	21.00	52,524.18	0.15%	0.18%	3.06%
Marrriott International Inc/MD	MAR	326.31	170.14	n/a	17.50	55,518.55	0.15%		2.69%
McCormick & Co Inc/MD	MKC	249.74	95.17	1.56	6.00	23,768.04	0.07%	0.10%	0.40%
PACCAR Inc	PCAR	347.57	91.81	1.48	5.00	31,910.59	0.09%	0.13%	0.44%
Costco Wholesale Corp	COST	443.43	519.25	0.61	10.50	230,252.07	0.64%	0.39%	6.70%
First Republic Bank/CA	FRC	179.06	173.26	0.51	13.50	31,023.94	0.09%	0.04%	1.16%
Stryker Corp	SYK	377.55	263.35	1.06	8.50	99,426.48	0.28%	0.29%	2.34%
Tyson Foods Inc	TSN	292.46	92.66	1.99	6.00	27,098.88	0.08%	0.15%	0.45%
Lamb Weston Holdings Inc	LW	145.20	66.43	1.48	6.00	9,645.90	0.03%	0.04%	0.16%
Applied Materials Inc	AMAT	883.40	134.20	0.72	16.50	118,551.61	0.33%	0.23%	5.42%
American Airlines Group Inc	AAL	649.16	17.25	n/a		0.00	0.00%		0.00%
Cardinal Health Inc	CAH	277.06	54.01	3.63	5.00	14,964.06	0.04%	0.15%	0.21%
Cerner Corp	CERN	293.34	93.25	1.16	9.50	27,354.33	0.08%	0.09%	0.72%
Cincinnati Financial Corp	CINF	160.43	122.79	2.25	15.00	19,699.69	0.05%	0.12%	0.82%
Paramount Global	PARA	607.88	30.61	3.14	7.00	18,607.11	0.05%	0.16%	0.36%
DR Horton Inc	DHI	354.36	85.40	1.05	11.00	30,262.17	0.08%	0.09%	0.92%
Electronic Arts Inc	EA	281.22	130.09	0.52	10.50	36,584.17	0.10%	0.05%	1.06%
Expeditors International of Washington Inc	EXPD	169.40	103.36	1.12	11.50	17,509.60	0.05%	0.05%	0.56%
Fastenal Co	FAST	575.55	51.46	2.41	9.00	29,618.01	0.08%	0.20%	0.74%
M&T Bank Corp	MTB	129.03	182.23	2.63	8.00	23,513.87	0.07%	0.17%	0.52%
Xcel Energy Inc	XEL	544.21	67.33	2.90	6.00	36,641.93	0.10%	0.29%	0.61%
Fiserv Inc	FISV	652.20	97.67	n/a	13.00	63,700.08	0.18%		2.29%
Fifth Third Bancorp	FITB	683.67	47.84	2.51	11.50	32,706.82	0.09%	0.23%	1.04%
Gilead Sciences Inc	GILD	1253.89	60.40	4.83	3.50	75,734.77	0.21%	1.01%	0.73%
Hasbro Inc	HAS	138.96	97.05	2.89	11.50	13,486.07	0.04%	0.11%	0.43%
Huntington Bancshares Inc/OH	HBAN	1438.09	15.52	3.99	12.00	22,319.13	0.06%	0.25%	0.74%
Welltower Inc	WELL	447.28	83.29	2.93	-1.50	37,253.95	0.10%	0.30%	-0.15%
Biogen Inc	BIB	146.96	211.01	n/a	7.00	31,010.66	0.09%		0.60%
Northern Trust Corp	NTRS	207.90	113.90	2.46	8.00	23,679.58	0.07%	0.16%	0.52%
Packaging Corp of America	PKG	93.53	147.19	2.72	9.00	13,767.27	0.04%	0.10%	0.34%
Paychex Inc	PAYX	360.76	119.06	2.22	9.00	42,951.73	0.12%	0.26%	1.07%
People's United Financial Inc	PBCT	427.92	21.08	3.46	2.50	9,020.55	0.02%	0.09%	0.06%
QUALCOMM Inc	QCOM	1127.00	171.99	1.58	18.50	193,832.73	0.54%	0.85%	9.94%
Roper Technologies Inc	ROP	105.60	448.22	0.55	8.50	47,333.38	0.13%	0.07%	1.11%
Ross Stores Inc	ROST	353.33	91.39	1.25	14.00	32,290.83	0.09%	0.11%	1.25%
IDEXX Laboratories Inc	IDXX	84.25	532.35	n/a	14.00	44,849.96	0.12%		1.74%
Starbucks Corp	SBUX	1150.30	91.79	2.14	16.50	105,586.04	0.29%	0.62%	4.83%
KeyCorp	KEY	927.76	25.07	3.11	9.50	23,258.97	0.06%	0.20%	0.61%
Fox Corp	FOXA	315.81	41.83	1.15	10.50	13,210.16	0.04%	0.04%	0.38%
Fox Corp	FOX	247.10	38.26	1.25		0.00	0.00%	0.00%	0.00%
State Street Corp	STT	366.07	85.33	2.67	8.00	31,236.50	0.09%	0.23%	0.69%
Norwegian Cruise Line Holdings Ltd	NCLH	416.89	19.49	n/a		0.00	0.00%		0.00%
US Bancorp	USB	1483.90	56.54	3.25	6.50	83,899.82	0.23%	0.76%	1.51%
A O Smith Corp	AOS	131.41	68.58	1.63	10.00	9,012.37	0.02%	0.04%	0.25%
NortonLifeLock Inc	NLOK	582.18	28.98	1.73	11.00	16,871.61	0.05%	0.08%	0.51%
T Rowe Price Group Inc	TROW	228.09	144.56	3.32	12.00	32,973.12	0.09%	0.30%	1.10%
Waste Management Inc	WM	414.59	144.40	1.59	7.50	59,866.36	0.17%	0.26%	1.24%
Constellation Brands Inc	STZ	164.34	215.62	1.41	5.50	35,434.78	0.10%	0.14%	0.54%
DENTSPLY SIRONA Inc	XRAY	218.61	54.14	0.92	12.00	11,835.38	0.03%	0.03%	0.39%
Zions Bancorp NA	ZION	151.57	70.89	2.14	7.50	10,745.08	0.03%	0.06%	0.22%
Alaska Air Group Inc	ALK	125.91	56.14	n/a		0.00	0.00%		0.00%
Invesco Ltd	IVZ	460.75	21.24	3.20	15.50	9,786.35	0.03%	0.09%	0.42%
Linde PLC	LIN	508.33	293.24	1.60		0.00	0.00%	0.00%	0.00%
Intuit Inc	INTU	283.17	474.37	0.57	18.50	134,325.93	0.37%	0.21%	6.89%
Morgan Stanley	MS	1781.30	90.74	3.09	10.50	161,635.07	0.45%	1.38%	4.70%
Microchip Technology Inc	MCHP	555.99	70.33	1.44	10.50	39,102.85	0.11%	0.16%	1.14%
Chubb Ltd	CB	426.23	203.64	1.57	12.50	86,797.27	0.24%	0.38%	3.01%
Hologic Inc	HOLX	249.98	71.17	n/a	25.00	17,791.36	0.05%		1.23%
Citizens Financial Group Inc	CFG	422.14	52.42	2.98	8.50	22,128.68	0.06%	0.18%	0.52%
O'Reilly Automotive Inc	ORLY	66.60	649.24	n/a	13.00	43,240.03	0.12%		1.56%
Allstate Corp/The	ALL	278.35	122.36	2.78	5.00	34,058.42	0.09%	0.26%	0.47%
Equity Residential	EQR	375.92	85.30	2.83	2.00	32,065.72	0.09%	0.25%	0.18%
BorgWarner Inc	BWA	239.97	41.01	1.66	8.00	9,841.21	0.03%	0.05%	0.22%
Organon & Co	OGN	253.55	37.33	3.00		0.00	0.00%	0.00%	0.00%
Host Hotels & Resorts Inc	HST	714.15	18.27	0.16	10.00	13,047.52	0.04%	0.01%	0.36%
Incyte Corp	INCY	221.33	68.30	n/a	25.50	15,116.50	0.04%		1.07%
Simon Property Group Inc	SPG	342.85	137.56	4.80	1.50	47,162.31	0.13%	0.63%	0.20%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VALUE LINE GROWTH RATES

Name	Ticker	Shares Out/g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Eastman Chemical Co	EMN	128.97	118.47	2.57	8.00	15,278.84	0.04%	0.11%	0.34%
Twitter Inc	TWTR	800.64	35.55	n/a	39.00	28,462.79	0.08%		3.08%
AvalonBay Communities Inc	AVB	139.75	238.59	2.67	1.50	33,343.43	0.09%	0.25%	0.14%
Prudential Financial Inc	PRU	376.30	111.66	4.30	4.50	42,017.66	0.12%	0.50%	0.52%
United Parcel Service Inc	UPS	732.55	210.42	2.89	11.50	154,144.01	0.43%	1.23%	4.91%
Walgreens Boots Alliance Inc	WBA	863.27	46.09	4.14	7.50	39,788.21	0.11%	0.46%	0.83%
STERIS PLC	STE	100.13	240.00	0.72	11.50	24,030.48	0.07%	0.05%	0.77%
McKesson Corp	MCK	149.80	274.96	0.68	10.00	41,188.46	0.11%	0.08%	1.14%
Lockheed Martin Corp	LMT	272.33	433.80	2.58	6.50	118,135.45	0.33%	0.85%	2.13%
AmerisourceBergen Corp	ABC	209.14	142.53	1.29	6.50	29,808.30	0.08%	0.11%	0.54%
Capital One Financial Corp	COF	413.66	153.27	1.57		0.00	0.00%	0.00%	0.00%
Waters Corp	WAT	60.52	316.73	n/a	6.00	19,167.23	0.05%		0.32%
Nordson Corp	NDSN	57.94	226.49	0.90	13.50	13,123.06	0.04%	0.03%	0.49%
Dollar Tree Inc	DLTR	224.96	142.08	n/a	10.00	31,961.75	0.09%		0.89%
Darden Restaurants Inc	DRI	127.72	145.22	3.03	15.50	18,548.08	0.05%	0.16%	0.80%
Match Group Inc	MTCH	285.15	111.49	n/a	18.50	31,791.15	0.09%		1.63%
Dominos Pizza Inc	DPZ	36.39	432.21	0.87	16.50	15,726.83	0.04%	0.04%	0.72%
NVR Inc	NVR	3.38	4958.44	n/a	9.00	16,774.40	0.05%		0.42%
NetApp Inc	NTAP	222.28	78.38	2.55	8.00	17,422.15	0.05%	0.12%	0.39%
Citrix Systems Inc	CTXS	125.55	102.50	1.44	8.00	12,868.77	0.04%	0.05%	0.29%
DXC Technology Co	DXC	244.48	34.03	n/a	6.00	8,319.59	0.02%		0.14%
Old Dominion Freight Line Inc	ODFL	114.86	314.03	0.38	12.00	36,070.74	0.10%	0.04%	1.20%
DaVita Inc	DVA	96.30	112.77	n/a	16.00	10,859.75	0.03%		0.48%
Hartford Financial Services Group Inc/The	HIG	331.65	69.48	2.22	6.50	23,042.83	0.06%	0.14%	0.42%
Iron Mountain Inc	IRM	289.83	49.18	5.03	10.00	14,253.84	0.04%	0.20%	0.39%
Estee Lauder Cos Inc/The	EL	232.42	296.33	0.81	11.50	68,874.20	0.19%	0.15%	2.19%
Cadence Design Systems Inc	CDNS	277.34	151.43	n/a	12.00	41,996.99	0.12%		1.40%
Tyler Technologies Inc	TYL	41.35	428.26	n/a	14.00	17,708.12	0.05%		0.69%
Universal Health Services Inc	UHS	67.55	143.93	0.56	11.00	9,722.76	0.03%	0.01%	0.30%
Skyworks Solutions Inc	SWKS	164.01	138.17	1.62	16.00	22,660.71	0.06%	0.10%	1.00%
Quest Diagnostics Inc	DGX	119.46	131.27	2.01	7.50	15,680.86	0.04%	0.09%	0.33%
Activision Blizzard Inc	ATVI	779.24	81.50	0.58	15.00	63,507.65	0.18%	0.10%	2.64%
Rockwell Automation Inc	ROK	116.20	266.58	1.68	10.00	30,975.53	0.09%	0.14%	0.86%
Kraft Heinz Co/The	KHC	1223.74	39.22	4.08	4.00	47,995.08	0.13%	0.54%	0.53%
American Tower Corp	AMT	455.89	226.87	2.45	9.00	103,426.63	0.29%	0.70%	2.58%
Regeneron Pharmaceuticals Inc	REGN	106.72	618.36	n/a	12.50	65,988.91	0.18%		2.29%
Amazon.com Inc	AMZN	508.84	3071.26	n/a	26.50	1,562,792.22	4.33%		114.76%
Jack Henry & Associates Inc	JKHY	72.83	176.80	1.11	10.50	12,875.46	0.04%	0.04%	0.37%
Ralph Lauren Corp	RL	46.29	132.04	2.08	12.50	6,111.60	0.02%	0.04%	0.21%
Boston Properties Inc	BXP	156.68	122.31	3.20	-2.00	19,163.04	0.05%	0.17%	-0.11%
Amphenol Corp	APH	598.94	76.01	1.05	12.00	45,525.43	0.13%	0.13%	1.51%
Howmet Aerospace Inc	HWM	418.91	35.92	0.22	12.50	15,047.07	0.04%	0.01%	0.52%
Pioneer Natural Resources Co	PXD	242.88	239.60	6.31	23.00	58,195.01	0.16%	1.02%	3.71%
Valero Energy Corp	VLO	409.30	83.51	4.69	11.00	34,180.98	0.09%	0.44%	1.04%
Synopsys Inc	SNPS	153.10	312.39	n/a	14.00	47,826.60	0.13%		1.86%
Etsy Inc	ETSY	127.03	154.89	n/a	29.00	19,676.14	0.05%		1.58%
CH Robinson Worldwide Inc	CHRW	128.80	96.68	2.28	9.00	12,452.29	0.03%	0.08%	0.31%
Accenture PLC	ACN	658.33	316.02	1.23	12.00	208,046.39	0.58%	0.71%	6.92%
TransDigm Group Inc	TDG	55.46	666.59	n/a	16.50	36,970.41	0.10%		1.69%
Yum! Brands Inc	YUM	288.98	122.58	1.86	10.50	35,423.29	0.10%	0.18%	1.03%
Prologis Inc	PLD	739.75	145.85	2.17	8.50	107,891.81	0.30%	0.65%	2.54%
FirstEnergy Corp	FE	570.34	41.85	3.73	10.00	23,868.90	0.07%	0.25%	0.66%
VeriSign Inc	VRSN	110.17	213.72	n/a	8.50	23,544.89	0.07%		0.55%
Quanta Services Inc	PWR	142.69	108.94	0.26	12.50	15,544.65	0.04%	0.01%	0.54%
Henry Schein Inc	HSIC	137.17	86.38	n/a	7.00	11,849.00	0.03%		0.23%
Ameren Corp	AEE	255.41	85.95	2.75	6.50	21,952.49	0.06%	0.17%	0.40%
ANSYS Inc	ANSS	87.23	324.19	n/a	8.50	28,279.09	0.08%		0.67%
FactSet Research Systems Inc	FDS	37.80	406.09	0.81	9.50	15,348.98	0.04%	0.03%	0.40%
NVIDIA Corp	NVDA	2500.00	243.85	0.07	20.00	609,625.00	1.69%	0.11%	33.79%
Sealed Air Corp	SEE	148.16	67.13	1.19	13.50	9,945.85	0.03%	0.03%	0.37%
Cognizant Technology Solutions Corp	CTSH	524.54	86.13	1.25	7.00	45,178.20	0.13%	0.16%	0.88%
SVB Financial Group	SIVB	58.75	606.00	n/a	5.00	35,601.29	0.10%		0.49%
Intuitive Surgical Inc	ISRG	357.74	290.33	n/a	13.00	103,863.82	0.29%		3.74%
Take-Two Interactive Software Inc	TTWO	115.42	162.00	n/a	15.00	18,697.39	0.05%		0.78%
Republic Services Inc	RSG	316.43	120.28	1.53	10.50	38,060.32	0.11%	0.16%	1.11%
eBay Inc	EBAY	587.53	54.59	1.61	16.50	32,073.21	0.09%	0.14%	1.47%
Goldman Sachs Group Inc/The	GS	337.92	341.29	2.34	8.50	115,329.74	0.32%	0.75%	2.72%
SBA Communications Corp	SBAC	108.78	303.39	0.94	42.50	33,003.07	0.09%	0.09%	3.89%
Sempra Energy	SRE	315.07	144.22	3.18	10.00	45,439.54	0.13%	0.40%	1.26%
Moody's Corp	MCO	185.20	322.03	0.87	9.00	59,639.96	0.17%	0.14%	1.49%
Booking Holdings Inc	BKNG	40.89	2172.25	n/a	14.00	88,818.96	0.25%		3.45%
F5 Inc	FFIV	60.74	200.85	n/a	7.00	12,199.23	0.03%		0.24%
Akamai Technologies Inc	AKAM	160.35	108.26	n/a	9.50	17,359.17	0.05%		0.46%
Charles River Laboratories International Inc	CRL	50.49	291.16	n/a	6.50	14,699.50	0.04%		0.26%
MarketAxess Holdings Inc	MKTX	37.84	381.43	0.73	14.00	14,431.40	0.04%	0.03%	0.56%
Devon Energy Corp	DVN	664.20	59.55	6.72	29.50	39,553.11	0.11%	0.74%	3.23%
Alphabet Inc	GOOGL	300.76	2701.14	n/a		0.00	0.00%		0.00%
Bio-Techne Corp	TECH	39.29	419.41	0.31	17.50	16,477.78	0.05%	0.01%	0.80%
Teleflex Inc	TFX	46.85	336.31	0.40	15.00	15,754.44	0.04%	0.02%	0.65%
Netflix Inc	NFLX	443.96	394.52	n/a	23.50	175,152.28	0.49%		11.41%
Allegion plc	ALLE	88.23	114.52	1.43	9.50	10,104.10	0.03%	0.04%	0.27%
Agilent Technologies Inc	A	302.00	130.36	0.64	11.50	39,368.72	0.11%	0.07%	1.25%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VALUE LINE GROWTH RATES

Name	Ticker	Shares Out/g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted
									Long-Term Growth
Anthem Inc	ANTM	241.30	451.85	1.13	12.50	109,033.21	0.30%	0.34%	3.78%
Trimble Inc	TRMB	251.22	69.75	n/a	14.50	17,522.32	0.05%		0.70%
CME Group Inc	CME	359.40	236.53	1.69	8.50	85,007.70	0.24%	0.40%	2.00%
Juniper Networks Inc	JNPR	322.76	33.79	2.49	7.00	10,906.03	0.03%	0.08%	0.21%
BlackRock Inc	BLK	162.04	743.89	2.62	11.00	113,102.52	0.31%	0.82%	3.45%
DTE Energy Co	DTE	193.75	121.59	2.91	1.00	23,558.31	0.07%	0.19%	0.07%
Nasdaq Inc	NDAQ	164.41	171.15	1.26	6.50	28,139.11	0.08%	0.10%	0.51%
Celanese Corp	CE	108.03	139.28	1.95	6.50	15,046.28	0.04%	0.08%	0.27%
Philip Morris International Inc	PM	1549.83	101.07	4.95	7.00	156,641.12	0.43%	2.15%	3.04%
salesforce.com Inc	CRM	985.00	210.53	n/a	20.00	207,372.05	0.57%		11.49%
Ingersoll Rand Inc	IR	407.97	50.52	0.16		0.00	0.00%	0.00%	0.00%
Huntington Ingalls Industries Inc	HII	39.99	204.40	2.31	10.00	8,173.75	0.02%	0.05%	0.23%
MetLife Inc	MET	825.08	67.55	2.84	6.50	55,734.02	0.15%	0.44%	1.00%
Under Armour Inc	UA	253.22	15.63	n/a		0.00	0.00%		0.00%
Tapestry Inc	TPR	263.99	40.90	2.44	10.00	10,797.19	0.03%	0.07%	0.30%
CSX Corp	CSX	2193.39	33.91	1.18	10.00	74,377.82	0.21%	0.24%	2.06%
Edwards Lifesciences Corp	EW	623.21	112.37	n/a	12.50	70,029.77	0.19%		2.43%
Ameriprise Financial Inc	AMP	110.75	299.79	1.51	13.50	33,202.04	0.09%	0.14%	1.24%
Zebra Technologies Corp	ZBRA	53.08	413.34	n/a	10.50	21,940.09	0.06%		0.64%
Zimmer Biomet Holdings Inc	ZBH	209.18	123.39	0.78	7.00	25,810.33	0.07%	0.06%	0.50%
CBRE Group Inc	CBRE	334.67	96.85	n/a	10.00	32,412.40	0.09%		0.90%
Mastercard Inc	MA	969.73	360.82	0.54	13.00	349,897.62	0.97%	0.53%	12.60%
CarMax Inc	KMX	161.68	109.33	n/a	13.50	17,676.47	0.05%		0.66%
Intercontinental Exchange Inc	ICE	561.85	128.12	1.19	8.00	71,984.48	0.20%	0.24%	1.60%
Fidelity National Information Services Inc	FIS	609.59	95.23	1.97	28.00	58,051.35	0.16%	0.32%	4.50%
Chipotle Mexican Grill Inc	CMG	28.03	1523.35	n/a	20.00	42,702.55	0.12%		2.37%
Wynn Resorts Ltd	WYNN	115.90	86.52	n/a	27.00	10,027.58	0.03%		0.75%
Live Nation Entertainment Inc	LYV	224.63	120.82	n/a		0.00	0.00%		0.00%
Assurant Inc	AIZ	55.16	169.71	1.60	15.50	9,361.54	0.03%	0.04%	0.40%
NRG Energy Inc	NRG	242.15	37.84	3.70	-1.50	9,163.07	0.03%	0.09%	-0.04%
Regions Financial Corp	RF	937.15	24.19	2.81	10.50	22,669.56	0.06%	0.18%	0.66%
Monster Beverage Corp	MNST	529.36	84.40	n/a	13.00	44,677.90	0.12%		1.61%
Mosaic Co/The	MOS	368.31	52.43	0.86	56.50	19,310.44	0.05%	0.05%	3.02%
Baker Hughes Co	BKR	953.34	29.38	2.45		0.00	0.00%	0.00%	0.00%
Expedia Group Inc	EXPE	150.23	196.11	n/a		0.00	0.00%		0.00%
Evergy Inc	EVRG	226.99	62.41	3.67	8.00	14,166.63	0.04%	0.14%	0.31%
Discovery Inc	DISCA	169.58	28.05	n/a	13.50	4,756.72	0.01%		0.18%
CF Industries Holdings Inc	CF	207.31	81.19	1.48	19.50	16,831.09	0.05%	0.07%	0.91%
Leidos Holdings Inc	LDOS	140.51	101.84	1.41	8.50	14,309.03	0.04%	0.06%	0.34%
APA Corp	APA	346.78	35.63	1.40		0.00	0.00%	0.00%	0.00%
Alphabet Inc	GOOG	315.64	2697.82	n/a	23.50	851,537.21	2.36%		55.45%
TE Connectivity Ltd	TEL	325.58	142.43	1.57	10.00	46,371.65	0.13%	0.20%	1.28%
Cooper Cos Inc/The	COO	49.30	409.02	0.01	19.00	20,163.05	0.06%	0.00%	1.06%
Discover Financial Services	DFS	284.90	123.44	1.62	16.00	35,168.55	0.10%	0.16%	1.56%
Visa Inc	V	1658.42	216.12	0.69	12.00	358,418.59	0.99%	0.69%	11.92%
Mid-America Apartment Communities Inc	MAA	115.34	204.61	2.13	9.00	23,599.92	0.07%	0.14%	0.59%
Xylem Inc/NY	XYL	179.90	88.95	1.35	6.50	16,002.19	0.04%	0.06%	0.29%
Marathon Petroleum Corp	MPC	565.21	77.87	2.98		0.00	0.00%	0.00%	0.00%
Tractor Supply Co	TSCO	112.77	203.79	1.81	11.00	22,981.81	0.06%	0.11%	0.70%
Advanced Micro Devices Inc	AMD	1627.37	123.34	n/a	30.00	200,719.20	0.56%		16.69%
ResMed Inc	RMD	146.23	246.75	0.68	8.50	36,083.24	0.10%	0.07%	0.85%
Mettler-Toledo International Inc	MTD	22.81	1408.74	n/a	13.50	32,127.72	0.09%		1.20%
Copart Inc	CPRT	237.19	122.88	n/a	12.00	29,145.66	0.08%		0.97%
Albemarle Corp	ALB	117.04	195.89	0.81	6.50	22,926.38	0.06%	0.05%	0.41%
Fortinet Inc	FTNT	160.82	344.52	n/a	24.00	55,403.98	0.15%		3.68%
Moderna Inc	MRNA	402.87	153.60	n/a		0.00	0.00%		0.00%
Essex Property Trust Inc	ESS	65.28	317.17	2.77	-0.50	20,704.54	0.06%	0.16%	-0.03%
Realty Income Corp	O	591.32	66.09	4.48	3.50	39,080.40	0.11%	0.48%	0.38%
Westrock Co	WRK	263.21	45.27	2.21	18.50	11,915.70	0.03%	0.07%	0.61%
IHS Markit Ltd	INFO	#N/A	#N/A	#N/A	n/a	10.50	0.00%		0.00%
Westinghouse Air Brake Technologies Corp	WAB	185.29	92.82	0.65	9.00	17,198.62	0.05%	0.03%	0.43%
Pool Corp	POOL	40.17	458.58	0.70	17.00	18,420.24	0.05%	0.04%	0.87%
Western Digital Corp	WDC	312.92	50.94	n/a	9.00	15,940.04	0.04%		0.40%
PepsiCo Inc	PEP	1383.45	163.74	2.63	6.50	226,526.27	0.63%	1.65%	4.08%
Diamondback Energy Inc	FANG	177.42	138.10	1.74		0.00	0.00%	0.00%	0.00%
ServiceNow Inc	NOW	200.00	579.92	n/a	44.50	115,984.00	0.32%		14.30%
Church & Dwight Co Inc	CHD	242.69	97.85	1.07	8.00	23,747.41	0.07%	0.07%	0.53%
Duke Realty Corp	DRE	382.77	53.00	2.11	-2.00	20,286.70	0.06%	0.12%	-0.11%
Federal Realty Investment Trust	FRT	78.62	117.58	3.64	2.00	9,243.79	0.03%	0.09%	0.05%
MGM Resorts International	MGM	439.17	44.29	0.02	25.00	19,450.93	0.05%	0.00%	1.35%
American Electric Power Co Inc	AEP	504.21	90.65	3.44	6.50	45,706.82	0.13%	0.44%	0.82%
SolarEdge Technologies Inc	SEDG	52.82	319.42	n/a	19.50	16,871.44	0.05%		0.91%
PTC Inc	PTC	116.95	111.28	n/a		0.00	0.00%		0.00%
JB Hunt Transport Services Inc	JBHT	104.85	202.93	0.79	11.00	21,277.21	0.06%	0.05%	0.65%
Lam Research Corp	LRCX	139.50	561.35	1.07	17.50	78,308.33	0.22%	0.23%	3.80%
Mohawk Industries Inc	MHK	65.07	140.78	n/a	10.50	9,160.70	0.03%		0.27%
Pentair PLC	PNR	165.10	57.91	1.45	14.00	9,560.88	0.03%	0.04%	0.37%
Vertex Pharmaceuticals Inc	VRTX	254.58	230.02	n/a	18.50	58,557.80	0.16%		3.00%
Amcor PLC	AMCR	1513.73	11.63	4.13	15.00	17,604.65	0.05%	0.20%	0.73%
Meta Platforms Inc	FB	2309.08	211.03	n/a	21.50	487,285.15	1.35%		29.03%
T-Mobile US Inc	TMUS	1249.29	123.21	n/a	8.50	153,925.02	0.43%		3.63%
United Rentals Inc	URI	72.42	321.62	n/a	12.50	23,292.36	0.06%		0.81%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VALUE LINE GROWTH RATES

Name	Ticker	Shares Out/g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
ABIOMED Inc	ABMD	45.52	310.74	n/a	7.50	14,143.64	0.04%		0.29%
Honeywell International Inc	HON	685.82	189.75	2.07	11.00	130,134.16	0.36%	0.74%	3.97%
Alexandria Real Estate Equities Inc	ARE	159.94	189.40	2.43	12.00	30,293.20	0.08%	0.20%	1.01%
Delta Air Lines Inc	DAL	639.93	39.92	n/a	49.00	25,546.01	0.07%		3.47%
Seagate Technology Holdings PLC	STX	218.90	103.16	2.71	15.00	22,581.52	0.06%	0.17%	0.94%
United Airlines Holdings Inc	UAL	323.61	44.40	n/a		0.00	0.00%		0.00%
News Corp	NWS	198.48	22.43	0.89		0.00	0.00%	0.00%	0.00%
Centene Corp	CNC	582.87	82.62	n/a	10.00	48,156.39	0.13%		1.33%
Martin Marietta Materials Inc	MLM	62.40	379.40	0.64	10.50	23,672.66	0.07%	0.04%	0.69%
Teradyne Inc	TER	162.42	117.92	0.37	13.50	19,152.21	0.05%	0.02%	0.72%
PayPal Holdings Inc	PYPL	1165.01	111.93	n/a	16.00	130,399.01	0.36%		5.78%
Tesla Inc	TSLA	1033.51	870.43	n/a	51.50	899,596.37	2.49%		128.38%
DISH Network Corp	DISH	290.57	31.96	n/a	4.00	9,286.65	0.03%		0.10%
Dow Inc	DOW	735.75	58.96	4.75		0.00	0.00%	0.00%	0.00%
Penn National Gaming Inc	PENN	168.32	51.35	n/a	28.00	8,643.39	0.02%		0.67%
Everest Re Group Ltd	RE	39.27	298.22	2.08	11.00	11,711.70	0.03%	0.07%	0.36%
Teledyne Technologies Inc	TDY	47.20	429.38	n/a	14.50	20,264.59	0.06%		0.81%
News Corp	NWSA	390.87	22.32	0.90		0.00	0.00%	0.00%	0.00%
Exelon Corp	EXC	978.32	42.56	3.17		0.00	0.00%	0.00%	0.00%
Global Payments Inc	GPN	281.97	133.38	0.75	16.50	37,608.89	0.10%	0.08%	1.72%
Crown Castle International Corp	CCI	432.22	166.59	3.53	12.00	72,002.70	0.20%	0.70%	2.39%
Aptiv PLC	APTIV	270.51	129.44	n/a	21.50	35,015.33	0.10%		2.09%
Advance Auto Parts Inc	AAP	61.10	204.48	2.93	11.00	12,493.32	0.03%	0.10%	0.38%
Align Technology Inc	ALGN	78.80	511.46	n/a	17.00	40,300.49	0.11%		1.90%
Illumina Inc	ILMN	157.00	326.60	n/a	10.00	51,276.20	0.14%		1.42%
LKQ Corp	LKQ	285.01	46.95	2.13	14.00	13,381.41	0.04%	0.08%	0.52%
Nielsen Holdings PLC	NLSN	359.49	17.42	1.38		0.00	0.00%	0.00%	0.00%
Zoetis Inc	ZTS	471.97	193.65	0.67	12.00	91,397.18	0.25%	0.17%	3.04%
Zimvie Inc	ZIMV	#N/A	38.00	n/a		0.00	0.00%		0.00%
Equinix Inc	EQIX	90.72	709.73	1.75	17.00	64,387.42	0.18%	0.31%	3.03%
Digital Realty Trust Inc	DLR	284.47	134.92	3.44	8.50	38,380.56	0.11%	0.37%	0.90%
Las Vegas Sands Corp	LVS	763.99	42.86	n/a	17.00	32,744.61	0.09%		1.54%
Discovery Inc	DISCK	330.15	27.97	n/a		0.00	0.00%		0.00%

EXHIBIT JMC-5.2

CAPM ANALYSIS

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VL BETA
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Alliant Energy Corporation	LNT	2.20%	0.85	15.62%	13.43%	13.61%
Ameren Corporation	AEE	2.20%	0.80	15.62%	13.43%	12.94%
American Electric Power Company, Inc	AEP	2.20%	0.75	15.62%	13.43%	12.27%
Avista Corporation	AVA	2.20%	0.95	15.62%	13.43%	14.95%
Black Hills Corporation	BKH	2.20%	1.00	15.62%	13.43%	15.62%
CMS Energy Corporation	CMS	2.20%	0.80	15.62%	13.43%	12.94%
Consolidated Edison, Inc.	ED	2.20%	0.75	15.62%	13.43%	12.27%
Duke Energy Corporation	DUK	2.20%	0.85	15.62%	13.43%	13.61%
Edison International	EIX	2.20%	0.95	15.62%	13.43%	14.95%
Entergy Corporation	ETR	2.20%	0.95	15.62%	13.43%	14.95%
Evergy, Inc.	EVRG	2.20%	0.95	15.62%	13.43%	14.95%
Eversource Energy	ES	2.20%	0.90	15.62%	13.43%	14.28%
IDACORP, Inc.	IDA	2.20%	0.80	15.62%	13.43%	12.94%
NorthWestern Corporation	NWE	2.20%	0.95	15.62%	13.43%	14.95%
OGE Energy Corporation	OGE	2.20%	1.05	15.62%	13.43%	16.30%
Pinnacle West Capital Corporation	PNW	2.20%	0.90	15.62%	13.43%	14.28%
Portland General Electric Company	POR	2.20%	0.90	15.62%	13.43%	14.28%
Southern Company	SO	2.20%	0.95	15.62%	13.43%	14.95%
Wisconsin Energy Corporation	WEC	2.20%	0.80	15.62%	13.43%	12.94%
Xcel Energy Inc.	XEL	2.20%	0.80	15.62%	13.43%	12.94%
Mean			0.883			14.05%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Value Line, as of February 28, 2022

[3] Source: Average of JMC-5.1 S&P 500 MRP 2 & 3

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG BETA
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Alliant Energy Corporation	LNT	2.20%	0.864	15.62%	13.43%	13.80%
Ameren Corporation	AEE	2.20%	0.797	15.62%	13.43%	12.90%
American Electric Power Company, Inc	AEP	2.20%	0.836	15.62%	13.43%	13.42%
Avista Corporation	AVA	2.20%	0.817	15.62%	13.43%	13.17%
Black Hills Corporation	BKH	2.20%	0.986	15.62%	13.43%	15.44%
CMS Energy Corporation	CMS	2.20%	0.811	15.62%	13.43%	13.09%
Consolidated Edison, Inc.	ED	2.20%	0.692	15.62%	13.43%	11.49%
Duke Energy Corporation	DUK	2.20%	0.804	15.62%	13.43%	13.00%
Edison International	EIX	2.20%	0.926	15.62%	13.43%	14.64%
Entergy Corporation	ETR	2.20%	0.960	15.62%	13.43%	15.08%
Energy, Inc.	EVRG	2.20%	0.876	15.62%	13.43%	13.96%
Eversource Energy	ES	2.20%	0.893	15.62%	13.43%	14.19%
IDACORP, Inc.	IDA	2.20%	0.851	15.62%	13.43%	13.62%
NorthWestern Corporation	NWE	2.20%	1.009	15.62%	13.43%	15.74%
OGE Energy Corporation	OGE	2.20%	1.036	15.62%	13.43%	16.11%
Pinnacle West Capital Corporation	PNW	2.20%	0.911	15.62%	13.43%	14.43%
Portland General Electric Company	POR	2.20%	0.869	15.62%	13.43%	13.86%
Southern Company	SO	2.20%	0.901	15.62%	13.43%	14.29%
Wisconsin Energy Corporation	WEC	2.20%	0.807	15.62%	13.43%	13.03%
Xcel Energy Inc.	XEL	2.20%	0.824	15.62%	13.43%	13.27%
Mean			0.873			13.93%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 5-Year Betas as of February 28, 2022

[3] Source: Average of JMC-5.1 S&P 500 MRP 2 & 3

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & VL BETA
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Alliant Energy Corporation	LNT	3.40%	0.85	15.62%	12.22%	13.79%
Ameren Corporation	AEE	3.40%	0.80	15.62%	12.22%	13.18%
American Electric Power Company, Inc	AEP	3.40%	0.75	15.62%	12.22%	12.57%
Avista Corporation	AVA	3.40%	0.95	15.62%	12.22%	15.01%
Black Hills Corporation	BKH	3.40%	1.00	15.62%	12.22%	15.62%
CMS Energy Corporation	CMS	3.40%	0.80	15.62%	12.22%	13.18%
Consolidated Edison, Inc.	ED	3.40%	0.75	15.62%	12.22%	12.57%
Duke Energy Corporation	DUK	3.40%	0.85	15.62%	12.22%	13.79%
Edison International	EIX	3.40%	0.95	15.62%	12.22%	15.01%
Entergy Corporation	ETR	3.40%	0.95	15.62%	12.22%	15.01%
Energy, Inc.	EVRG	3.40%	0.95	15.62%	12.22%	15.01%
Eversource Energy	ES	3.40%	0.90	15.62%	12.22%	14.40%
IDACORP, Inc.	IDA	3.40%	0.80	15.62%	12.22%	13.18%
NorthWestern Corporation	NWE	3.40%	0.95	15.62%	12.22%	15.01%
OGE Energy Corporation	OGE	3.40%	1.05	15.62%	12.22%	16.24%
Pinnacle West Capital Corporation	PNW	3.40%	0.90	15.62%	12.22%	14.40%
Portland General Electric Company	POR	3.40%	0.90	15.62%	12.22%	14.40%
Southern Company	SO	3.40%	0.95	15.62%	12.22%	15.01%
Wisconsin Energy Corporation	WEC	3.40%	0.80	15.62%	12.22%	13.18%
Xcel Energy Inc.	XEL	3.40%	0.80	15.62%	12.22%	13.18%
Mean			0.883			14.19%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021, at 14

[2] Source: Value Line, as of February 28, 2022

[3] Source: Average of JMC-5.1 S&P 500 MRP 2 & 3

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

APITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BET
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Alliant Energy Corporation	LNT	3.40%	0.864	15.62%	12.22%	13.96%
Ameren Corporation	AEE	3.40%	0.797	15.62%	12.22%	13.15%
American Electric Power Company, Inc	AEP	3.40%	0.836	15.62%	12.22%	13.62%
Avista Corporation	AVA	3.40%	0.817	15.62%	12.22%	13.39%
Black Hills Corporation	BKH	3.40%	0.986	15.62%	12.22%	15.46%
CMS Energy Corporation	CMS	3.40%	0.811	15.62%	12.22%	13.32%
Consolidated Edison, Inc.	ED	3.40%	0.692	15.62%	12.22%	11.86%
Duke Energy Corporation	DUK	3.40%	0.804	15.62%	12.22%	13.23%
Edison International	EIX	3.40%	0.926	15.62%	12.22%	14.73%
Entergy Corporation	ETR	3.40%	0.960	15.62%	12.22%	15.13%
Energy, Inc.	EVRG	3.40%	0.876	15.62%	12.22%	14.10%
Eversource Energy	ES	3.40%	0.893	15.62%	12.22%	14.32%
IDACORP, Inc.	IDA	3.40%	0.851	15.62%	12.22%	13.80%
NorthWestern Corporation	NWE	3.40%	1.009	15.62%	12.22%	15.73%
OGE Energy Corporation	OGE	3.40%	1.036	15.62%	12.22%	16.07%
Pinnacle West Capital Corporation	PNW	3.40%	0.911	15.62%	12.22%	14.54%
Portland General Electric Company	POR	3.40%	0.869	15.62%	12.22%	14.02%
Southern Company	SO	3.40%	0.901	15.62%	12.22%	14.41%
Wisconsin Energy Corporation	WEC	3.40%	0.807	15.62%	12.22%	13.26%
Xcel Energy Inc.	XEL	3.40%	0.824	15.62%	12.22%	13.48%
Mean			0.873			14.08%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021, at 14

[2] Source: Bloomberg Professional, 5-Year Betas as of February 28, 2022

[3] Source: Average of JMC-5.1 S&P 500 MRP 2 & 3

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

EXHIBIT JMC-6

RISK PREMIUM ANALYSIS

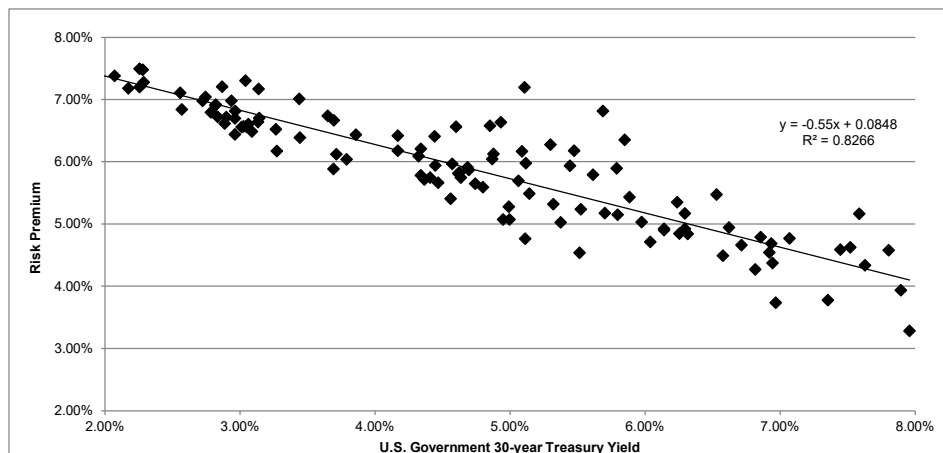
BOND YIELD PLUS RISK PREMIUM
Risk Premium -- Electric Utilities

	[1]	[2]	[3]
	Average Authorized Elec 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%

BOND YIELD PLUS RISK PREMIUM
Risk Premium -- Electric Utilities

	[1]	[2]	[3]
	Average Authorized Elec ROE	U.S. Govt. 30-year Treasury	Risk Premium
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	10.41%	4.32%	6.09%
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%
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	9.74%	2.25%	7.49%
2020.1	9.45%	1.89%	7.56%
2020.2	9.52%	1.38%	8.14%
2020.3	9.34%	1.37%	7.98%
2020.4	9.32%	1.62%	7.70%
2021.1	9.45%	2.07%	7.38%
2021.2	9.46%	2.25%	7.20%
2021.3	9.37%	1.93%	7.44%
2021.4	9.36%	1.94%	7.41%
2022.1	9.35%	2.17%	7.18%
AVERAGE	10.54%	4.58%	5.96%
MEDIAN	10.40%	4.62%	6.04%

BOND YIELD PLUS RISK PREMIUM
Risk Premium -- Electric Utilities



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.90919
R Square	0.82663
Adjusted R Square	0.82517
Standard Error	0.00422
Observations	121

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.0101	0.0101	567.3811	0.0000
Residual	119	0.0021	0.0000		
Total	120	0.0122			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0848	0.00113	75.34914	0.00000	0.08255	0.08700	0.08255	0.08700
X Variable 1	-0.5500	0.02309	-23.81976	0.00000	-0.59577	-0.50432	-0.59577	-0.50432

	[7]	[8]	[9]
	U.S. Govt. 30-year Treasury	Risk Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	2.20%	7.27%	9.47%
Blue Chip Near-Term Projected Forecast (Q4 2021 - Q4 2022) [5]	2.74%	6.97%	9.71%
Blue Chip Long-Term Projected Forecast (2023-2027) [6]	3.40%	6.61%	10.01%
AVERAGE			9.73%

Notes:

- [1] Source: Regulatory Research Associates, rate cases through February 28, 2022
- [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
- [1] Source: Regulatory Research Associates, rate cases through February 28, 2022
- [6] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14
- [7] See notes [4] & [5]
- [8] Equals 0.084773 + (-0.550043 x Column [6])
- [9] Equals Column [6] + Column [7]

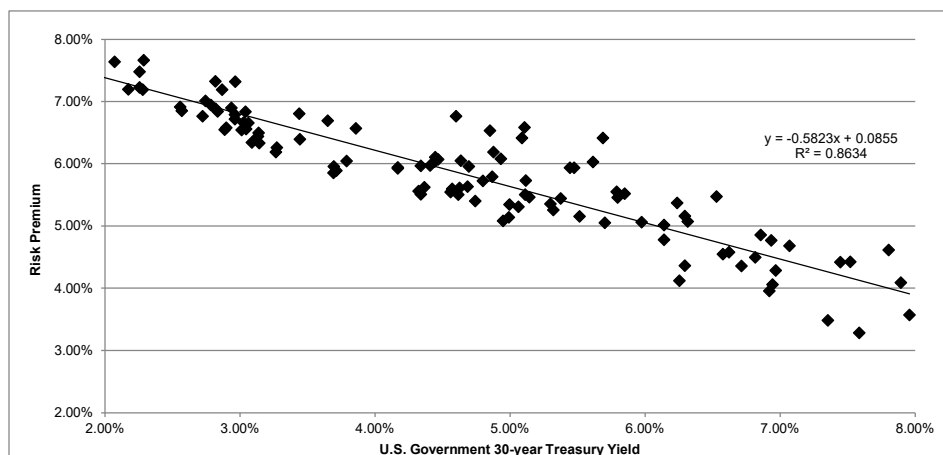
BOND YIELD PLUS RISK PREMIUM
Risk Premium -- Natural Gas Utilities

	[1] Average Authorized Gas ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
1992.1	12.42%	7.80%	4.62%
1992.2	11.98%	7.89%	4.09%
1992.3	11.87%	7.45%	4.42%
1992.4	11.94%	7.52%	4.42%
1993.1	11.75%	7.07%	4.68%
1993.2	11.71%	6.86%	4.85%
1993.3	11.39%	6.31%	5.07%
1993.4	11.16%	6.14%	5.02%
1994.1	11.12%	6.57%	4.55%
1994.2	10.84%	7.35%	3.48%
1994.3	10.87%	7.58%	3.28%
1994.4	11.53%	7.96%	3.57%
1995.2	11.00%	6.94%	4.06%
1995.3	11.07%	6.71%	4.35%
1995.4	11.61%	6.23%	5.37%
1996.1	11.45%	6.29%	5.16%
1996.2	10.88%	6.92%	3.96%
1996.3	11.25%	6.96%	4.29%
1996.4	11.19%	6.62%	4.58%
1997.1	11.31%	6.81%	4.49%
1997.2	11.70%	6.93%	4.77%
1997.3	12.00%	6.53%	5.47%
1997.4	10.92%	6.14%	4.78%
1998.2	11.37%	5.85%	5.52%
1998.3	11.41%	5.47%	5.94%
1998.4	11.69%	5.10%	6.59%
1999.1	10.82%	5.37%	5.44%
1999.2	11.25%	5.79%	5.46%
1999.4	10.38%	6.25%	4.12%
2000.1	10.66%	6.29%	4.36%
2000.2	11.03%	5.97%	5.06%
2000.3	11.33%	5.79%	5.55%
2000.4	12.10%	5.69%	6.41%
2001.1	11.38%	5.44%	5.93%
2001.2	10.75%	5.70%	5.05%
2001.4	10.65%	5.30%	5.35%
2002.1	10.67%	5.51%	5.15%
2002.2	11.64%	5.61%	6.03%
2002.3	11.50%	5.08%	6.42%
2002.4	11.01%	4.93%	6.08%
2003.1	11.38%	4.85%	6.53%
2003.2	11.36%	4.60%	6.76%
2003.3	10.61%	5.11%	5.50%
2003.4	10.84%	5.11%	5.73%
2004.1	11.06%	4.88%	6.18%
2004.2	10.57%	5.32%	5.25%
2004.3	10.37%	5.06%	5.31%
2004.4	10.66%	4.86%	5.79%
2005.1	10.65%	4.69%	5.96%
2005.2	10.54%	4.47%	6.07%
2005.3	10.47%	4.44%	6.03%
2005.4	10.32%	4.68%	5.63%
2006.1	10.68%	4.63%	6.05%
2006.2	10.60%	5.14%	5.46%
2006.3	10.34%	4.99%	5.34%
2006.4	10.14%	4.74%	5.40%
2007.1	10.52%	4.80%	5.72%
2007.2	10.13%	4.99%	5.14%
2007.3	10.03%	4.95%	5.08%
2007.4	10.12%	4.61%	5.50%
2008.1	10.38%	4.41%	5.97%
2008.2	10.17%	4.57%	5.60%

BOND YIELD PLUS RISK PREMIUM
Risk Premium -- Natural Gas Utilities

	[1] Average Authorized Gas ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
2008.3	10.55%	4.44%	6.11%
2008.4	10.34%	3.65%	6.69%
2009.1	10.24%	3.44%	6.81%
2009.2	10.11%	4.17%	5.94%
2009.3	9.88%	4.32%	5.56%
2009.4	10.31%	4.34%	5.97%
2010.1	10.24%	4.62%	5.61%
2010.2	9.99%	4.36%	5.62%
2010.3	10.43%	3.86%	6.57%
2010.4	10.09%	4.17%	5.93%
2011.1	10.10%	4.56%	5.54%
2011.2	9.85%	4.34%	5.51%
2011.3	9.65%	3.69%	5.96%
2011.4	9.88%	3.04%	6.84%
2012.1	9.63%	3.14%	6.50%
2012.2	9.83%	2.93%	6.90%
2012.3	9.75%	2.74%	7.01%
2012.4	10.06%	2.86%	7.19%
2013.1	9.57%	3.13%	6.44%
2013.2	9.47%	3.14%	6.33%
2013.3	9.60%	3.71%	5.89%
2013.4	9.83%	3.79%	6.04%
2014.1	9.54%	3.69%	5.85%
2014.2	9.84%	3.44%	6.39%
2014.3	9.45%	3.26%	6.19%
2014.4	10.28%	2.96%	7.32%
2015.1	9.47%	2.55%	6.91%
2015.2	9.43%	2.88%	6.55%
2015.3	9.75%	2.96%	6.79%
2015.4	9.68%	2.96%	6.72%
2016.1	9.48%	2.72%	6.76%
2016.2	9.42%	2.57%	6.85%
2016.3	9.47%	2.28%	7.19%
2016.4	9.67%	2.83%	6.84%
2017.1	9.60%	3.04%	6.56%
2017.2	9.47%	2.90%	6.58%
2017.3	10.14%	2.82%	7.32%
2017.4	9.70%	2.82%	6.88%
2018.1	9.68%	3.02%	6.66%
2018.2	9.43%	3.09%	6.34%
2018.3	9.71%	3.06%	6.65%
2018.4	9.53%	3.27%	6.26%
2019.1	9.55%	3.01%	6.54%
2019.2	9.73%	2.78%	6.94%
2019.3	9.95%	2.29%	7.66%
2019.4	9.73%	2.25%	7.48%
2020.1	9.35%	1.89%	7.46%
2020.2	9.55%	1.38%	8.17%
2020.3	9.52%	1.37%	8.15%
2020.4	9.47%	1.62%	7.86%
2021.1	9.71%	2.07%	7.64%
2021.2	9.48%	2.25%	7.22%
2021.3	9.40%	1.93%	7.46%
2021.4	9.59%	1.94%	7.65%
2022.1	9.36%	2.17%	7.19%
AVERAGE	10.44%	4.52%	5.91%
MEDIAN	10.34%	4.60%	5.96%

BOND YIELD PLUS RISK PREMIUM
Risk Premium -- Natural Gas Utilities



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.92920
R Square	0.86341
Adjusted R Square	0.86222
Standard Error	0.00386
Observations	117

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.0108	0.0108	726.9297	0.0000
Residual	115	0.0017	0.0000		
Total	116	0.0125			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0855	0.00104	82.18787	0.00000	0.08340	0.08752	0.08340	0.08752
X Variable 1	-0.5823	0.02160	-26.96163	0.00000	-0.62503	-0.53948	-0.62503	-0.53948

	[7]	[8]	[9]
	U.S. Govt. 30-year Treasury	Risk Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	2.20%	7.27%	9.47%
Blue Chip Near-Term Projected Forecast (Q4 2021 - Q4 2022) [5]	2.74%	6.95%	9.69%
Blue Chip Long-Term Projected Forecast (2023-2027) [6]	3.40%	6.57%	9.97%
AVERAGE			9.71%

Notes:

- [1] Source: Regulatory Research Associates, rate cases through February 28, 2022
- [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
- [1] Source: Regulatory Research Associates, rate cases through February 28, 2022
- [6] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14
- [7] See notes [4] & [5]
- [8] Equals $0.085463 + (-0.582257 \times \text{Column [6]})$
- [9] Equals Column [6] + Column [7]

EXHIBIT JMC-7

EXPECTED EARNINGS ANALYSIS

EXPECTED EARNINGS ANALYSIS

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Company	Ticker	Value Line ROE 2024-2026	Value Line Total Capital 2020	Value Line Common Equity Ratio 2020	Total Equity 2020	Value Line Total Capital 2024-2026	Value Line Common Equity Ratio 2024-2026	Total Equity 2024-2026	Compound Annual Growth Rate	Adjustment Factor	Adjusted Return on Common Equity
Alliant Energy Corporation	LNT	11.50%	12,657	44.90%	5,683	16,100	45.50%	7,326	5.21%	1.025	11.79%
Ameren Corporation	AEE	10.50%	20,158	44.30%	8,930	28,100	48.00%	13,488	8.60%	1.041	10.93%
American Electric Power Company, Inc	AEP	10.50%	49,537	41.50%	20,558	71,400	43.00%	30,702	8.35%	1.040	10.92%
Avista Corporation	AVA	8.00%	4,090	49.60%	2,029	5,175	52.00%	2,691	5.81%	1.028	8.23%
Black Hills Corporation	BKH	9.00%	6,090	42.10%	2,564	7,100	51.00%	3,621	7.15%	1.035	9.31%
CMS Energy Corporation	CMS	12.50%	19,223	28.60%	5,498	23,600	34.50%	8,142	8.17%	1.039	12.99%
Consolidated Edison, Inc.	ED	8.00%	43,575	47.00%	20,480	49,700	49.00%	24,353	3.52%	1.017	8.14%
Duke Energy Corporation	DUK	9.50%	106,950	44.00%	47,058	125,600	43.50%	54,636	3.03%	1.015	9.64%
Edison International	EIX	12.00%	35,581	39.50%	14,054	50,000	34.00%	17,000	3.88%	1.019	12.23%
Entergy Corporation	ETR	11.00%	32,386	33.70%	10,914	43,400	32.00%	13,888	4.94%	1.024	11.27%
Evergy, Inc.	EVRG	9.50%	17,924	48.70%	8,729	22,900	46.00%	10,534	3.83%	1.019	9.68%
Eversource Energy	ES	9.50%	32,700	44.50%	14,552	44,000	42.50%	18,700	5.14%	1.025	9.74%
IDACORP, Inc.	IDA	9.50%	4,560	56.10%	2,558	6,025	51.00%	3,073	3.73%	1.018	9.67%
NorthWestern Corporation	NWE	7.50%	4,409	47.20%	2,081	5,652	53.00%	2,996	7.56%	1.036	7.77%
OGE Energy Corporation	OGE	12.50%	7,126	51.00%	3,634	8,375	53.00%	4,439	4.08%	1.020	12.75%
Pinnacle West Capital Corporation	PNW	8.50%	11,948	47.20%	5,639	15,675	40.50%	6,348	2.40%	1.012	8.60%
Portland General Electric Company	POR	9.50%	5,628	46.40%	2,611	6,850	45.50%	3,117	3.60%	1.018	9.67%
Southern Company	SO	14.00%	79,250	36.00%	28,530	95,300	37.00%	35,261	4.33%	1.021	14.30%
Wisconsin Energy Corporation	WEC	13.00%	22,228	47.10%	10,469	27,300	46.50%	12,695	3.93%	1.019	13.25%
Xcel Energy Inc.	XEL	11.00%	34,220	42.60%	14,578	45,100	42.00%	18,942	5.38%	1.026	11.29%
Mean											10.61%
Median											10.33%

Notes:

[1] Source: Value Line

[2] Source: Value Line

[3] Source: Value Line

[4] Equals [2] x [3]

[5] Source: Value Line

[6] Source: Value Line

[7] Equals [5] x [6]

[8] Equals ([7] / [4]) ^ (1/5) - 1

[9] Equals 2 x (1 + [8]) / (2 + [8])

[10] Equals [1] x [9]

EXHIBIT JMC-8

CAPITAL EXPENDITURES ANALYSIS

2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2020 NET UTILITY PLANT
(\$ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2020	2022	2023	2024	2025	2026	Years 2-6 Cap. Ex. / Year 0 Net Plant
Alliant Energy Corporation	LNT							
Capital Spending per Share			\$5.65	\$6.33	\$7.00	\$6.33	\$6.33	
Common Shares Outstanding			251.00	251.75	252.50	251.75	251.75	
Capital Expenditures			\$1,418.2	\$1,592.3	\$1,767.5	\$1,592.3	\$1,592.3	55.54%
Net Plant		\$14,336.0						
Ameren Corporation	AEE							
Capital Spending per Share			\$11.80	\$12.28	\$12.75	\$12.75	\$12.75	
Common Shares Outstanding			265.00	272.50	280.00	280.00	280.00	
Capital Expenditures			\$3,127.0	\$3,344.9	\$3,570.0	\$3,570.0	\$3,570.0	64.09%
Net Plant		\$26,807.0						
American Electric Power Company, Inc.	AEP							
Capital Spending per Share			\$15.15	\$14.45	\$13.75	\$13.75	\$13.75	
Common Shares Outstanding			530.00	540.00	550.00	550.00	550.00	
Capital Expenditures			\$8,029.5	\$7,803.0	\$7,562.5	\$7,562.5	\$7,562.5	60.28%
Net Plant		\$63,902.0						
Avista Corporation	AVA							
Capital Spending per Share			\$6.50	\$6.25	\$6.00	\$6.00	\$6.00	
Common Shares Outstanding			73.50	76.50	79.50	79.50	79.50	
Capital Expenditures			\$477.8	\$478.1	\$477.0	\$477.0	\$477.0	47.82%
Net Plant		\$4,991.6						
Black Hills Corporation	BKH							
Capital Spending per Share			\$9.20	\$9.23	\$9.25	\$9.25	\$9.25	
Common Shares Outstanding			65.50	67.75	70.00	70.00	70.00	
Capital Expenditures			\$602.6	\$625.0	\$647.5	\$647.5	\$647.5	52.66%
Net Plant		\$6,019.7						
CMS Energy Corporation	CMS							
Capital Spending per Share			\$10.35	\$9.43	\$8.50	\$8.50	\$8.50	
Common Shares Outstanding			289.70	292.35	295.00	295.00	295.00	
Capital Expenditures			\$2,998.4	\$2,755.4	\$2,507.5	\$2,507.5	\$2,507.5	63.10%
Net Plant		\$21,039.0						
Consolidated Edison, Inc.	ED							
Capital Spending per Share			\$12.05	\$12.15	\$12.25	\$12.25	\$12.25	
Common Shares Outstanding			366.00	369.00	372.00	372.00	372.00	
Capital Expenditures			\$4,410.3	\$4,483.4	\$4,557.0	\$4,557.0	\$4,557.0	46.38%
Net Plant		\$48,650.0						
Duke Energy Corporation	DUK							
Capital Spending per Share			\$15.70	\$15.60	\$15.50	\$15.50	\$15.50	
Common Shares Outstanding			770.00	770.00	770.00	770.00	770.00	
Capital Expenditures			\$12,089.0	\$12,012.0	\$11,935.0	\$11,935.0	\$11,935.0	53.73%
Net Plant		\$111,500.0						
Edison International	EIX							
Capital Spending per Share			\$15.90	\$16.70	\$17.50	\$17.50	\$17.50	
Common Shares Outstanding			390.00	390.00	390.00	390.00	390.00	
Capital Expenditures			\$6,201.0	\$6,513.0	\$6,825.0	\$6,825.0	\$6,825.0	69.38%
Net Plant		\$47,839.0						
Entergy Corporation	ETR							
Capital Spending per Share			\$18.95	\$19.10	\$19.25	\$19.25	\$19.25	
Common Shares Outstanding			205.00	206.50	208.00	208.00	208.00	
Capital Expenditures			\$3,884.8	\$3,944.2	\$4,004.0	\$4,004.0	\$4,004.0	51.07%
Net Plant		\$38,853.0						
Evergy, Inc.	EVRG							
Capital Spending per Share			\$8.75	\$9.63	\$10.50	\$10.50	\$10.50	
Common Shares Outstanding			230.00	230.00	230.00	230.00	230.00	
Capital Expenditures			\$2,012.5	\$2,213.8	\$2,415.0	\$2,415.0	\$2,415.0	57.05%
Net Plant		\$20,106.0						
Eversource Energy	ES							
Capital Spending per Share			\$10.10	\$9.30	\$8.50	\$8.50	\$8.50	
Common Shares Outstanding			351.00	355.50	360.00	360.00	360.00	
Capital Expenditures			\$3,545.1	\$3,306.2	\$3,060.0	\$3,060.0	\$3,060.0	48.00%
Net Plant		\$33,400.0						
IDACORP, Inc.	IDA							
Capital Spending per Share			\$7.70	\$8.85	\$10.00	\$10.00	\$10.00	
Common Shares Outstanding			50.45	50.45	50.45	50.45	50.45	
Capital Expenditures			\$388.5	\$446.5	\$504.5	\$504.5	\$504.5	49.87%
Net Plant		\$4,709.5						

2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2020 NET UTILITY PLANT
(\$ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2020	2022	2023	2024	2025	2026	Years 2-6 Cap. Ex. / Year 0 Net Plant
NorthWestern Corporation	NWE							
Capital Spending per Share			\$9.70	\$8.23	\$6.75	\$6.75	\$6.75	
Common Shares Outstanding			60.00	61.00	62.00	62.00	62.00	
Capital Expenditures			\$582.0	\$501.7	\$418.5	\$418.5	\$418.5	47.23%
Net Plant		\$4,952.9						
OGE Energy Corporation	OGE							
Capital Spending per Share			\$3.90	\$4.08	\$4.25	\$4.25	\$4.25	
Common Shares Outstanding			200.20	200.20	200.20	200.20	200.20	
Capital Expenditures			\$780.8	\$815.8	\$850.9	\$850.9	\$850.9	44.26%
Net Plant		\$9,374.6						
Pinnacle West Capital Corporation	PNW							
Capital Spending per Share			\$13.90	\$13.20	\$12.50	\$12.50	\$12.50	
Common Shares Outstanding			113.00	116.50	120.00	120.00	120.00	
Capital Expenditures			\$1,570.7	\$1,537.8	\$1,500.0	\$1,500.0	\$1,500.0	50.19%
Net Plant		\$15,159.0						
Portland General Electric Company	POR							
Capital Spending per Share			\$7.45	\$6.85	\$6.25	\$6.25	\$6.25	
Common Shares Outstanding			89.80	89.90	90.00	90.00	90.00	
Capital Expenditures			\$669.0	\$615.8	\$562.5	\$562.5	\$562.5	39.43%
Net Plant		\$7,539.0						
Southern Company	SO							
Capital Spending per Share			\$6.55	\$6.40	\$6.25	\$6.25	\$6.25	
Common Shares Outstanding			1070.00	1070.00	1070.00	1070.00	1070.00	
Capital Expenditures			\$7,008.5	\$6,848.0	\$6,687.5	\$6,687.5	\$6,687.5	36.92%
Net Plant		\$91,875.0						
Wisconsin Energy Corporation	WEC							
Capital Spending per Share			\$9.35	\$9.18	\$9.00	\$9.00	\$9.00	
Common Shares Outstanding			315.43	315.43	315.43	315.43	315.43	
Capital Expenditures			\$2,949.3	\$2,894.1	\$2,838.9	\$2,838.9	\$2,838.9	55.86%
Net Plant		\$25,707.0						
Xcel Energy Inc.	XEL							
Capital Spending per Share			\$9.70	\$9.85	\$10.00	\$10.00	\$10.00	
Common Shares Outstanding			544.00	548.50	553.00	553.00	553.00	
Capital Expenditures			\$5,276.8	\$5,402.7	\$5,530.0	\$5,530.0	\$5,530.0	63.49%
Net Plant		\$42,950.0						
San Diego Gas and Electric	SDG&E							
Capital Spending per Share								
Common Shares Outstanding								
Capital Expenditures								67.21%
Net Plant [9]		\$16,923.2						
SDGE CapEx Total [8]								11,374
SDGE CapEx Annual Average								
Proxy Group Median								51.86%
SDGE / Proxy Group Median								1.30

Notes:

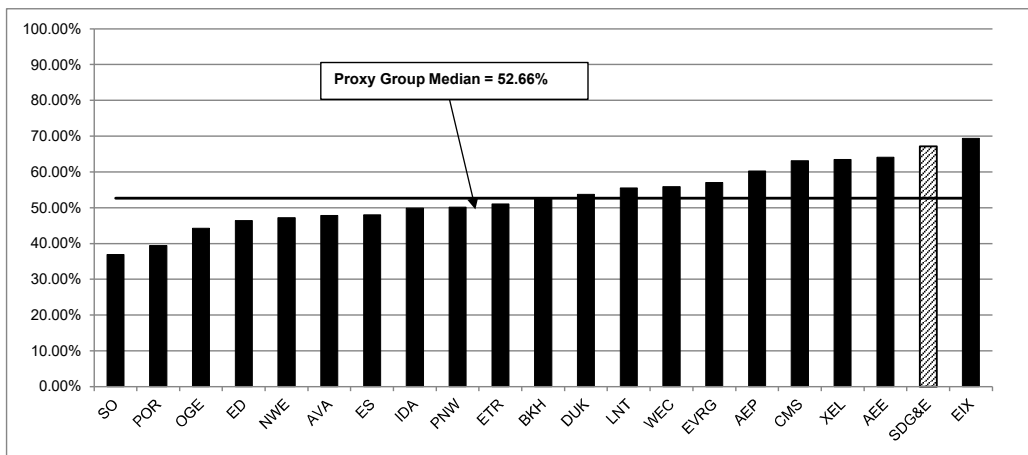
[1] - [6] Source: Value Line, dated December 10, 2021, January 22, 2022, and February 11, 2022

[7] Equals (Column [2] + [3] + [4] + [5] + [6]) / Column [1]

[8] Source: Company Data

[9] Source: Net Utility Plant Form 1: Page 110, Line 14, Column c

2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2020 NET UTILITY PLANT



Projected CAPEX / 2020 Net Plant

Company	2022-2026
1 Southern Company	SO 36.92%
2 Portland General Electric Company	POR 39.43%
3 OGE Energy Corporation	OGE 44.26%
4 Consolidated Edison, Inc.	ED 46.38%
5 NorthWestern Corporation	NWE 47.23%
6 Avista Corporation	AVA 47.82%
7 Eversource Energy	ES 48.00%
8 IDACORP, Inc.	IDA 49.87%
9 Pinnacle West Capital Corporation	PNW 50.19%
10 Entergy Corporation	ETR 51.07%
11 Black Hills Corporation	BKH 52.66%
12 Duke Energy Corporation	DUK 53.73%
13 Alliant Energy Corporation	LNT 55.54%
14 Wisconsin Energy Corporation	WEC 55.86%
15 Evergy, Inc.	EVRG 57.05%
16 American Electric Power Company, Inc.	AEP 60.28%
17 CMS Energy Corporation	CMS 63.10%
18 Xcel Energy Inc.	XEL 63.49%
19 Ameren Corporation	AEE 64.09%
20 San Diego Gas and Electric	SDG&E 67.21%
21 Edison International	EIX 69.38%
Proxy Group Median	52.66%
SDG&E/Proxy Group	1.276

EXHIBIT JMC-9

REGULATORY RISK ASSESSMENT

COMPARISON OF PROXY GROUP COMPANIES
REGULATORY FRAMEWORK - ADJUSTMENT CLAUSES

Proxy Group Company	[1]					[2]					[3]		[4]
	TICKER	Operation State	Operation		Test Year	Rate Base	Decoupling		New Capital		CWIP in Rate Base		
							Full	Partial	Generation Capacity	Generic Infrastructure			
Alliant Energy Corporation	LNT	Iowa	Electric	1	Historical	Average					No		
	LNT	Iowa	Gas	1	Historical	Average					No		
	LNT	Wisconsin	Electric	1	Fully Forecast	Average					Rider		
	LNT	Wisconsin	Gas	1	Fully Forecast	Average					Rider		
Ameren Corporation	AEE	Illinois	Electric	1	Fully Forecast	Average					Partial		
	AEE	Illinois	Gas	1	Fully Forecast	Average		x		x	Partial		
	AEE	Missouri	Electric	1	Partially Forecast	Year End		x		x	No		
	AEE	Missouri	Gas	1	Partially Forecast	Year End		x		x	No		
American Electric Power Company, Inc.	AEP	Arkansas	Electric	1	Partially Forecast	Year End		x	x		No		
	AEP	Indiana	Electric	1	Historical	Year End		x		x	Partial		
	AEP	Kentucky	Electric	1	Historical	Year End		x			Yes		
	AEP	Louisiana	Electric	1	Historical	Average		x			Partial		
	AEP	Michigan	Electric	1	Fully Forecast	Average					Yes		
	AEP	Ohio	Electric	1	Partially Forecast	Year End		x		x	Partial (yes if 75% complete)		
	AEP	Oklahoma	Electric	1	Historical	Year End		x		x	Yes		
	AEP	Tennessee	Electric	1	Fully Forecast	Average					Yes		
	AEP	Texas	Electric	1	Historical	Year End				x	No		
	AEP	Texas	Electric	1	Historical	Year End				x	No		
	AEP	Virginia	Electric	1	Historical	Year End			x		No		
	AEP	West Virginia	Electric	1	Historical	Average					No (large projects may be allowed)		
Avista Corporation	AVA	Washington	Electric	1	Historical	Year End		x					
	AVA	Washington	Gas	1	Historical	Year End		x					
	AVA	Idaho	Electric	1	Historical	Year End	x				No		
	AVA	Idaho	Gas	1	Historical	Year End	x				No		
	AVA	Oregon	Gas	1	Fully Forecast	Average	x				No		
Black Hills Corporation	BKH	South Dakota	Electric	1	Historical	Average		x			Rider		
	BKH	Wyoming	Electric	1	Historical	Year End		x			No		
	BKH	Colorado	Electric	1	Historical	Average			x	x	Partial		
CMS Energy Corporation	CMS	Michigan	Electric	1	Fully Forecast	Average					Yes		
	CMS	Michigan	Gas	1	Fully Forecast	Average		x		x	Yes		
Consolidated Edison	ED	New Jersey	Electric	1	Partially Forecast	Year End				x	Case-specific		
	ED	New York	Electric	1	Fully Forecast	Average	x				Yes		
	ED	New York	Gas	1	Fully Forecast	Average	x			x	Yes		
	ED	New York	Electric	1	Fully Forecast	Average	x				Yes		
	ED	New York	Gas	1	Fully Forecast	Average	x			x	Yes		

COMPARISON OF PROXY GROUP COMPANIES
REGULATORY FRAMEWORK - ADJUSTMENT CLAUSES

Proxy Group Company	[1]				[2]		[3]			[4]	
	TICKER	Operation State	Operation		Test Year	Rate Base	Decoupling		New Capital		CWIP in Rate Base
							Full	Partial	Generation Capacity	Generic Infrastructure	
Duke Energy Corporation	DUK	Florida	Electric	1	Fully Forecast	Average			x		Yes
	DUK	Indiana	Electric	1	Historical	Year End		x	x	x	Partial
	DUK	Kentucky	Electric	1	Fully Forecast	Average		x			Yes
	DUK	Kentucky	Gas	1	Fully Forecast	Average		x			Yes
	DUK	North Carolina	Electric	1	Historical	Year End					Yes
	DUK	North Carolina	Gas	1	Historical	Year End	x			x	Yes
	DUK	Ohio	Electric	1	Partially Forecast	Year End		x		x	Partial (yes if 75% complete)
	DUK	Ohio	Gas	1	Partially Forecast	Year End				x	Partial (yes if 75% complete)
	DUK	South Carolina	Electric	1	Historical	N/A					Yes
	DUK	South Carolina	Gas	1	Historical	N/A		x			Yes
Edison International	EIX	California	Electric	1	Fully Forecast	Average	x				No
Entergy Corporation	ETR	Arkansas	Electric	1	Partially Forecast	Average		x	x	x	No
	ETR	Louisiana-NOCC	Electric	1	Fully Forecast	Average		x	x		Partial
	ETR	Louisiana-NOCC	Gas	1	Fully Forecast	Average					Partial
	ETR	Louisiana	Electric	1	Historical	Average		x	x	x	Partial
	ETR	Louisiana	Gas	1	Historical	Average		x		x	Partial
	ETR	Mississippi	Electric	1	Fully Forecast	Average		x			Partial
	ETR	Texas	Electric	1	Historical	Year End				x	No
Eversource Energy	ES	Connecticut	Electric	1	Historical	Average	x			x	No
	ES	Massachusetts	Electric	1	Historical	Year End	x			x	No
Energys, Inc.	ES	New Hampshire	Electric	1	Historical	Year End		x		x	No
	EVRG	Kansas	Electric	1	Historical	Year End		x			Partial
	EVRG	Missouri	Electric	1	Partially Forecast	Year End		x		x	No
IDACORP	IDA	Idaho	Electric	1	Partially Forecast	Average	x				No
	IDA	Oregon	Electric	1	Fully Forecast	Average					No
NorthWestern Corporation	NWE	Montana	Electric	1	Historical	Average					No
	NWE	Montana	Gas	1	Historical	Average					No
	NWE	Nebraska	Gas								Yes
	NWE	South Dakota	Elec.		Historical	Average					Rider
	NWE	South Dakota	Gas		Historical	Average					Rider
OGE Energy Corporation	OGE	Arkansas	Electric	1	Partially Forecast	Year End		x	x		No
	OGE	Oklahoma	Electric	1	Historical	Year End		x		x	Yes
Pinnacle West Capital Corporation	PNW	Arizona	Electric	1	Historical	Year End		x			No
Portland General Electric Company	POR	Oregon	Electric	1	Fully Forecast	Average		x	x		No
Southern Company	SO	Alabama	Electric	1	Historical				x		Yes
	SO	Georgia	Electric	1	Partially Forecast	Average			x		Limited basis
	SO	Mississippi	Electric	1	Fully Forecast	Year End		x			Partial

COMPARISON OF PROXY GROUP COMPANIES
REGULATORY FRAMEWORK - ADJUSTMENT CLAUSES

Proxy Group Company	[1]		[2]				[3]				[4]
	TICKER	Operation State	Operation		Test Year	Rate Base	Decoupling		New Capital		CWIP in Rate Base
							Full	Partial	Generation Capacity	Generic Infrastructure	
Wisconsin Energy Corporation	WEC	Wisconsin	Electric	1	Fully Forecast	NA					Rider
	WEC	Wisconsin	Gas	1	Fully Forecast	NA					Rider
	WEC	Wisconsin	Gas	1	Fully Forecast	NA					Rider
	WEC	Wisconsin	Electric	1	Fully Forecast	NA					Rider
	WEC	Michigan	Electric	1							
Xcel Energy Inc.	XEL	Colorado	Electric	1	Historical	Average			x	x	Partial
	XEL	Colorado	Gas	1	Historical	Average		x		x	Partial
	XEL	Minnesota	Electric	1	Fully Forecast	Average		x			Partial
	XEL	Minnesota	Gas	1	Fully Forecast	Average				x	Partial
	XEL	New Mexico	Electric	1	Historical	Year End					Yes
	XEL	North Dakota	Electric	1	Fully Forecast	Average				x	Partial
	XEL	North Dakota	Gas	1	Fully Forecast	Average					Partial
	XEL	South Dakota	Electric	1	Historical	Average		x	x	x	Rider
	XEL	Texas	Electric	1	Historical	Year End				x	No
	XEL	Wisconsin	Electric	1	Fully Forecast	Average					Rider
	XEL	Wisconsin	Gas	1	Fully Forecast	Average					Rider
	Proxy Company Totals					Forecast: 45	Year End: 31	12	35	14	32
Total Jurisdictions				85							
Percent of Jurisdictions					Forecast: 53%	Average: 57%	14.1%	41.2%	16.5%	37.6%	70.6%
San Diego Gas and Electric		California	Electric	1	Fully Forecast	Average	x				No
San Diego Gas and Electric		California	Gas	1	Fully Forecast	Average	x				No

Notes:

[1] Source: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated November 12, 2019. Operating subsidiaries not covered in this report were excluded from this exhibit.

[2] Source: "Alternative Regulation for Evolving Utility Challenges," Prepared by Pacific Economics Group Research for Edison Electric Institute, Table 6, November 2015; S&P RRA Research; Company Investor Presentat

[3] Source: S&P Global Market Intelligence, Regulatory Focus: Adjustment Clauses, dated November 12, 2019.

[4] Source: S&P Global Market Intelligence, Regulatory Research Associates, Commission Profiles

[5] This exhibit includes the adjustment mechanisms for the electric and gas distribution companies.

EXHIBIT JMC-10

CAPITAL STRUCTURE ANALYSIS

CAPITAL STRUCTURE ANALYSIS
COMMON EQUITY RATIO [1]

Proxy Group Company	Ticker	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	Average
Alliant Energy Corporation	LNT	53.49%	54.25%	53.80%	53.29%	53.16%	52.01%	53.46%	52.54%	53.25%
Ameren Corporation	AEE	53.53%	52.34%	54.24%	53.44%	54.59%	53.59%	52.24%	52.85%	53.35%
American Electric Power Company, Inc.	AEP	50.57%	47.46%	47.66%	48.15%	47.85%	48.01%	48.13%	48.37%	48.28%
Avista Corporation	AVA	49.73%	51.06%	51.04%	50.57%	49.33%	51.35%	51.15%	50.83%	50.63%
Black Hills Corporation	BKH	63.56%	62.83%	62.35%	62.06%	61.64%	61.10%	60.26%	60.07%	61.73%
CMS Energy Corporation	CMS	52.45%	52.52%	51.90%	51.28%	51.67%	50.23%	49.92%	51.58%	51.44%
Consolidated Edison, Inc.	ED	48.27%	47.82%	47.90%	47.29%	47.70%	47.25%	46.86%	48.90%	47.75%
Duke Energy Corporation	DUK	53.27%	53.36%	53.36%	52.95%	52.70%	52.31%	52.02%	52.56%	52.81%
Edison International	EIX	48.23%	49.89%	52.40%	51.85%	51.72%	52.12%	51.47%	53.79%	51.43%
Entergy Corporation	ETR	46.90%	46.28%	45.23%	46.31%	47.69%	47.50%	47.19%	48.11%	46.90%
Evergy, Inc.	EVRG	60.38%	59.69%	59.66%	59.19%	59.23%	58.12%	59.87%	59.92%	59.51%
Eversource Energy	ES	53.80%	53.80%	55.18%	54.97%	54.91%	54.22%	53.59%	54.52%	54.37%
IDACORP, Inc.	IDA	55.06%	54.41%	54.06%	53.96%	54.04%	51.25%	55.18%	55.14%	54.14%
NorthWestern Corporation	NWE	47.58%	46.39%	46.04%	47.17%	48.26%	48.61%	47.78%	47.59%	47.43%
OGE Energy Corporation	OGE	53.16%	53.14%	56.20%	53.04%	52.78%	53.09%	55.28%	55.15%	53.98%
Pinnacle West Capital Corporation	PNW	51.13%	51.63%	51.50%	51.35%	51.58%	51.89%	53.66%	52.80%	51.94%
Portland General Electric Company	POR	44.79%	47.69%	47.82%	46.07%	47.85%	48.33%	50.09%	49.85%	47.81%
Southern Company	SO	55.49%	54.12%	55.44%	54.92%	55.07%	54.31%	54.96%	54.20%	54.81%
WEC Energy Group, Inc.	WEC	58.97%	57.77%	57.57%	57.00%	57.85%	57.17%	56.67%	55.81%	57.35%
Xcel Energy Inc.	XEL	54.21%	53.90%	53.47%	54.82%	54.32%	52.78%	54.56%	54.29%	54.04%
MEAN		52.73%	52.52%	52.84%	52.48%	52.70%	52.26%	52.72%	52.94%	52.65%
LOW		44.79%	46.28%	45.23%	46.07%	47.69%	47.25%	46.86%	47.59%	46.90%
HIGH		63.56%	62.83%	62.35%	62.06%	61.64%	61.10%	60.26%	60.07%	61.73%

CAPITAL STRUCTURE ANALYSIS
COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES [2]

Company Name	Ticker	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	Average
Interstate Power and Light Company	LNT	54.02%	53.67%	53.43%	53.62%	53.40%	51.70%	52.68%	51.72%	53.03%
Wisconsin Power and Light Company	LNT	52.76%	55.10%	54.34%	52.78%	52.78%	52.47%	54.64%	53.78%	53.58%
Ameren Illinois Company	AEE	54.98%	54.27%	56.35%	55.49%	56.88%	56.48%	54.66%	53.37%	55.31%
Union Electric Company	AEE	52.28%	50.65%	52.37%	51.61%	52.48%	50.88%	50.02%	52.36%	51.58%
AEP Texas, Inc.	AEP	41.68%	40.97%	42.77%	42.41%	42.06%	45.04%	44.16%	43.77%	42.86%
Appalachian Power Company	AEP	100.00%	47.55%	47.17%	47.19%	47.10%	46.65%	49.16%	48.74%	54.20%
Indiana Michigan Power Company	AEP	47.48%	47.22%	49.09%	48.67%	48.35%	47.83%	47.42%	46.74%	47.85%
Kentucky Power Company	AEP	44.00%	43.40%	45.69%	45.28%	44.88%	44.57%	44.60%	47.34%	44.97%
Kingsport Power Company	AEP	53.66%	53.51%	53.68%	53.42%	55.42%	54.98%	55.04%	54.62%	54.29%
Ohio Power Company	AEP	44.68%	49.10%	48.63%	52.42%	52.10%	51.75%	51.18%	54.50%	50.54%
Public Service Company of Oklahoma	AEP	54.31%	57.53%	54.73%	52.88%	51.95%	50.57%	49.51%	49.69%	52.64%
Southwestern Electric Power Company	AEP	50.55%	48.78%	47.80%	50.78%	50.57%	49.71%	48.97%	48.80%	49.49%
Wheeling Power Company	AEP	54.00%	53.71%	53.94%	54.10%	53.86%	53.55%	53.89%	53.51%	53.82%
Avista Corporation	AVA	49.73%	51.06%	51.04%	50.57%	49.33%	51.35%	51.15%	50.83%	50.63%
Black Hills Colorado Electric Utility Company, LP	BKH	74.30%	73.76%	73.47%	73.39%	73.80%	73.70%	73.55%	72.98%	73.62%
Black Hills Power, Inc.	BKH	60.02%	59.06%	58.64%	58.23%	57.51%	57.19%	56.66%	56.82%	58.02%
Cheyenne Light, Fuel and Power Company	BKH	56.23%	55.74%	54.88%	54.44%	52.80%	51.26%	48.17%	48.32%	52.73%
Consumers Energy Company	CMS	52.45%	52.52%	51.90%	51.28%	51.67%	50.23%	49.92%	51.58%	51.44%
Consolidated Edison Company of New York, Inc.	ED	47.71%	47.25%	47.31%	46.74%	47.17%	46.64%	46.23%	48.41%	47.18%
Orange and Rockland Utilities, Inc.	ED	48.96%	48.54%	48.73%	47.29%	47.06%	48.57%	48.82%	48.05%	48.25%
Rockland Electric Company	ED	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Duke Energy Carolinas, LLC	DUK	51.64%	51.40%	52.69%	52.33%	51.93%	51.56%	50.26%	52.11%	51.74%
Duke Energy Florida, LLC	DUK	55.67%	53.66%	52.98%	52.59%	52.10%	51.12%	51.30%	49.91%	52.42%
Duke Energy Indiana, LLC	DUK	55.08%	54.84%	54.32%	53.74%	53.08%	50.12%	50.22%	52.84%	53.03%
Duke Energy Kentucky, Inc.	DUK	52.62%	52.21%	50.30%	49.54%	49.28%	51.35%	50.07%	49.37%	50.59%
Duke Energy Ohio, Inc.	DUK	63.53%	63.20%	62.99%	62.46%	62.16%	61.73%	65.61%	65.22%	63.36%
Duke Energy Progress, LLC	DUK	49.33%	51.81%	51.03%	50.69%	51.10%	52.23%	51.82%	51.29%	51.16%
Southern California Edison Company	EIX	48.23%	49.89%	52.40%	51.85%	51.72%	52.12%	51.47%	53.79%	51.43%
Entergy Arkansas, Inc.	ETR	47.97%	47.04%	46.62%	45.94%	44.42%	47.93%	47.46%	47.90%	46.91%
Entergy Louisiana, LLC	ETR	45.02%	44.51%	43.54%	45.62%	48.23%	46.62%	46.00%	47.47%	45.87%
Entergy Mississippi, Inc.	ETR	47.53%	46.65%	45.91%	48.19%	47.91%	47.09%	48.92%	48.60%	47.60%
Entergy New Orleans, LLC	ETR	48.73%	49.06%	48.65%	48.25%	44.14%	43.23%	42.79%	46.69%	46.44%
Entergy Texas, Inc.	ETR	51.18%	50.79%	48.02%	47.45%	52.68%	51.59%	50.97%	50.92%	50.45%
Kansas City Power & Light Company	EVRG	51.20%	49.86%	49.05%	48.69%	48.77%	47.12%	49.97%	50.31%	49.37%
Kansas Gas and Electric Company	EVRG	83.27%	82.90%	82.73%	82.66%	82.55%	82.18%	82.03%	81.96%	82.53%
KCP&L Greater Missouri Operations Company	EVRG	50.37%	49.01%	51.85%	51.97%	52.91%	51.74%	50.52%	50.34%	51.09%
Westar Energy (KPL)	EVRG	58.65%	58.47%	58.00%	57.03%	56.97%	55.81%	57.92%	57.97%	57.60%
Westar Energy, Inc.	EVRG	67.17%	66.84%	66.49%	65.93%	65.83%	64.98%	66.43%	66.41%	66.26%
Great Plains Energy Incorporated	EVRG	50.96%	49.62%	49.83%	49.61%	49.94%	48.44%	50.13%	50.32%	49.86%
Connecticut Light and Power Company	ES	55.21%	54.52%	56.83%	56.70%	58.10%	56.85%	56.23%	55.97%	56.30%
NSTAR Electric Company	ES	54.09%	55.06%	54.86%	55.48%	54.39%	53.43%	52.85%	55.57%	54.46%
Public Service Company of New Hampshire	ES	48.91%	48.44%	51.10%	48.66%	47.60%	48.99%	48.26%	47.77%	48.72%
Idaho Power Co.	IDA	55.06%	54.41%	54.06%	53.96%	54.04%	51.25%	55.18%	55.14%	54.14%
NorthWestern Corporation	NWE	47.58%	46.39%	46.04%	47.17%	48.26%	48.61%	47.78%	47.59%	47.43%
Oklahoma Gas and Electric Company	OGE	53.16%	53.14%	56.20%	53.04%	52.78%	53.09%	55.28%	55.15%	53.98%
Arizona Public Service Company	PNW	51.13%	51.63%	51.50%	51.35%	51.58%	51.89%	53.66%	52.80%	51.94%
Portland General Electric Company	POR	44.79%	47.69%	47.82%	46.07%	47.85%	48.33%	50.09%	49.85%	47.81%
Alabama Power Company	SO	55.13%	53.98%	54.81%	53.12%	52.69%	53.76%	53.86%	51.90%	53.66%
Georgia Power Company	SO	55.87%	54.85%	55.70%	56.05%	56.59%	54.59%	55.70%	56.12%	55.68%
Mississippi Power Company	SO	54.14%	48.99%	56.80%	55.31%	55.53%	54.99%	54.80%	50.84%	53.93%
Wisconsin Electric Power Company	WEC	59.23%	57.93%	57.81%	57.18%	58.16%	57.39%	56.89%	56.48%	57.63%
Wisconsin Public Service Corporation	WEC	58.53%	57.48%	57.15%	56.71%	57.29%	56.78%	56.29%	54.61%	56.85%
Northern States Power Company - MN	XEL	52.62%	52.07%	51.37%	53.19%	52.20%	50.13%	52.55%	52.20%	52.04%
Northern States Power Company - WI	XEL	52.07%	54.87%	54.83%	53.85%	53.13%	52.61%	54.90%	54.23%	53.81%
Public Service Company of Colorado	XEL	56.05%	55.42%	54.94%	56.82%	56.56%	54.60%	56.58%	56.32%	55.91%
Southwestern Public Service Company	XEL	54.25%	54.19%	54.27%	54.17%	54.15%	54.22%	54.13%	54.14%	54.19%

Notes:

- [1] Ratios are weighted by actual common capital, short-term debt, and long-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	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	Average
Alliant Energy Corporation	LNT	46.51%	45.75%	46.20%	46.71%	46.84%	47.99%	46.54%	47.46%	46.75%
Ameren Corporation	AEE	46.47%	47.66%	45.76%	46.56%	45.41%	46.41%	47.76%	47.15%	46.65%
American Electric Power Company, Inc.	AEP	49.43%	52.54%	52.34%	51.85%	52.15%	51.99%	51.87%	51.63%	51.72%
Avista Corporation	AVA	50.27%	48.94%	48.96%	49.43%	50.67%	48.65%	48.85%	49.17%	49.37%
Black Hills Corporation	BKH	36.44%	37.17%	37.65%	37.94%	38.36%	38.90%	39.74%	39.93%	38.27%
CMS Energy Corporation	CMS	47.55%	47.48%	48.10%	48.72%	48.33%	49.77%	50.08%	48.42%	48.56%
Consolidated Edison, Inc.	ED	51.73%	52.18%	52.10%	52.71%	52.30%	52.75%	53.14%	51.10%	52.25%
Duke Energy Corporation	DUK	46.73%	46.64%	46.64%	47.05%	47.30%	47.69%	47.98%	47.44%	47.19%
Edison International	EIX	51.77%	50.11%	47.60%	48.15%	48.28%	47.88%	48.53%	46.21%	48.57%
Energy Corporation	ETR	53.10%	53.72%	54.77%	53.69%	52.31%	52.50%	52.81%	51.89%	53.10%
Evergy, Inc.	EVRG	39.62%	40.31%	40.34%	40.81%	40.77%	41.88%	40.13%	40.08%	40.49%
Eversource Energy	ES	46.20%	46.20%	44.82%	45.03%	45.09%	45.78%	46.41%	45.48%	45.63%
IDACORP, Inc.	IDA	44.94%	45.59%	45.94%	46.04%	45.96%	48.75%	44.82%	44.86%	45.86%
NorthWestern Corporation	NWE	52.42%	53.61%	53.96%	52.83%	51.74%	51.39%	52.22%	52.41%	52.57%
OGE Energy Corporation	OGE	46.84%	46.86%	43.80%	46.96%	47.22%	46.91%	44.72%	44.85%	46.02%
Pinnacle West Capital Corporation	PNW	48.87%	48.37%	48.50%	48.65%	48.42%	48.11%	46.34%	47.20%	48.06%
Portland General Electric Company	POR	55.21%	52.31%	52.18%	53.93%	52.15%	51.67%	49.91%	50.15%	52.19%
Southern Company	SO	44.51%	45.88%	44.56%	45.08%	44.93%	45.69%	45.04%	45.80%	45.19%
WEC Energy Group, Inc.	WEC	41.03%	42.23%	42.43%	43.00%	42.15%	42.83%	43.33%	44.19%	42.65%
Xcel Energy Inc.	XEL	45.79%	46.10%	46.53%	45.18%	45.68%	47.22%	45.44%	45.71%	45.96%
MEAN		47.27%	47.48%	47.16%	47.52%	47.30%	47.74%	47.28%	47.06%	47.35%
LOW		36.44%	37.17%	37.65%	37.94%	38.36%	38.90%	39.74%	39.93%	38.27%
HIGH		55.21%	53.72%	54.77%	53.93%	52.31%	52.75%	53.14%	52.41%	53.10%

CAPITAL STRUCTURE ANALYSIS
LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES [2]

Company Name	Ticker	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1	2019Q4	Average
Interstate Power and Light Company	LNT	45.98%	46.33%	46.57%	46.38%	46.60%	48.30%	47.32%	48.28%	46.97%
Wisconsin Power and Light Company	LNT	47.24%	44.90%	45.66%	47.22%	47.22%	47.53%	45.36%	46.22%	46.42%
Ameren Illinois Company	AEE	45.02%	45.73%	43.65%	44.51%	43.12%	43.52%	45.34%	46.63%	44.69%
Union Electric Company	AEE	47.72%	49.35%	47.63%	48.39%	47.52%	49.12%	49.98%	47.64%	48.42%
AEP Texas, Inc.	AEP	58.32%	59.03%	57.23%	57.59%	57.94%	54.96%	55.84%	56.23%	57.14%
Appalachian Power Company	AEP	0.00%	52.45%	52.83%	52.81%	52.90%	53.35%	50.84%	51.26%	45.80%
Indiana Michigan Power Company	AEP	52.52%	52.78%	50.91%	51.33%	51.65%	52.17%	52.58%	53.26%	52.15%
Kentucky Power Company	AEP	56.00%	56.60%	54.31%	54.72%	55.12%	55.43%	55.40%	52.66%	55.03%
Kingsport Power Company	AEP	46.34%	46.49%	46.32%	46.58%	44.58%	45.02%	44.96%	45.38%	45.71%
Ohio Power Company	AEP	55.32%	50.90%	51.37%	47.58%	47.90%	48.25%	48.82%	45.50%	49.46%
Public Service Company of Oklahoma	AEP	45.69%	42.47%	45.27%	47.12%	48.05%	49.43%	50.49%	50.31%	47.36%
Southwestern Electric Power Company	AEP	49.45%	51.22%	52.20%	49.22%	49.43%	50.29%	51.03%	51.20%	50.51%
Wheeling Power Company	AEP	46.00%	46.29%	46.06%	45.90%	46.14%	46.45%	46.11%	46.49%	46.18%
Avista Corporation	AVA	50.27%	48.94%	48.96%	49.43%	50.67%	48.65%	48.85%	49.17%	49.37%
Black Hills Colorado Electric Utility Company, LP	BKH	25.70%	26.24%	26.53%	26.61%	26.20%	26.30%	26.45%	27.02%	26.38%
Black Hills Power, Inc.	BKH	39.98%	40.94%	41.36%	41.77%	42.49%	42.81%	43.34%	43.18%	41.98%
Cheyenne Light, Fuel and Power Company	BKH	43.77%	44.26%	45.12%	45.56%	47.20%	48.74%	51.83%	51.68%	47.27%
Consumers Energy Company	CMS	47.55%	47.48%	48.10%	48.72%	48.33%	49.77%	50.08%	48.42%	48.56%
Consolidated Edison Company of New York, Inc.	ED	52.29%	52.75%	52.69%	53.26%	52.83%	53.36%	53.77%	51.59%	52.82%
Orange and Rockland Utilities, Inc.	ED	51.04%	51.46%	51.27%	52.71%	52.94%	51.43%	51.18%	51.95%	51.75%
Rockland Electric Company	ED	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Duke Energy Carolinas, LLC	DUK	48.36%	48.60%	47.31%	47.67%	48.07%	48.44%	49.74%	47.89%	48.26%
Duke Energy Florida, LLC	DUK	44.33%	46.34%	47.02%	47.41%	47.90%	48.88%	48.70%	50.09%	47.58%
Duke Energy Indiana, LLC	DUK	44.92%	45.16%	45.68%	46.26%	46.92%	49.88%	49.78%	47.16%	46.97%
Duke Energy Kentucky, Inc.	DUK	47.38%	47.79%	49.70%	50.46%	50.72%	48.65%	49.93%	50.63%	49.41%
Duke Energy Ohio, Inc.	DUK	36.47%	36.80%	37.01%	37.54%	37.84%	38.27%	34.39%	34.78%	36.64%
Duke Energy Progress, LLC	DUK	50.67%	48.19%	48.97%	49.31%	48.90%	47.77%	48.18%	48.71%	48.84%
Southern California Edison Company	EIX	51.77%	50.11%	47.60%	48.15%	48.28%	47.88%	48.53%	46.21%	48.57%
Entergy Arkansas, Inc.	ETR	52.03%	52.96%	53.38%	54.06%	55.58%	52.07%	52.54%	52.10%	53.09%
Entergy Louisiana, LLC	ETR	54.98%	55.49%	56.46%	54.38%	51.77%	53.38%	54.00%	52.53%	54.13%
Entergy Mississippi, Inc.	ETR	52.47%	53.35%	54.09%	51.81%	52.09%	52.91%	51.08%	51.40%	52.40%
Entergy New Orleans, LLC	ETR	51.27%	50.94%	51.35%	51.75%	55.86%	56.77%	57.21%	53.31%	53.56%
Entergy Texas, Inc.	ETR	48.82%	49.21%	51.98%	52.55%	47.32%	48.41%	49.03%	49.08%	49.55%
Kansas City Power & Light Company	EVRG	48.80%	50.14%	50.95%	51.31%	51.23%	52.88%	50.03%	49.69%	50.63%
Kansas Gas and Electric Company	EVRG	16.73%	17.10%	17.27%	17.34%	17.45%	17.82%	17.97%	18.04%	17.47%
KCP&L Greater Missouri Operations Company	EVRG	49.63%	50.99%	48.15%	48.03%	47.09%	48.26%	49.48%	49.66%	48.91%
Westar Energy (KPL)	EVRG	41.35%	41.53%	42.00%	42.97%	43.03%	44.19%	42.08%	42.03%	42.40%
Westar Energy, Inc.	EVRG	32.83%	33.16%	33.51%	34.07%	34.17%	35.02%	33.57%	33.59%	33.74%
Great Plains Energy Incorporated	EVRG	49.04%	50.38%	50.17%	50.39%	50.06%	51.56%	49.87%	49.68%	50.14%
Connecticut Light and Power Company	ES	44.79%	45.48%	43.17%	43.30%	41.90%	43.15%	43.77%	44.03%	43.70%
NSTAR Electric Company	ES	45.91%	44.94%	45.14%	44.52%	45.61%	46.57%	47.15%	44.43%	45.54%
Public Service Company of New Hampshire	ES	51.09%	51.56%	48.90%	51.34%	52.40%	51.01%	51.74%	52.23%	51.28%
Idaho Power Co.	IDA	44.94%	45.59%	45.94%	46.04%	45.96%	48.75%	44.82%	44.86%	45.86%
NorthWestern Corporation	NWE	52.42%	53.61%	53.96%	52.83%	51.74%	51.39%	52.22%	52.41%	52.57%
Oklahoma Gas and Electric Company	OGE	46.84%	46.86%	43.80%	46.96%	47.22%	46.91%	44.72%	44.85%	46.02%
Arizona Public Service Company	PNW	48.87%	48.37%	48.50%	48.65%	48.42%	48.11%	46.34%	47.20%	48.06%
Portland General Electric Company	POR	55.21%	52.31%	52.18%	53.93%	52.15%	51.67%	49.91%	50.15%	52.19%
Alabama Power Company	SO	44.87%	46.02%	45.19%	46.88%	47.31%	46.24%	46.14%	48.10%	46.34%
Georgia Power Company	SO	44.13%	45.15%	44.30%	43.95%	43.41%	45.41%	44.30%	43.88%	44.32%
Mississippi Power Company	SO	45.86%	51.01%	43.20%	44.69%	44.47%	45.01%	45.20%	49.16%	46.07%
Wisconsin Electric Power Company	WEC	40.77%	42.07%	42.19%	42.82%	41.84%	42.61%	43.11%	43.52%	42.37%
Wisconsin Public Service Corporation	WEC	41.47%	42.52%	42.85%	43.29%	42.71%	43.22%	43.71%	45.39%	43.15%
Northern States Power Company - MN	XEL	47.38%	47.93%	48.63%	46.81%	47.80%	49.87%	47.45%	47.80%	47.96%
Northern States Power Company - WI	XEL	47.93%	45.13%	45.17%	46.15%	46.87%	47.39%	45.10%	45.77%	46.19%
Public Service Company of Colorado	XEL	43.95%	44.58%	45.06%	43.18%	43.44%	45.40%	43.42%	43.68%	44.09%
Southwestern Public Service Company	XEL	45.75%	45.81%	45.73%	45.83%	45.85%	45.78%	45.87%	45.86%	45.81%

Notes:

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