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**DIRECT TESTIMONY OF
JOSHUA C. NOWAK
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

4 **I. INTRODUCTION AND QUALIFICATIONS**

5 **Q1. PLEASE STATE YOUR NAME, BY WHOM YOU ARE EMPLOYED AND**
6 **BUSINESS ADDRESS.**

7 A1. My name is Joshua C. Nowak. I am employed by Concentric Energy Advisors, Inc.
8 (“Concentric”) as a Vice President. Concentric is a management consulting and economic
9 advisory firm, focused on the North American energy and water industries. Based in
10 Marlborough, Massachusetts and Washington, D.C., Concentric specializes in regulatory
11 and litigation support, financial advisory services, energy market strategies, market
12 assessments, energy commodity contracting and procurement, economic feasibility studies,
13 and capital market analyses. My business address is 293 Boston Post Road West, Suite
14 500, Marlborough, Massachusetts 01752.

15 **Q2. PLEASE DESCRIBE YOUR EXPERIENCE IN THE ENERGY AND UTILITY**
16 **INDUSTRIES AND YOUR EDUCATIONAL AND PROFESSIONAL**
17 **QUALIFICATIONS.**

18 A2. I hold a Bachelor’s degree in Economics from Boston College, and have more than 15
19 years of experience in providing economic, financial, and strategic advisory services. As a
20 consultant, I primarily advise clients in regulated utility industries and have provided
21 testimony regarding financial matters before multiple regulatory agencies. I have advised
22 numerous energy and utility clients on a wide range of financial and economic issues with
23 primary concentrations in valuation and utility rate matters. Many of these assignments
24 have included the determination of the cost of capital for valuation and ratemaking
25 purposes. I have provided testimony before the Federal Energy Regulatory Commission
26 (“FERC” or “Commission”) as well as state and provincial jurisdictions in the U.S. and

1 Canada. Prior to joining Concentric in 2018, I was employed by National Grid USA, where
2 I was responsible for regulatory filings related to the cost of capital across the company's
3 multiple U.S. operating companies and service territories. A summary of my professional
4 and educational background is presented in Attachment JCN-1.

5 **Q3. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?**

6 A3. I am submitting this testimony on behalf of San Diego Gas & Electric Company
7 ("SDG&E" or the "Company") as it relates to the appropriate Return on Equity ("ROE")¹
8 for the Company's FERC-regulated transmission business.

9 **II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY**

10 **Q4. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

11 A4. I have been asked by SDG&E to prepare an independent estimate of the Company's cost of
12 equity and recommend to the Commission an ROE rate that is fair, allows SDG&E to
13 attract capital on reasonable terms and maintain its financial integrity, and results in just
14 and reasonable rates for the Company. The data presented in Attachment JCN-2 – JCN-9,
15 Schedules 1 through 5, which have been prepared by me or under my direction, supports
16 my analyses and recommendations. In the remainder of my testimony all references to
17 "Schedules" are to the schedules contained in the Attachments.

18 **Q5. ARE YOU SPONSORING ANY SUPPORTING DOCUMENTS IN THIS CASE?**

19 A.5 Yes. I am sponsoring the following supporting documents:

- 20 • Attachment JCN-1 - Professional and Educational Background;
- 21 • Attachment JCN-2 – Proxy Group Screening Data and Results – Schedule 1;
- 22 • Attachment JCN-3 – Discounted Cash Flow ("DCF") Analysis – Schedule 2.1;

¹ I use the terms "ROE" and "cost of equity" interchangeably throughout my Direct Testimony.

- 1 • Attachment JCN-4 – Long-Term Gross Domestic Product (“GDP”) Growth Estimate –
2 Schedule 2.2;
- 3 • Attachment JCN-5 – Capital Asset Pricing Model (“CAPM”) Analysis – Schedule
4 3.1;
- 5 • Attachment JCN-6 – Market Risk Premium Derived From Analysts Long-Term
6 Growth Estimates – Schedule 3.2;
- 7 • Attachment JCN-7 – Bond Yield Plus Risk Premium Analysis – Schedule 4.1;
- 8 • Attachment JCN-8 – Bond Yield Plus Risk Premium Analysis - FERC ROE
9 Decisions – Schedule 4.2; and
- 10 • Attachment JCN-9 – Summary Results – Schedule 5.

11 **Q6. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT YOU**
12 **CONDUCTED TO SUPPORT YOUR ROE RECOMMENDATION.**

13 A5. Consistent with the Commission’s decision in in Opinion Nos. 569, 569-A and 569-B and
14 the recent MISO Order on Remand,² I have considered the results of multiple
15 methodologies to estimate the ROE for the Company. Because each of the models used to
16 estimate the cost of equity are subject to limiting assumptions or other methodological
17 constraints, investors do not rely solely on one model when establishing their return
18 requirements. Instead, they consider the results of multiple models, similar to what I have
19 used here, to make their investment decisions.

20 My ROE recommendation is based primarily on the range of results that I derive
21 from two financial models: 1) the Two-Step Discounted Cash Flow model (“DCF”); and 2)
22 the Capital Asset Pricing Model (“CAPM”). However, I have also included the results of
23 the Bond Yield Plus Risk Premium approach (“Risk Premium”). In *MISO Transmission*

² *Ass’n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569, 169 FERC ¶ 61,129 (2019), *order on reh’g*, Opinion No. 569-A, 171 FERC ¶ 61,154, *order addressing reh’g arguments and setting aside prior order in part*, Opinion No. 569-B, 173 FERC ¶ 61,159 (2020), *vacated and remanded sub. nom MISO Transmission Owners v. FERC*, 45 F.4th 248 (D.C. Cir. 2022), *Order on Remand*, 189 FERC ¶ 61,036 (2024) (“MISO Order on Remand”).

1 *Owners v. FERC*,³ the U.S. Court of Appeals for the District of Columbia Circuit (the
2 “Court”) found in its 2022 decision that FERC failed to offer a reasoned explanation for its
3 decision to include the Risk Premium model in Opinions Nos. 569-A and 569-B, after
4 rejecting it in No. Opinion 569.

5 FERC recently issued the MISO Order on Remand in response to the Court’s
6 decision and concluded “that the record fails to support the inclusion of the Risk Premium
7 model in the Commission’s ROE methodology.”⁴ Notably, FERC also affirmed the
8 continued inclusion of the DCF and CAPM indicating “[t]he record in this proceeding does
9 not support making any further modifications to the Commission’s ROE methodology.”⁵
10 Because the Commission has relied on the Risk Premium model in other decisions in
11 recent years (*see e.g.*, Opinion Nos. 575⁶ and 879,⁷ and other recent orders⁸), the MISO
12 Order on Remand did not “foreclose the use of a Risk Premium model in future
13 proceedings,”⁹ and the MISO Order on Remand acknowledged that excluding the Risk
14 Premium approach “reduce[s] the diversity of inputs and increase[s] the weighting

³ *MISO Transmission Owners v. FERC*, 45 F.4th 248, 264 (D.C. Cir. 2022). The Court affirmed all other aspects of the Commission’s Opinion No. 569 series of orders.

⁴ MISO Order on Remand, P 23.

⁵ *Id.* at P 24.

⁶ *Entergy Arkansas, Inc.*, Opinion No. 575, 175 FERC ¶ 61,136, PP 244-245, *order on reh’g*, 175 FERC ¶ 61,155 (2021).

⁷ *DATC Path 15, LLC*, Opinion No. 879, 177 FERC ¶ 61,115, PP 24, 213-214 (2021).

⁸ *Pac. Gas and Elec. Co.*, 178 FERC ¶ 61,175, PP 1, 20, 266 (2022); *Constellation Mystic Power, LLC*, 176 FERC ¶ 61,019, PP 15, 176, *order on reh’g*, 177 FERC ¶ 61,106 (2021), *order on reh’g*, 178 FERC ¶ 61,116 (2022).

⁹ MISO Order on Remand, P 24.

1 afforded to the CAPM and DCF model[s].”¹⁰ I thus considered the results both excluding
2 and including the Risk Premium approach. However, my recommendation is based on the
3 Commission’s preferred two-model approach.

4 My recommendation also considered the general economic and capital market
5 environment. Because each model’s assumptions are affected differently by market
6 conditions, the use of multiple methodologies minimizes the reliance on any one set of
7 assumptions. Using more than one model better informs FERC’s analysis in determining
8 the zone of reasonableness.

9 **Q6. WHAT IS YOUR CONCLUSION REGARDING THE APPROPRIATE COST OF**
10 **EQUITY FOR USE IN DETERMINING THE COMPANY’S REVENUE**
11 **REQUIREMENT?**

12 A6. The ROE results presented in my Direct Testimony indicate a composite zone of
13 reasonableness from 9.45 percent to 12.32 percent based on the results of the two methods
14 (*i.e.*, DCF and CAPM). If the Risk Premium analysis were included, the zone of
15 reasonableness based on the results of three methods (*i.e.*, DCF, CAPM, and Risk
16 Premium) would be 9.29 percent to 12.15 percent. Based on SDG&E’s above average risk
17 profile, I consider an ROE in the upper third of the composite zone of reasonableness to be
18 a reasonable estimate of the Company’s cost of equity. The upper third of the zone of
19 reasonableness applying two models is 11.18 percent to 12.32 percent. The three-model
20 approach, (*i.e.*, DCF, CAPM, and Risk Premium) would yield an upper third of the zone of
21 reasonableness of 11.07 percent to 12.15 percent. I therefore recommend the Commission
22 authorize a base ROE of 11.75 percent for the Company, which is the midpoint of the
23 upper third of the zone of reasonableness applying the two-model approach.

¹⁰ *Id.*

1 In addition to the analyses discussed above, SDG&E’s applicable ROE incentives
2 would be incremental to the base ROE, up to the top end of the zone of reasonableness of
3 12.32 percent. This brings my overall ROE recommendation to 12.25 percent (two-model
4 base ROE of 11.75 percent plus 50 basis points for the Order No. 679 adder for SDG&E’s
5 continued participation in the California Independent System Operator (“RTO Adder”).

6 **III. REGULATORY PRINCIPLES**

7 **Q7. PLEASE DESCRIBE THE GUIDING PRINCIPLES USED IN ESTABLISHING** 8 **THE COST OF CAPITAL FOR A REGULATED UTILITY.**

9 A7. Utilities are entitled by law and well-established precedent to receive a fair rate of return
10 sufficient to attract needed capital at reasonable rates. The basic tenets of this regulatory
11 doctrine originate from several bellwether U.S. Supreme Court decisions, principally *Hope*
12 and *Bluefield*.¹¹ Utility regulators across the country, including FERC, adhere to these
13 constitutional requirements when engaging in federal and state-level rate-making. FERC
14 described this standard in the following terms:

15 [W]e are guided by the principle, enunciated by the Supreme Court, that an
16 approved ROE should be ‘reasonably sufficient to assure confidence in the
17 financial soundness of the utility [or, in this case, utilities] and should be
18 adequate under efficient and economical management, to maintain and
19 support its credit, and enable it to raise the money necessary for the proper
20 discharge of its public duties.’¹²

¹¹ *Fed. Power Comm’n v. Hope Nat. Gas Co.*, 320 U.S. 591 (1944) (“*Hope*”); *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm’n of W. Va.*, 262 U.S. 679 (1923) (“*Bluefield*”).

¹² *Midwest Indep. Transmission Sys. Operator, Inc.*, 106 FERC ¶ 61,302, P 13 (2004) (quoting *Bluefield*, 262 U.S. at 693).

1 FERC also has explained that “a key consideration in determining just and
2 reasonable utility ROEs is determining what ROE a utility must offer in order to attract
3 capital, *i.e.*, induce investors to invest in the utility in light of its risk profile.”¹³

4 **Q8. PLEASE BRIEFLY DISCUSS HOW THOSE PRINCIPLES APPLY IN THE**
5 **CONTEXT OF A REGULATED RATE OF RETURN.**

6 A8. Regulated utilities rely primarily on common stock and long-term debt to finance their
7 permanent property, plant, and equipment that is used for the benefit of customers. The
8 allowed rate of return for a regulated utility is based on its weighted average cost of
9 capital, where the costs of the individual sources of capital, debt and equity are weighted
10 by their respective book values. Capital markets are competitive. The ROE represents the
11 cost of raising and retaining equity capital and is estimated through one or more analytical
12 techniques that use market data to quantify investor expectations regarding equity returns.

13 The ROE is a market-based concept and SDG&E is not publicly traded; therefore it
14 is not possible to directly observe the Company’s cost of equity. Further, the ROE cannot
15 be derived solely through quantitative metrics and models. To properly estimate the ROE,
16 the financial, regulatory, and economic context in which the analysis takes place must also
17 be considered. The DCF and CAPM approaches, while fundamental to the ROE
18 determination, are still only models. The results of these models cannot be mechanistically
19 applied without also considering informed judgment, the context of capital market
20 conditions, and the relative risk of any company as compared to the proxy group
21 companies. As discussed further below, FERC has recognized the problem of “model risk”
22 and accordingly has stated that it does not intend to rely upon the results of only one cost

¹³ *Coakley v. Bangor Hydro-Elec. Co.*, 165 FERC ¶ 61,030, PP 33, 44 (2018).

1 of equity model when setting a public utility ROE, but rather relies on multiple models,¹⁴
2 as I have done with the application of the DCF and CAPM approaches.

3 Finally, it is important to note that the U.S. Supreme Court has held that under the
4 statutory standard of “just and reasonable” it is the result reached, not the method
5 employed, which is controlling.¹⁵ Consequently, it is appropriate to consider a variety of
6 approaches and data sources and to also apply informed judgment when arriving at a
7 recommended ROE as I explain below.

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

9 **Q9. WHY IS IT IMPORTANT TO CONSIDER THE EFFECTS OF CURRENT AND** 10 **EXPECTED ECONOMIC AND FINANCIAL MARKET CONDITIONS WHEN** 11 **SETTING THE ROE?**

12 A9. It is important to consider current and expected conditions in the general economy and
13 financial markets because the authorized ROE for a public utility should allow the utility to
14 attract investor capital at a reasonable cost under a variety of economic and financial
15 market conditions, as underscored by the *Hope* and *Bluefield* decisions. In addition, current
16 economic and financial conditions have a bearing on the ROE estimation models and affect
17 SDG&E’s cost of equity.

18 The inputs to the DCF and CAPM are only samples of the various economic and
19 market forces that determine a utility’s required return. The cost of equity is a forward-
20 looking concept, yet ROE models often rely on historical inputs. To the extent that those
21 inputs are impacted by or reflect conditions that are expected to change significantly, it is
22 important to consider those impacts to inform the analyst’s judgment regarding the

¹⁴ Opinion No. 569-A, at P 43.

¹⁵ *Hope*, 320 U.S. at 602.

1 estimation of ROE. Therefore, an assessment of current and projected market conditions is
2 integral to any ROE recommendation.

3 **Q10. WHAT ARE THE KEY FACTORS AFFECTING THE COST OF EQUITY FOR**
4 **REGULATED UTILITIES SUCH AS SDG&E IN THE CURRENT AND**
5 **PROSPECTIVE CAPITAL MARKETS?**

6 A10. The cost of equity for regulated utility companies is being affected by several key factors
7 in the current and prospective capital markets including the uncertainty regarding the
8 Federal Reserve's approach to interest rates and inflation, concerns over elevated interest
9 rates, and the heightened uncertainty and volatility in equity markets and resulting utility
10 performance, which has lagged the broader market. Collectively, these factors contribute to
11 heightened market risk. In this section, I discuss these factors and how they affect the
12 models used to estimate the cost of equity for regulated utilities.

13 **Q11. HOW DOES THE FEDERAL RESERVE'S MONETARY POLICY ACTIONS**
14 **AFFECT CAPITAL MARKETS AND THE U.S. ECONOMY?**

15 A11. The Federal Reserve is responsible for "conducting the nation's monetary policy by
16 influencing money and credit conditions in the economy in pursuit of full employment and
17 stable prices."¹⁶ The Federal Reserve implements monetary policy principally through
18 raising or lowering the overnight federal funds rate, which in turn impacts other interest
19 rates, and thus the demand for goods and services. This, in turn, impacts employment and
20 inflation.

21 Monetary policy has shifted dramatically over the past several years, in response
22 first to COVID-19, and then to record high inflation. The capital markets are significantly
23 affected by the Federal Reserve's policy. While the primary monetary policy tool used by

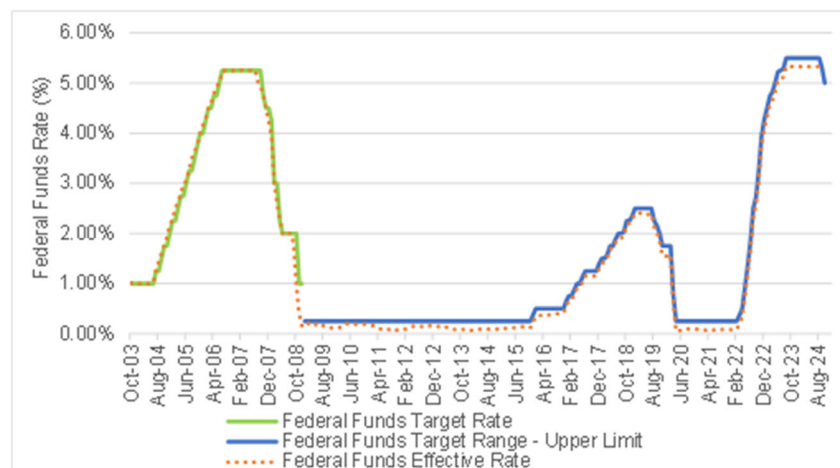
¹⁶ Board of Governors of the Federal Reserve System "FAQs," Available here:
https://www.federalreserve.gov/faqs/about_12594.htm.

1 the Federal Reserve is the short-term interest rate for overnight interbank loans, it has far-
 2 reaching consequences for capital markets.

3 **Q12. WHAT STEPS DID THE FEDERAL GOVERNMENT TAKE TO STABILIZE**
 4 **FINANCIAL MARKETS AND SUPPORT THE ECONOMY IN RESPONSE TO**
 5 **PERSISTENT INFLATION?**

6 A12. Inflation surged to historically high levels in 2022, levels not seen since the late-1970s and
 7 early-1980s, and the Federal Reserve had little choice but to aggressively battle inflation
 8 through raising interest rates. Previously, in response to the economic effects of COVID-
 9 19, the Federal Reserve decreased the federal funds rate in March 2020 to a target range of
 10 0.00 percent to 0.25 percent (which remained in effect until March 2022) in addition to
 11 other stimulus measures that increased the supply of money in the economy. The Federal
 12 Reserve began unwinding its quantitative easing program in 2022 and increased the target
 13 rate 11 times to a target interest rate of 5.25 percent to 5.50 percent through August 2024
 14 (the highest level the highest level in the last 20 years) As shown in Figure 1 below, the
 15 Federal Reserve only recently reduced the federal funds rate by 50 basis points to target
 16 range of 4.75 percent to 5.00 percent.

17 **Figure 1: Federal Open Market Committee (“FOMC”) Federal Funds Rates**



1 Despite the recent rate reduction, the Federal Reserve indicated that inflation remains a key
2 consideration for the Committee:

3 Recent indicators suggest that economic activity has continued to expand at
4 a solid pace. Job gains have slowed, and the unemployment rate has moved
5 up but remains low. Inflation has made further progress toward the
6 Committee's 2 percent objective but remains somewhat elevated.

7 The Committee seeks to achieve maximum employment and inflation at
8 the rate of 2 percent over the longer run. The Committee has gained greater
9 confidence that inflation is moving sustainably toward 2 percent, and
10 judges that the risks to achieving its employment and inflation goals are
11 roughly in balance. The economic outlook is uncertain, and the Committee
12 is attentive to the risks to both sides of its dual mandate.

13 In light of the progress on inflation and the balance of risks, the Committee
14 decided to lower the target range for the federal funds rate by 1/2
15 percentage point to 4-3/4 to 5 percent. In considering additional
16 adjustments to the target range for the federal funds rate, the Committee
17 will carefully assess incoming data, the evolving outlook, and the balance
18 of risks. The Committee will continue reducing its holdings of Treasury
19 securities and agency debt and agency mortgage-backed securities. The
20 Committee is strongly committed to supporting maximum employment and
21 returning inflation to its 2 percent objective.

22 In assessing the appropriate stance of monetary policy, the Committee will
23 continue to monitor the implications of incoming information for the
24 economic outlook. The Committee would be prepared to adjust the stance
25 of monetary policy as appropriate if risks emerge that could impede the
26 attainment of the Committee's goals. The Committee's assessments will
27 take into account a wide range of information, including readings on labor
28 market conditions, inflation pressures and inflation expectations, and
29 financial and international developments.¹⁷

30 Although year-over-year inflation rates have eased over the last several months—
31 increasing just 2.40 percent from September 2023 to September 2024, down from the high

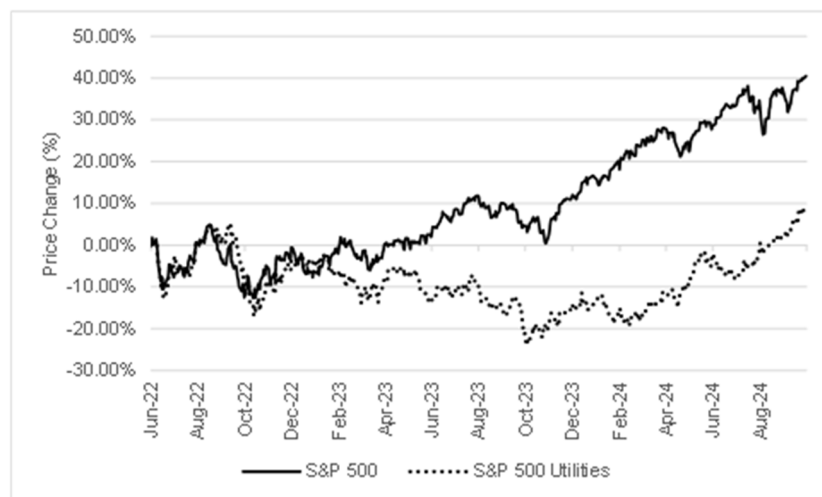
¹⁷ FOMC Press Release (September 18, 2024). Available here:
<https://www.federalreserve.gov/monetarypolicy/files/monetary20240918a1.pdf>

1 of 9.10 percent in June 2022 as measured by the Consumer Price Index (CPI)—the Federal
 2 Reserve also affirmed that inflation “remains somewhat elevated.”¹⁸

3 **Q13. HOW HAVE CAPITAL MARKETS RESPONDED?**

4 A13. In response to monetary policy, record high inflation and disappointing earnings reports,
 5 capital markets over the past several years have been volatile, and the stock market has lost
 6 substantial value. While the S&P 500 closed at record highs on the first trading day of
 7 2022, by mid-June, the S&P 500 was down more than 21 percent. Although the S&P 500
 8 has steadily gained ground since that time, the utility sector has fared far worse, which has
 9 persisted. Since June 2022 at the peak of inflation, while the S&P 500 Index increased
 10 more than 40 percent through September 2024, the S&P Utilities Index has increased by
 11 less than 10 percent on a price change basis, as shown in Figure 2.

12 **Figure 2: S&P 500 and S&P 500 Utilities Indices Performance**
 13 **(6/1/2022 to 9/30/2024)**

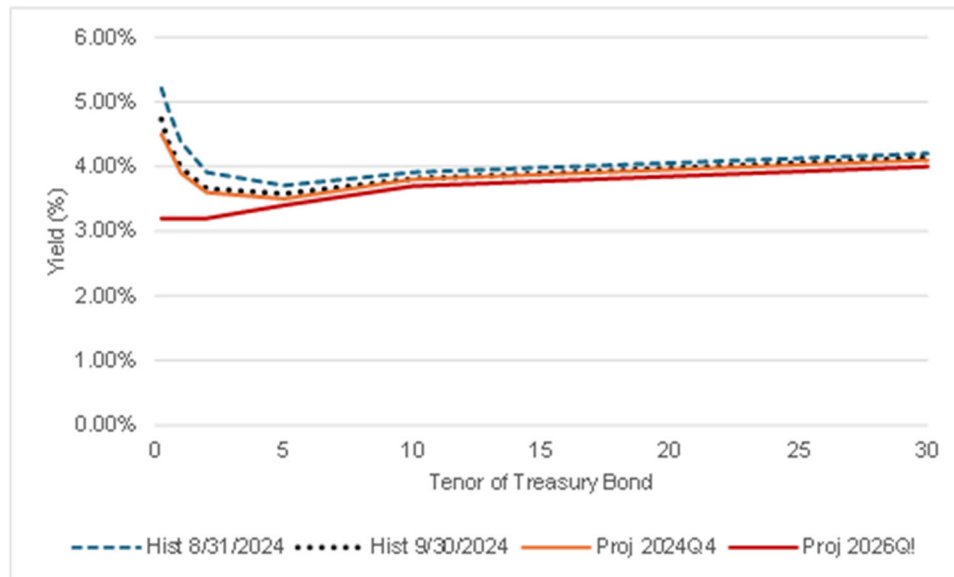


¹⁸ FOMC Press Release (September 18, 2024). Available here: <https://www.federalreserve.gov/monetarypolicy/files/monetary20240918a1.pdf>; Source: Bureau of Labor Statistics, <https://www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm>.

1 **Q14. WHAT ARE EXPECTATIONS FOR LONG-TERM INTEREST RATES?**

2 A14. Despite the 50-basis point reduction on the federal funds rate, long-term interest rates are
 3 not expected to change much in the coming years. That is, the change in the federal funds
 4 rate is primarily having an effect on short-term interest rates. As shown in Figure 3 below,
 5 which includes the yield as of August 31, 2024 and September 30, 2024 for 3-month, 6-
 6 month, 1-year, 2-year, 5-year, 10-year, and 30-year treasury securities, the yield curve is
 7 currently “inverted,” with short-term interest rates higher than long-term interest rates. In
 8 addition, projections from Blue Chip Financial Forecasts demonstrates that the expectation
 9 for continued reductions in the federal funds rate will cause near-term yields to decline
 10 over the next year while long-term rates are expected to remain near current levels.

11 **Figure 3: Current and Projected Interest Rates**

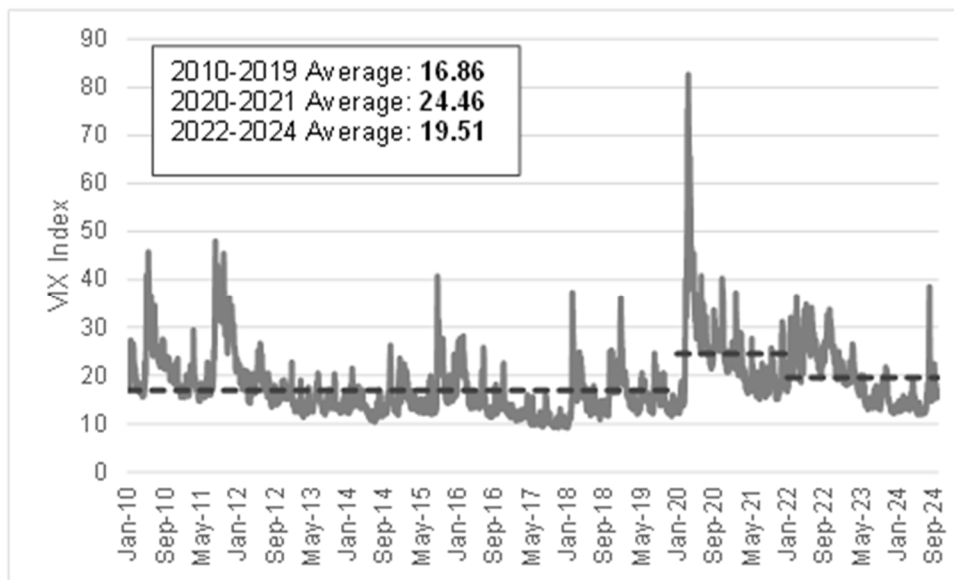


12 **Q15. ARE ECONOMIC CONDITIONS EXPECTED TO STABILIZE IN THE NEAR**
 13 **TERM?**

14 A15. The economy remains in a tenuous phase of the business cycle with concerns over a
 15 potential recession, persistent inflation, and potentially escalating interest rates. As such,
 16 capital market conditions continue to be unstable as interest rates and inflation have

1 increased. The Chicago Board Options Exchange (“CBOE”) Volatility Index (“VIX”) has
 2 remained above long-term historical levels, indicating stock investors remain anxious
 3 about the economy and company earnings. The VIX, a measure of expected price
 4 fluctuations in the S&P 500, reached 82.7 on March 16, 2020, in response to the pandemic.
 5 As a point of comparison, the VIX last traded above 80 in November 2008 during the
 6 financial crisis and Great Recession of 2008/09. The VIX has continued to reach levels
 7 above 25.0 in 2023. As shown in Figure 4, the average level in 2022-2024 has been 19.51
 8 through September 30, 2024, compared to the average of 16.86 from 2010-2019. This
 9 indicates that equity market volatility levels have partially settled but continue to remain
 10 above the historical mean. Note that the VIX reached a recent peak in August 2024 of
 11 38.57, demonstrating the tenuous position of equity markets as the Federal Reserve
 12 considered decreasing interest rates.

13 **Figure 4: S&P 500 and S&P 500 Utilities Indices Performance**
 14 **(6/1/2022 to 9/30/2024)**



15 Similarly, the most recent Consumer Confidence Survey Expectations Index findings
 16 (based on consumers’ short-term economic outlook) declined and is now just above 80 (the

1 threshold that typically signals a recession ahead for values below 80) at 81.7 in September
2 2024. According to the Conference Board, “Consumer confidence dropped in September to
3 near the bottom of the narrow range that has prevailed over the past two years.”¹⁹ While
4 81.7 is above the threshold of 80, the Conference Board elaborated “September’s decline
5 was the largest since August 2021 and all five components of the Index deteriorated.
6 Consumers’ assessments of current business conditions turned negative while views of the
7 current labor market situation softened further.”²⁰ This suggests further uncertainty in
8 equity markets.

9 **Q16. HAS THE COST OF EQUITY FOR UTILITY COMPANIES BEEN AFFECTED**
10 **BY THESE CIRCUMSTANCES?**

11 A16. Yes. The cost of equity for regulated utility companies has been affected by the market
12 conditions during this period. With interest rates at sustained, elevated levels, utility
13 companies are no longer viewed as a safe haven. With Treasury yields in the range of 3.81
14 percent to 4.93 percent,²¹ utility dividend yields in a range near 3.86 percent (see Schedule
15 2.1) fail to offer investors a sufficient risk premium relative to risk-free investments in
16 Treasuries. Further, the utility industry is capital-intensive, requiring significant
17 investments, meaning that utility companies will also have to bear the costs of higher
18 interest rates to access capital markets. The Federal Reserve’s expectation for sustained,
19 higher interest rates will continue to put upward pressure on the cost of capital, causing
20 investors to continue to require higher returns for investments in the utility industry.

¹⁹ The Conference Board. Consumer Confidence Survey Press Release September 24, 2024. Available at <https://www.conference-board.org/topics/consumer-confidence>.

²⁰ *Id.*

²¹ Source: Federal Reserve. As of September 30, 2024, the yield on the 1-month Treasury bill was 4.93 percent, and the yield on the 10-year Treasury bond was 3.81 percent.

1 **V. PROXY GROUP SELECTION**

2 **Q17. WHY IS IT NECESSARY TO SELECT A PROXY GROUP TO ESTIMATE THE**
3 **COST OF EQUITY FOR SDG&E?**

4 A17. Since the ROE is a market-based concept and SDG&E is not publicly traded, it is
5 necessary to establish a group of companies that is both publicly traded and comparable to
6 SDG&E. Even if SDG&E were a publicly traded entity, it is possible that transitory events
7 could bias the Company's market value in one way or another for a given period of time. A
8 significant benefit of using a proxy group is the ability to mitigate the effects of short-term
9 events that may be associated with any one company. The proxy companies used in my
10 ROE analyses possess a set of business and operating characteristics similar to SDG&E's
11 electric and gas utility operations, and thus provide a reasonable basis for estimating the
12 Company's ROE.

13 **Q18. PLEASE PROVIDE A SUMMARY PROFILE OF SDG&E.**

14 A18. SDG&E is a wholly owned subsidiary of Sempra, providing electric services to a
15 population of approximately 3.6 million and natural gas services to a population of
16 approximately 3.3 million. In addition, SDG&E owns and operates four natural gas-fired
17 power plants, three of which are in California and one of which is in Nevada. SDG&E has
18 long-term issuer ratings from S&P of BBB+ (Outlook: Stable), Moody's Investors Service
19 ("Moody's") of A3 (Outlook: Stable), and FitchRatings ("Fitch") of BBB+ (Outlook:
20 Stable).

21 **Q19. PLEASE DESCRIBE THE SPECIFIC SCREENING CRITERIA YOU HAVE**
22 **UTILIZED TO SELECT YOUR PROXY GROUP?**

23 A19. I have used the screening criteria prescribed by FERC to select a proxy group for cases
24 involving electric transmission assets. Specifically, I began with the thirty-six companies
25 that Value Line classifies as "Electric Utilities" and then included those companies that

1 consistently pay quarterly cash dividends, with no dividend cuts in the six-month study
2 period, and have had no major merger activity in the six-month study period. In addition to
3 these criteria, FERC precedent typically requires each proxy company's credit rating to be
4 within one notch above or below the S&P Global ("S&P") and Moody's rating of the
5 Company. However, because SDG&E is split-rated by S&P and Moody's, (BBB+/A3),
6 there are very few comparable companies. In fact, the DCF analysis would be limited to
7 only six results. As such, I expanded the proxy group to also include proxy companies
8 within two notches of SDG&E's A3 rating from Moody's.

9 **Q20. WHY IS IT APPROPRIATE TO INCLUDE COMPANIES THAT ARE WITHIN**
10 **TWO NOTCHES OF MOODY'S CREDIT RATING, INSTEAD OF INCLUDING**
11 **COMPANIES WITHIN A NOTCH OF THE SUBJECT COMPANY?**

12 A20. Credit ratings are assessments of the likelihood of a company defaulting on its debt.

13 However, the purpose of the ROE analysis is to determine the cost of equity, not the cost
14 of debt. While credit ratings provide investors with relevant information with respect to a
15 given company's risk-level, credit ratings are intended to measure the likelihood that a
16 company will meet its debt-payment obligations. As such, the credit rating will have a
17 direct bearing on debt investors' return requirements.

18 However, equity investors bear the residual risk associated with ownership, and
19 have a claim on cash flows only after debt holders are paid. As such, debt and equity
20 securities are exposed to different risks, and therefore require different returns. For the
21 determination of the cost of equity, the analysis must be from the perspective of equity
22 investors. Credit ratings can be informative to equity investors. For example, equity
23 investors are likely to value an investment-grade utility differently than from a non-
24 investment grade utility. However, relying extensively on smaller differences in credit

1 ratings (*e.g.*, credit ratings notches) as a measure of risk to equity investors is misplaced
 2 and does not reflect the full range of risk borne by equity investors.

3 **Q21. WHAT IS THE COMPOSITION OF YOUR PROXY GROUP?**

4 A21. Based on the screening criteria discussed above, I arrived at a proxy group consisting of
 5 the thirty companies shown in Figure 5, below. Please refer to Schedule 1 for my proxy
 6 group screening data and results (ATTACHMENT JCN-2, Schedule 1).

7 **Figure 5: 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
DTE Energy Company	DTE
Duke Energy Corporation	DUK
Edison International	EIX
Entergy Corporation	ETR
Exelon Corporation	EXC
Evergy, Inc.	EVRG
IDACORP, Inc.	IDA
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE
Otter Tail Corporation	OTTR
Pinnacle West Capital Corporation	PNW
Portland General Electric Company	POR
PPL Corporation	PPL

Company	Ticker
Public Service Enterprise Group Inc.	PEG
Southern Company	SO
Wisconsin Energy Corporation	WEC
Xcel Energy Inc.	XEL

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

2 **Q22. WHAT MODELS DID YOU USE IN YOUR ROE ANALYSES?**

3 A22. As I stated above, consistent with the Commission's Opinion Nos. 569, 569-A and 569-B
4 and the recent MISO Order on Remand, I have considered the results of two models to
5 estimate the ROE for SDG&E, namely the two-step DCF model and the CAPM. While the
6 recent MISO Order on Remand determined that the record in that case failed to support the
7 inclusion of the Risk Premium model, the Commission has relied on the Risk Premium
8 model in other decisions in recent years and stated that it could be used in the future were
9 certain shortfalls were overcome.²² Therefore, I also estimated the cost of equity applying
10 the Risk Premium approach (along with the two-step DCF model and CAPM). I address
11 each separately below.

12 **Q23. PLEASE DESCRIBE THE TWO-STEP DCF MODEL.**

13 A23. The two-step DCF analysis approaches ROE from the perspective of an investment in the
14 stock of each of the proxy group companies. The model calculates the internal rate of
15 return of the cash flow stream generated by a cash outflow equal to the average current
16 stock price of the proxy group companies followed by annual cash inflows of the average
17 dividend of the proxy group companies, as those dividends grow according to the
18 appropriate assumed growth rate for two stages. The Stage 1 growth rate is based on equity

²² MISO Order on Remand, P 24.

1 analysts' forecasts for earnings per share ("EPS") growth rates, while the Stage 2 growth
2 rate is based on a long-term forecast of growth in nominal GDP. FERC has long relied on
3 the DCF model for setting allowed returns for jurisdictional utilities.

4 **Q24. HOW DID YOU CALCULATE THE DIVIDEND YIELD IN YOUR APPLICATION**
5 **OF THE TWO-STEP DCF MODEL?**

6 A24. I calculated the dividend yield by annualizing the current quarterly dividend payment and
7 dividing that amount by the average high and low stock prices for each company during
8 the six-month period from April 2024 through September 2024.

9 **Q25. WHY IS IT IMPORTANT TO USE AVERAGE STOCK PRICES OVER A PERIOD**
10 **OF TIME?**

11 A25. It is important to use average stock prices over a period of time to calculate a proxy
12 company's dividend yield in the DCF model to ensure that the calculated ROE is not
13 skewed by anomalous events that may affect stock prices on any given trading day. At the
14 same time, it is important to reflect the conditions that have defined the financial markets
15 over the recent past. In my view, the six-month averaging period reasonably balances those
16 concerns and is consistent with FERC's methodology.

17 **Q26. HOW DID YOU ADJUST THE DIVIDEND YIELD TO ACCOUNT FOR**
18 **PERIODIC GROWTH IN DIVIDENDS?**

19 A26. Utility companies tend to increase their quarterly dividends at different times throughout
20 the year, so it is reasonable to assume that such increases will be evenly distributed over
21 calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected
22 annual dividend growth rate for purposes of calculating this component of the DCF model.
23 Accordingly, the DCF estimates reflect one-half of the expected near-term growth in the
24 dividend yield.

1 **Q27. WHAT SOURCES OF EARNINGS GROWTH HAVE YOU USED IN YOUR TWO-**
2 **STEP DCF ANALYSIS?**

3 A27. In Opinion No. 569-A, FERC accepted the use of a two-step DCF analysis, in which 80
4 percent weight is given to earnings growth estimates, and 20 percent weight is given to
5 GDP growth estimates in the DCF model.²³ FERC's rationale for aligning electric utilities
6 with gas and oil pipelines is premised on the assumption that long-run earnings growth
7 ultimately will be limited to growth in the overall economy. Consistent with Opinion No.
8 569-A, I gave 80 percent weight to the consensus analyst five-year growth estimates in
9 EPS from First Call as reported on Yahoo! Finance and 20 percent weight to the average
10 projected GDP growth rate from three sources: (1) Blue Chip Financial Forecasts for the
11 period from 2024–2033; (2) the Energy Information Administration for the period from
12 2024–2050; and (3) the Social Security Administration for the period from 2024–2075, as
13 shown in Schedule 2.2 (Attachment JCN-4).

14 **Q28. DID YOU REMOVE ANY RESULTS AS OUTLIERS?**

15 A28. Yes. OGE Energy Corp. has a negative growth rate, which violates the basic assumption of
16 the DCF model that dividends grow in perpetuity, so I excluded them from the analysis. In
17 addition, I excluded the result of 6.03 percent for Black Hills Corporation, as it was less
18 than 7.22 percent, which is the yield on the Moody's Baa Utility Bond Index plus 20
19 percent of the Market Risk Premium. There were no companies with results above the high
20 outlier threshold of two times the median result. However, I also excluded the result of
21 15.55 percent for Portland General Electric Company, as it was nearly 400 basis point

²³ Opinion No. 569-A, PP 56-60.

1 from the 22 remaining DCF results, which were all within a range of 339 basis points from
 2 8.53 percent to 11.60 percent.

3 **Q29. WHAT ARE THE RESULTS OF YOUR TWO-STEP DCF ANALYSIS?**

4 A29. The results of my two-step DCF analysis are provided in Schedule 2.1 (Attachment JCN-2)
 5 and summarized in Figure 6, below.

6 **Figure 6: Two-Step DCF Results**

	Proxy Group
Lower Bound	8.53%
Lower Third	9.92%
Median	10.24%
Upper Third	10.39%
Upper Bound	11.60%

7 **Q30. PLEASE DESCRIBE THE CAPM APPROACH.**

8 A30. The CAPM is a risk premium approach that estimates the cost of equity for a given
 9 security as a function of a risk-free return plus a risk premium (to compensate investors for
 10 the non-diversifiable or “systematic” risk of that security).²⁴ As shown in the following
 11 equation, the CAPM is defined by four components, each of which must theoretically be a
 12 forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f)$$

13 where:

14 K_e = the required ROE for a given security;

15 ²⁴ 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_f = the risk-free rate of return;

2 β = the beta of an individual security; and

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

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

$$8 \quad \beta = \frac{\text{Covariance}(r_e, r_m)}{\text{Variance}(r_m)}$$

9 where:

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

11 The variance of the market return, noted in the above equation, is a measure of the
12 uncertainty of the general market, and the covariance between the return on a specific
13 security and the market reflects the extent to which the return on that security will respond
14 to a given change in the market return. Thus, beta represents the risk of the security relative
15 to the market.

16 **Q31. WHAT RISK-FREE RATE DID YOU USE IN YOUR CAPM ANALYSIS?**

17 A31. Consistent with FERC precedent, I have used the average 30-year Treasury bond yield for
18 the past six months (*i.e.*, 4.41 percent). As discussed in Section IV herein, while the
19 Federal Reserve recently reduced the federal funds rate, long-term interest rates are
20 expected to remain near current levels. As such, the current 30-year Treasury bond yield is
21 consistent with projections over the coming year.

22 **Q32. WHAT MEASURE OF BETA DID YOU USE IN YOUR CAPM ANALYSIS?**

23 A32. I relied on beta coefficients for the proxy group companies as reported by Value Line in
24 the most recent publication issued for each of the proxy group companies.

1 **Q33. WHAT MRP DID YOU USE IN YOUR CAPM ANALYSIS?**

2 A33. For the MRP component of the CAPM analysis, I conducted a constant growth DCF
3 analysis on each of the S&P 500 companies and calculated the expected total market
4 return, weighted by market capitalization. This total market return is based on current
5 dividend yields and the average of projected earnings growth rates as reported by Value
6 Line and Yahoo! Finance for all of the companies in the S&P 500. The forward-looking
7 MRP is calculated by subtracting the risk-free rate from the total market return. This
8 analysis results in an MRP of 7.10 percent, as shown in Schedule 3.2 (Attachment JCN-6).

9 **Q34. DID YOU DEVELOP THE MRP CONSISTENT WITH THE METHODOLOGY**
10 **OUTLINED BY THE COMMISSION IN OPINION NO. 569-A?**

11 A34. Yes, I applied the Commission's methodology from that Opinion, which calculates the
12 MRP based on the companies that comprise the S&P 500, excluding any non-dividend
13 paying companies, and any companies with a growth rate less than 0 percent or greater
14 than 20 percent.²⁵

15 While I applied the Commission's approach, I do not agree that it is necessary to
16 limit the growth rates used in the calculation of the overall market return. The purpose of
17 the MRP is to estimate the total return that investors would require for an investment in the
18 broad market, as measured by the S&P 500 Index. If an investor were to purchase an
19 investment that tracks the S&P 500 Index, the return that the investor would receive
20 includes companies that do not pay dividends, companies with high, low or negative
21 growth rates, companies that have reduced or eliminated their dividend, and companies
22 that might encounter financial distress or bankruptcy.

²⁵ Opinion No. 569-A, P 83.

1 In the context of the DCF model, companies that do not pay dividends can be
2 assumed to have a dividend yield of 0 percent; therefore, the total return is comprised
3 solely of its rate of capital appreciation, which is estimated by its earnings growth rate.
4 Additionally, some companies tend to use stock buybacks as a cash flow to investors rather
5 than dividends. In fact, evidence suggests “that the payout yield, which includes both
6 dividends and buybacks, is more predictive of changes in expected returns than the
7 dividend yield.”²⁶ Excluding a company due to its method of providing cash flows to
8 investors introduces a bias in the estimate of the market return because the S&P 500 Index
9 includes companies that have regularly employed stock buybacks, but not dividends. To
10 that point, approximately 100 companies included in the S&P 500 Index currently do not
11 pay dividends. Excluding 20 percent of the companies that comprise the S&P 500 is not
12 reflective of the overall market, but rather only a subset, which introduces bias.

13 Lastly, excluding a subset of companies from the MRP estimate introduces an
14 inconsistency with the estimates of beta, which are typically calculated by comparing the
15 relative volatility of a given company to an index of the overall market. Because these
16 indices include non-dividend paying companies and companies with growth rates outside
17 the range of 0 percent to 20 percent, using an MRP calculated for a different subset of the
18 market introduces an inconsistency between measures of the broad market as applied to
19 beta and the MRP. While FERC acknowledged a potential disconnect in calculating MRP
20 using the S&P 500 and betas using the New York Stock Exchange (“NYSE”) listed
21 companies (Value Line calculates betas against the NYSE), it did not acknowledge the

²⁶ Philip U. Straehl and Roger G. Ibbotson, *The Supply of Stock Returns: Adding Back Buybacks*, (Dec. 17, 2015), at 2, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2715098.

1 more significant bias of excluding several companies from the calculation of the MRP,
 2 without making a similar adjustment to betas.²⁷ Notwithstanding, I use FERC's approach
 3 in my analysis, which produces an expected market return of 11.51 percent, which
 4 combined with a risk-free rate of 4.41 percent, produced an MRP of 7.10 percent.

5 **Q35. HOW DOES THE MARKET RETURN ESTIMATE DEVELOPED USING THE**
 6 **COMMISSION'S METHODOLOGY COMPARE TO OTHER PUBLICATIONS**
 7 **THAT PROVIDE ESTIMATES OF THE IMPLIED MARKET RETURN?**

8 A35. The Commission's methodology produces an expected market return of 11.51 percent. As
 9 of October 4, 2024, a market return using S&P's published dividend yield of 1.30 percent
 10 and a growth rate of 14.74 percent produces a market return of 16.13 percent.²⁸ Therefore,
 11 using the Commission's methodology understates the cost of equity as compared to relying
 12 on the data published by S&P in its earnings and estimates report.

13 **Q36. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSES?**

14 A36. My CAPM results, using FERC's methodology and inputs, are shown in Schedule 3.1
 15 (Attachment JCN-5) and summarized in Figure 7.

16 **Figure 7: CAPM Results**

	Proxy Group
Lower Bound	10.38%
Lower Third	11.09%
Median	11.76%
Upper Third	11.97%
Upper Bound	13.03%

²⁷ Opinion No. 569-A, P 76.

²⁸ S&P Dow Jones Indices, S&P 500 Earnings and Estimate Report (September 13, 2024) Calculated as $1.30\% * (1 + 0.5 * 16.13\%) + 16.13\%$.

1 **Q37. PLEASE DESCRIBE YOUR RISK PREMIUM ANALYSIS.**

2 A37. In general terms, the Risk Premium approach recognizes that equity is riskier than debt
3 because equity investors bear the residual risk associated with ownership. Equity investors,
4 therefore, require a greater return (*i.e.*, a premium) than bondholders. The Risk Premium
5 approach estimates the cost of equity as the sum of the Equity Risk Premium and the yield
6 on a particular class of bonds, as reflected in the following formula, in which

7 $RP = \text{Risk Premium (difference between allowed ROE and the respective bond yield);}$

8 $Y = \text{Applicable bond yield; and}$

9 $ROE = RP + Y$

10 Because the Equity Risk Premium is not directly observable, it typically is
11 estimated using a variety of approaches, some of which incorporate ex-ante, or forward-
12 looking estimates of the cost of equity, and others that consider historical, or ex-post,
13 estimates. My Risk Premium analysis relies on FERC-authorized returns for electric
14 transmission companies since 2006, as shown in Schedule 4.2 (Attachment JCN-8). This is
15 consistent with FERC's prior practice.

16 To estimate the relationship between interest rates and the cost of equity using the
17 Risk Premium approach, a regression is conducted using the following equation, where a =
18 slope term and b = intercept term:

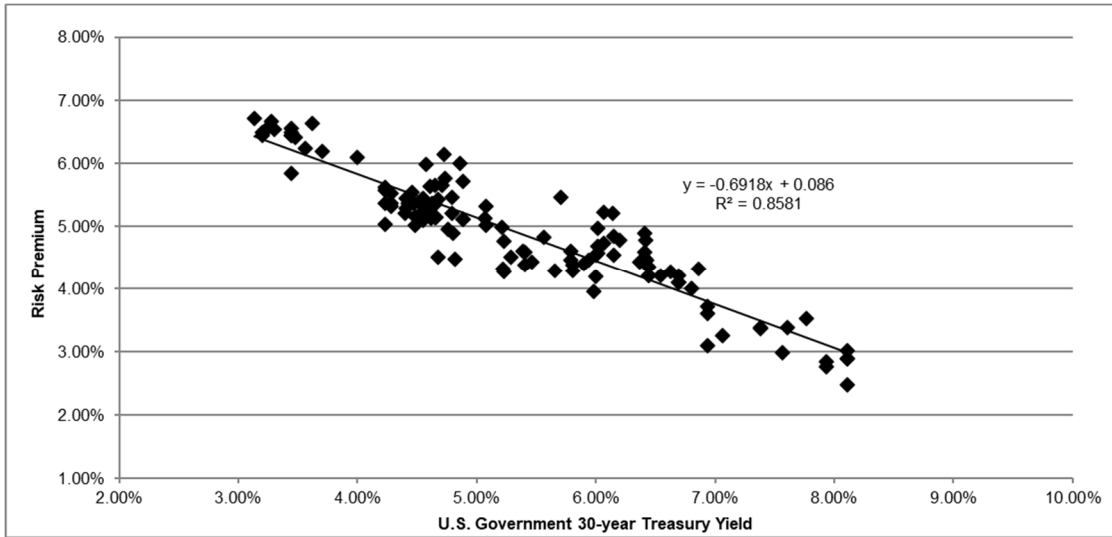
19 $RP = ax + b^{29}$

²⁹ Figure 8 contains the regression equation where RP is defined as "y," slope term "a" is equal to -0.696, and intercept term "b" is equal to 0.0863.

1 **Q38. WHAT DID YOUR RISK PREMIUM ANALYSIS REVEAL?**

2 A38. My Risk Premium analysis examines the relationship between FERC-authorized ROEs for
 3 electric transmission utilities and the respective Moody’s Baa Utility Bond Index Yield at
 4 the time of the decision. The results of that regression are detailed in Figure 8, below.

5 **Figure 8: Risk Premium Regression Results vs. 30-Year Treasury Yield³⁰**



6 As the chart illustrates, the risk premium varies with the level of the bond yield,
 7 and generally increases as bond yields decrease, and vice versa. Based on the regression
 8 coefficients in Figure 8, above,³¹ which allows for the estimation of the risk premium at
 9 varying bond yields, the results of my Risk Premium analysis are shown in Figure 9 below.

10 **Figure 9: Risk Premium Results**

	6-month Average Yield on Moody’s Baa Utility Index
Yield	5.80%
Risk Premium	4.59%
ROE	10.39%

³⁰ Figure 8 also appears in Schedule 4.1, along with detailed regression statistics (Attachment JCN-7).

³¹ Schedule 4.1 contains more detailed regression statistics (Attachment JCN-7).

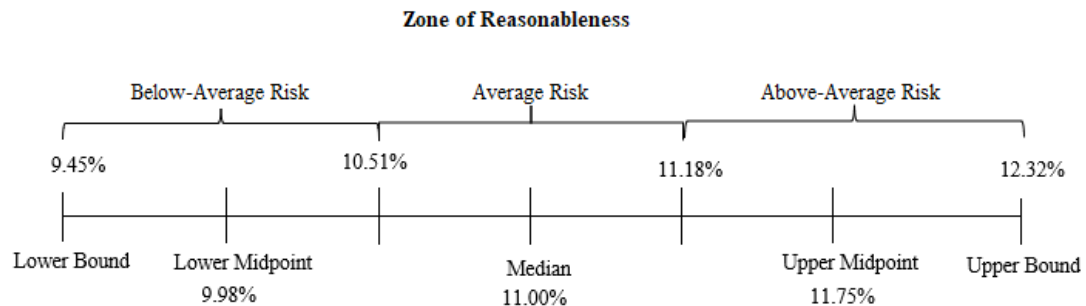
1 **Q39. WHY ARE AUTHORIZED ROES RELEVANT?**

2 A39. Authorized ROEs are a significant part of the market information that investors consider
 3 when evaluating their investment alternatives. The level of authorized ROE also provides a
 4 signal to investors about the level of regulatory support that a company can expect with
 5 regard to its ability to compete for capital and its financial integrity. And authorized ROEs
 6 provide a broad benchmark of returns available to other regulated electric utilities,
 7 consistent with the *Hope* and *Bluefield* “comparable return” standard. An improperly
 8 depressed ROE for a given period may be an impediment to SDG&E’s ability to attract
 9 capital and invest in the infrastructure necessary to provide safe and reliable electric
 10 service to its customers.

11 **Q40. HOW DID YOU CALCULATE THE ZONE OF REASONABLENESS FOR THE**
 12 **PROXY GROUP?**

13 A40. In the MISO Order on Remand, the Commission included the DCF and CAPM analyses to
 14 construct a composite zone of reasonableness, and then divided that zone into thirds. As
 15 shown in Figure 10 below, based on that precedent, the composite zone of reasonableness
 16 is 9.45 percent to 12.32 percent with a median of 11.00 percent.

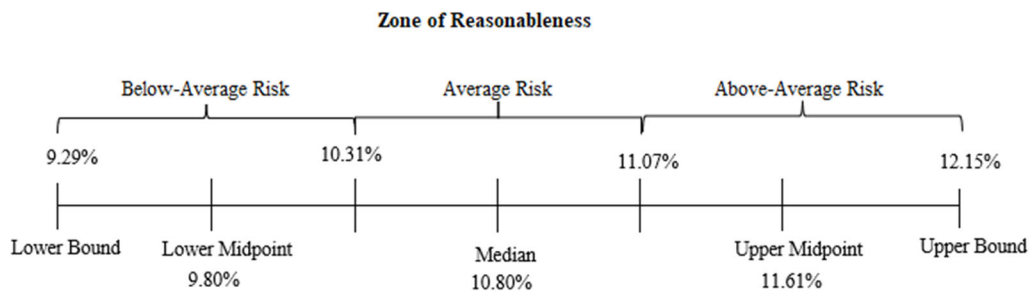
17 **Figure 10: Summary of Results³²**



18 ³² See Schedule 5 (Attachment JCN-9).

As noted, because the Commission has relied on the Risk Premium model in other decisions in recent years (*see e.g.*, Opinion Nos. 575³³ and 879,³⁴ and other recent orders³⁵) and the MISO Order on Remand did not “foreclose the use of a Risk Premium model in future proceedings,”³⁶ I also considered a composite zone of reasonableness including the DCF, CAPM, and Risk Premium analyses. As shown in Figure 11 below, based on that calculation, the composite zone of reasonableness is 9.29 percent to 12.15 percent with a median of 10.80 percent.

Figure 11: Summary of Results³⁷



³³ *Entergy Arkansas, Inc.*, Opinion No. 575, 175 FERC ¶ 61,136, PP 244-245, *order on reh'g*, 176 FERC ¶ 61,155 (2021).

³⁴ *DATC Path 15, LLC*, Opinion No. 879, 177 FERC ¶ 61,115, PP 24, 213-214 (2021).

³⁵ *Pac. Gas and Elec. Co.*, 178 FERC ¶ 61,175, PP 1, 20, 266 (2022); *Constellation Mystic Power, LLC*, 176 FERC ¶ 61,019, PP 15, 176, *order on reh'g*, 177 FERC ¶ 61,106 (2021), *order on reh'g*, 178 FERC ¶ 61,116 (2022).

³⁶ MISO Order on Remand, P 24.

³⁷ *See* Schedule 5 (Attachment JCN-9).

1 **VII. SDG&E'S RISK PROFILE**

2 **Q41. ARE THERE FACTORS SPECIFIC TO SDG&E'S RISK PROFILE THAT YOU**
3 **ALSO CONSIDERED IN DEVELOPING YOUR ROE RECOMMENDATION?**

4 A41. Yes, SDG&E's exposure to wildfire risks and wildfire liability elevates the Company's
5 risk profile relative to the average proxy group risk and would support an authorized ROE
6 in the upper third of the composite zone of reasonableness.

7 **Q42. PLEASE DESCRIBE THE RISKS THAT THE SDG&E FACES DUE TO THE**
8 **WILDFIRES?**

9 A42. As also discussed in the testimony of Bruce Folkmann, like most California investor-owned
10 electric utilities, wildfires present unique risks to SDG&E for two main reasons. First,
11 California faces a significant threat from wildfires and wildfires have become more frequent
12 and larger in magnitude over time, creating more opportunities for a utility's equipment to be
13 involved in an ignition.³⁸ Second, each time a California utility's equipment is involved in the
14 ignition of a fire that creates economic damages, that utility may face enormous uninsured
15 liabilities.

16 Under California state law, a legal standard known as inverse condemnation applies
17 when utility equipment is a cause of a wildfire ignition. This doctrine makes utilities strictly
18 liable for liability damages caused by their own facilities, regardless of negligence and other
19 causes.³⁹ These liabilities may include homeowner insurance claims, uninsured property

³⁸ See S&P, *San Diego Gas & Electric Co.* (Jun. 26, 2024) ("S&P Jun. 2024") at 8 ("Environmental factors are a negative consideration in our credit rating analysis of SDG&E, reflecting above-average physical risk compared with peers because of wildfires in California, which may also experience drought-like conditions.").

³⁹ See Moody's *San Diego Gas & Electric Co.*, (Dec. 4, 2023) ("Moody's Dec. 2023") at 7 (Under inverse condemnation, "utilities are strictly liable for damages from fires ignited by their equipment, regardless of fault or how reasonably they acted."); see also *San Diego Gas & Elec. Co.*, 146 FERC ¶ 63,017, P 60 (2014) ("under California law SDG&E would likely have been held responsible for [wildfire liability] costs irrespective of fault.").

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

3 **Q43. ARE THERE EXAMPLES OF SDG&E'S EXPOSURE TO WILDFIRE**
4 **DAMAGES?**

5 A43. Yes, in 2007, the Witch, Guejito, and Rice fires, were associated with SDG&E's
6 equipment.⁴⁰ SDG&E settled approximately \$2.4 billion of the \$4 billion in total damage
7 claims but SDG&E was only able to offset that liability with an insurance reimbursement of
8 \$1.1 billion, cost recovery of approximately \$80 million, and settlements with third parties of
9 \$827 million. As noted, wildfires in California have only become more destructive. Placing
10 SDG&E's above-mentioned 2007 wildfire experience in perspective, according to Cal Fire
11 data provided in Figure 12 below, fifteen of the State's twenty most destructive wildfires in
12 recorded history have been subsequent to those 2007 fires.⁴¹

⁴⁰ *San Diego Gas & Elec. Co.*, 146 FERC ¶ 63,017, PP 21-22 (2014).

⁴¹ See <http://large.stanford.edu/courses/2022/ph240/chundurur1/docs/calfire-24oct22.pdf>.


1

Figure 12: 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

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These statistics underscore the overall increased wildfire risk in the state and wildfire liability concerns. That is, the increase in wildfire risks and uncertainties regarding cost recovery in light of the application of inverse condemnation strict liability, which increases the amount of fires and damages subject to recovery, have led SDG&E’s credit ratings to be reduced at least two notches by all three credit rating agencies since 2018—despite SDG&E’s equipment not being the cause of any significant wildfire ignition during that time and despite those credit rating agencies repeatedly lauding SDG&E’s wildfire mitigation efforts.⁴²

⁴² See S&P, How are California’s Wildfire Risks Affecting Utility Credit Quality, (Jun. 3, 2021) (“S&P Jun. 2021”) at 5 (“[S&P views] the threat of wildfires in its service territory as high relative to that of

1 However, changes in credit rating do not fully capture the risk profile to equity
2 investors of a utility that, like SDG&E, is subject to catastrophic wildfire risks. Such
3 companies are exposed to the potential of massive losses due to liabilities that may exceed
4 the value of the utilities' equity, representing a significant downside risk that is essentially
5 unbounded. Wildfire financial risk is also entirely one-sided. While it represents an
6 extraordinarily large downside risk, there is no upside opportunity associated with this risk.

7 **Q44. CAN INSURANCE PRODUCTS MITIGATE THE FINANCIAL EXPOSURE TO**
8 **THESE RISKS?**

9 A44. Yes, to a point. However, SDG&E's ability to purchase insurance at a reasonable cost is
10 influenced by several factors, including state policy and future frequency of wildfires. Any
11 loss that exceeds the level of insurance coverage is subject to potential recovery in a
12 regulatory process, either at FERC or the CPUC. This translates into uncertainty, given
13 that insurance providers are not required to operate in California and doing so carries risk
14 since the state has experienced frequent wildfires. This contributes to SDG&E's
15 unmitigated financial risks.

16 **Q45. WHAT CALIFORNIA LEGISLATIVE ACTIONS HAVE BEEN TAKEN TO**
17 **ADDRESS THIS ISSUE?**

18 A45. California Assembly Bill 1054 ("AB 1054") was signed into law by Governor Newsom on
19 July 12, 2019, creating a \$21 billion Wildfire Fund through a combination of ratepayer and
20 shareholder fund to mitigate the effects of wildfire liabilities on utilities. There are three
21 primary sources of risk reduction created by the legislation:

its utility peers across North America"), and at 4-5 (calling SDG&E a "global leader in wildfire prevention").

- 1 1. Establishing a revised prudence standard for determining whether a utility's costs
2 and expenses arising from a covered wildfire are just and reasonable if the utility
3 possesses a valid safety certificate;
- 4 2. Creating liquidity through the creation of a Wildfire Fund that a utility can use to
5 pay claims. If a utility is found to have acted prudently it does not have to pay the
6 fund back; and
- 7 3. Establishing a cap on wildfire related expenses that have been found to be
8 imprudently incurred that a utility has to pay back to the fund equal to 20% of the
9 utility's transmission and distribution rate base.⁴³

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

13 **Q46. WHAT UNIQUE RISKS REMAIN AFTER THE PASSAGE OF AB 1054?**

14 A46. There are several significant wildfire risks remaining after the enactment of AB 1054 that
15 do not apply to utilities outside California, which would exclude all but one of the proxy
16 companies (Edison International) from this exposure. Principal among these are the
17 following:

- 18 1. The legal standard known as inverse condemnation was unchanged by AB 1054.
19 Under this doctrine, utilities remain strictly liable when their equipment is the cause
20 of a wildfire ignition, regardless of whether the utility acted reasonably and showed
21 no negligence. So even though AB 1054 may cap the utilities' ultimate liability,
22 this is a unique risk in California. Credit rating agencies continue to recognize this
23 doctrine as a credit constraint, and equity analysts continue to apply a discount to
24 Sempra's stock price based on inverse condemnation's continuation.
- 25 2. There are ongoing concerns about the Wildfire Fund's durability because the fund
26 does not have a replenishment mechanism. As noted, the Fund was created by a
27 combination of State and utility funding totaling \$21 billion. Governor Newsome's
28 Strike Force retained an energy advisory firm, Filsinger Energy Partners,
29 ("Filsinger") to measure the probability of exhausting the Wildfire Fund. Filsinger
30 estimated various probabilities for the Fund's exhaustion, ranging from 0.1% to
31 21.9% by the year 2035, depending on the likelihood of the CPUC finding a utility
32 to be imprudent (Filsinger's estimated that the amount of prudence findings would
33 range from 25% to 75%). This assumed a median wildfire loss of \$7 billion per

⁴³ Moody's Dec. 2023 at 7-8.

1 year based upon the experience of the previous five years. If the Fund is exhausted,
2 the risk 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 concern, it
4 is a risk that weighs down SDG&E's current credit ratings.

5 3. Under AB 1054, a utility's insurance coverage is subject to a recommendation of
6 "reasonable insurance coverage" by the Fund Administrator. If the Administrator
7 should recommend a lower insurance level, and if adopted by FERC, the utility's
8 shareholders would be subject to greater risk.

9 4. 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" or if a utility does not possess a
13 safety certificate.

14 Lastly, it must be recognized that the magnitude of wildfire risk is unique to
15 California. Post AB 1054, the state's utilities will still bear more risk than their industry
16 peers. In other words, the higher overall number and risk of wildfires, the higher the risk
17 that a utility's equipment will be involved in one ignition. As S&P 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 a
20 long history of drought conditions, we are unlikely to raise ratings for utilities with
21 meaningful wildfire-related risks in the near term."⁴⁴ S&P has also added that, despite
22 viewing SDG&E as a "global leader in wildfire prevention," S&P assesses SDG&E's
23 business risk profile at the "lower end of our range for the excellent category" because "the
24 threat of wildfires in its service territory [i]s high relative to that of its utility peers across
25 North America."⁴⁵ Moody's likewise states that, exposure to wildfire risk continues to
26 "temper [SDG&E's] credit quality," resulting from the "combination of (i) server wind

⁴⁴ See S&P Jun. 2021 at 10.

⁴⁵ S&P Jun. 2024 at 4-5.

1 events; (ii) growing housing developments in fire-prone areas; and (iii) the California
 2 courts' application of the inverse condemnation doctrine, which heightens the utilities' risk
 3 exposure to property damage."⁴⁶

4 As a result, the combination of risk-reducing elements of the legislation and these
 5 remaining uncertainties following implementation cannot be measured within a standard
 6 industry peer group.

7 VIII. CONCLUSIONS AND RECOMMENDATIONS

8 Q47. PLEASE SUMMARIZE YOUR ANALYTICAL RESULTS?

9 A47. Figure 13 below summarizes my analytical results.

10 **Figure 13: Cost of Capital Summary**

Model	Lower Third	Lower Equal Third	Median	Upper Equal Third	Midpoint of Upper Third	Upper Third
Two-Step DCF	8.53%	9.92%	10.24%	10.39%	10.99%	11.60%
CAPM	10.38%	11.09%	11.76%	11.97%	12.50%	13.03%
Risk Premium	8.96%	9.91%	10.39%	10.87%	11.34%	11.82%
Three-Model Average	9.29%	10.31%	10.80%	11.07%	11.61%	12.15%
Two-Model Average	9.45%	10.51%	11.00%	11.18%	11.75%	12.32%
Recommended Base ROE						11.75%
RTO Participation Adder						0.50%
ROE Recommendation						12.25%

11
 46 Moody's Dec. 2023 at 1, 7. As discussed further in the testimony of Bruce Folkmann, SDG&E also faces additional unique risks. *See id.* at 1 (noting that "SDG&E's credit is also constrained by our view that political risk, in terms of media attention and the demand on utilities to implement the state's clean energy policy goals, is higher in California compared to most other jurisdictions in the US.") [clarification added].

1 **Q48. WHAT IS YOUR RECOMMENDED ROE FOR SDG&E?**

2 A48. In Opinion 569-A, the Commission determined that it is appropriate to divide the
3 composite zone of reasonableness into thirds, and “the traditional starting points for below-
4 average and above-average risk utilities to be the midpoint of the lower and upper thirds,
5 respectively.”⁴⁷ As described in Section VII, SDG&E’s exposure to wildfire risks elevates
6 the Company’s risk profile relative to the average proxy group risk and would support an
7 authorized ROE in the upper third of the composite zone of reasonableness. Given that
8 SDG&E is exposed to risks associated with wildfires that have become more frequent and
9 larger in magnitude over time and there is the potential for substantial economic damages
10 from uninsured liabilities, an ROE at the midpoint of the upper third of the composite zone
11 of reasonableness is appropriate. Considering the added risk associated with wildfire
12 liabilities, I believe that SDG&E’s authorized ROE should be set at 11.75 percent. This
13 represents a fair determination of SDG&E cost of equity and should be adopted by FERC.

14 In addition to the analyses discussed above, SDG&E’s applicable ROE incentives
15 would be incremental to the base ROE, up to the top end of the zone of reasonableness of
16 12.32 percent. This brings my overall ROE recommendation to 12.25 percent (two-model
17 base ROE of 11.75 percent plus 50 basis points for the RTO Adder).

18 **Q49. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

19 A49. Yes.
20

⁴⁷ Opinion No. 569-A, P 194.

VERIFICATION

Joshua C. Nowak hereby declares under penalty of perjury of the laws of the United States that the foregoing document is true and correct to the best of his knowledge and belief. *See* 28 U.S.C. § 1746.

Executed this 30th day of October, 2024

/s/ Joshua C. Nowak

Joshua C. Nowak

ATTACHMENT JCN – 1

SUMMARY OF PROFESSIONAL AND EDUCATIONAL BACKGROUND

JOSHUA C. NOWAK
VICE PRESIDENT

Mr. Nowak is a financial and economic consultant with more than fifteen years of experience in the energy industry. He has provided expert testimony on regulatory issues in several proceedings before the Federal Energy Regulatory Commission and regulatory commissions in Alaska, California, Connecticut, Kentucky, Minnesota, New Brunswick, New Hampshire, New York, North Dakota, Ohio, and Texas. Mr. Nowak specializes in providing rate case services on economic conditions and financial market matters related to the cost of capital. He is also experienced in providing strategic direction on financing activities including bond offerings, credit rating analysis, and investor relations. Previously, Josh was the Director of Regulatory Strategy & Integrated Analytics at National Grid where he was responsible for issues related to the cost of capital across its federal and state jurisdictional operating companies. He holds a Bachelor's Degree in Economics and History from Boston College.

REPRESENTATIVE EXPERIENCE

Expert Testimony and Litigation Support

Mr. Nowak's work includes regulatory project management, research, and analysis for expert witness testimony. His work has included:

- Expert testimony on cost of capital, financial markets, return on equity, capital structure, and debt financing issues
- Regulatory strategy in return on equity proceedings, including coordination across several utilities in joint-party proceedings
- Extensive support for expert testimony in cost of capital and return on equity proceedings through research, financial analysis, and testimony development
- Expert testimony, sponsoring lead-lag studies, in support of utility cash working capital requirements
- Project management of expert testimony assignments, including all phases of the regulatory schedule
- Performing analysis to support expert testimony regarding affiliate expenses and allocations

Policy Analysis

Mr. Nowak has contributed to projects related to policy review including:

- A review of natural gas capacity options and a cost-benefit analysis for state regulators seeking to reduce energy costs for ratepayers
- Analysis of the economic and environmental benefits of changes to natural gas ratemaking/expansion policy



Management and Operations Consulting

Mr. Nowak has taken a lead analytical role in developing benchmarking analyses and process reviews. Specifically, he has:

- Developed benchmarking analyses, in support of expert testimony, comparing electric and gas utilities' cost and operational efficiency, taking into account a situational assessment of exogenous factors
- Performed a process review of a gas utility's expansion projects, including an evaluation of policies, procedures, and financial models
- Supported analysis for a report of the reasonableness of a shared service company's administrative and general costs

Financial Analysis

Other financial analysis Mr. Nowak has conducted include:

- Extensive analysis on issues related to utilities' cost of capital
- Developing dispatch models to estimate revenues for merchant powerplants
- Estimating damages for breach of contract in fuel delivery commitment
- Researching strategic investment opportunities for merchant generators
- A report on the profitability of various generation technologies in a deregulated energy market
- Reviewing internal financial models used by utility clients
- Supporting utility asset appraisals, including research and analysis for income approach, cost approach, and sales comparison approach

Other Experience

In his previous work, Mr. Nowak contributed to the evaluation of regulatory policy for government clients. His experience included performing policy analysis, including economic impact assessments, for federal regulations.

PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2018 – Present)

Vice President

Assistant Vice President

National Grid USA (2017 – 2018)

Director, Regulatory Strategy & Integrated Analytics

ScottMadden, Inc. (formerly Sussex Economic Advisors, LLC) (2012 – 2016)

Director

Principal



Concentric Energy Advisors, Inc. (2007 – 2012)

Senior Consultant

Consultant

Assistant Consultant

Analyst

RTI International (2006 – 2007)

Economist

EDUCATION

Boston College

B.A., Economics and History, 2006

SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Regulatory Commission of Alaska				
ENSTAR Natural Gas Company, a Division of Semco Energy, Inc.	06/16	ENSTAR Natural Gas Company, a Division of Semco Energy, Inc.	TA 285-4	Cash Working Capital
California Public Utilities Commission				
Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company, and San Diego Gas & Electric Company	02/24	Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company, and San Diego Gas & Electric Company	A.22-04-008 / A.22-04-009 / A.22-04-011 / A.22-04-012	Return on Equity Policy
Southern California Gas Company and San Diego Gas & Electric Company	01/24	Southern California Gas Company and San Diego Gas & Electric Company	A.22-04-011 / A.22-04-012	Return on Equity Policy
Connecticut Public Utilities Regulatory Authority				
Aquarion Water Company of Connecticut	08/22	Aquarion Water Company of Connecticut	Docket No. 22-07-01	Return on Equity
Aquarion Water Company of Connecticut	01/22	Aquarion Water Company of Connecticut	Docket No. 13-02-20RE06	Return on Equity and Cost of Debt
Federal Energy Regulatory Commission				
Power Authority of the State of New York	10/24	Power Authority of the State of New York	ER25-198-000	Return on Equity
Mid-Atlantic Offshore Development, LLC	07/24	Mid-Atlantic Offshore Development, LLC	ER24-2564-000	Return on Equity



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Niagara Mohawk Power Corporation d/b/a National Grid, New York State Electric & Gas Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation	04/21	Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Niagara Mohawk Power Corporation d/b/a National Grid, New York State Electric & Gas Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation	EL21-66-000, ER21-1647-000	Transmission Ownership Risk and Returns
Central Hudson Gas & Electric Corporation	12/19	Central Hudson Gas & Electric Corporation	ER20-715-000	Return on Equity
Kentucky Public Service Commission				
Duke Energy Kentucky, Inc.	12/22	Duke Energy Kentucky, Inc.	Case No. 2022-00372	Return on Equity
Minnesota Public Utilities Commission				
Northern States Power Company (Xcel Energy Inc.)	11/23	Northern States Power Company (Xcel Energy Inc.)	G-002/GR-23-413	Return on Equity
New Brunswick Energy and Utilities Board				
New Brunswick Power Corporation (NB Power)	11/22	New Brunswick Power Corporation (NB Power)	Matter 541	Macroeconomic Environment and Capital Market Conditions
Public Utilities Commission of New Hampshire				
Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities	04/16	Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities	Docket No. DE 16-383	Cash Working Capital



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
New York Public Service Commission				
Central Hudson Gas & Electric Corporation	08/24	Central Hudson Gas & Electric Corporation	Case 24-E-0461/ Case 24-G-0462	Return on Equity
Niagara Mohawk Power Corporation d/b/a National Grid	05/24	Niagara Mohawk Power Corporation d/b/a National Grid	Case 24-E-0322/ Case 24-G- 0323	Return on Equity
National Fuel Gas Distribution Corporation	10/23	National Fuel Gas Distribution Corporation	Case 23-G-0627	Return on Equity
Central Hudson Gas & Electric Corporation	07/23	Central Hudson Gas & Electric Corporation	Case 23-E-0418/ Case 23-G-0419	Return on Equity
The Brooklyn Union Gas Company d/b/a National Grid NY ("KEDNY) and KeySpan Gas East Corporation d/b/a National Grid ("KEDLI")	04/23	The Brooklyn Union Gas Company d/b/a National Grid NY ("KEDNY) and KeySpan Gas East Corporation d/b/a National Grid ("KEDLI")	Case 23-G-0225/ Case 23-G-0226	Return on Equity
Niagara Mohawk Power Corporation d/b/a National Grid	07/20	Niagara Mohawk Power Corporation d/b/a National Grid	Case 20-E-0380/ Case 20-G- 0381	Return on Equity
Niagara Mohawk Power Corporation d/b/a National Grid	07/17	Niagara Mohawk Power Corporation d/b/a National Grid	Case 17-E-0238/ Case 17-G- 0239	Capital Structure and Overall Cost of Capital



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
North Dakota Public Service Commission				
Northern States Power Company (Xcel Energy Inc.)	12/23	Northern States Power Company (Xcel Energy Inc.)	Docket No. PU-23-367	Return on Equity
Public Utilities Commission of Ohio				
Duke Energy Ohio, Inc.	01/23	Duke Energy Ohio, Inc.	Case No. 22-1153-EL-UNC	Return on Equity
Public Utility Commission of Texas				
Wind Energy Transmission Texas, LLC	05/15	Wind Energy Transmission Texas, LLC	Docket No. 44746	Cash Working Capital
Lone Star Transmission, LLC	05/14	Lone Star Transmission, LLC	Docket No. 42469	Cash Working Capital
Railroad Commission of Texas				
Texas Gas Service Company, a Division of One Gas, Inc.	06/16	Texas Gas Service Company, a Division of One Gas, Inc.	GUD No. 10526	Cash Working Capital
Texas Gas Service Company, a Division of One Gas, Inc.	03/16	Texas Gas Service Company, a Division of One Gas, Inc.	GUD No. 10506	Cash Working Capital
Texas Gas Service Company, a Division of One Gas, Inc.	12/15	Texas Gas Service Company, a Division of One Gas, Inc.	GUD No. 10488	Cash Working Capital
CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	03/14	CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD No. 10432	Cash Working Capital

ATTACHMENT JCN – 2

PROXY GROUP SCREENING DATA AND RESULTS – SCHEDULE 1

PROXY GROUP SCREENING DATA AND RESULTS

	[1]	[2]	[3]	[4]	[5]	
Company	Ticker	Pays Dividends, No Reductions or Cuts in Study Period	S&P Credit Rating	Moody's Credit Rating	Engaged in Merger during Study Period (2/29/2024 through 8/31/2024)	In Proxy Group
ALLETE, Inc.	ALE	Yes	BBB	Baa1	Yes	
Alliant Energy Corporation	LNT	Yes	A-	Baa2	No	Yes
Ameren Corporation	AEE	Yes	BBB+	Baa1	No	Yes
American Electric Power Company, Inc.	AEP	Yes	BBB+	Baa2	No	Yes
Avangrid, Inc.	AGR	Yes	BBB+	Baa2	Yes	
Avista Corporation	AVA	Yes	BBB	Baa2	No	Yes
Black Hills Corporation	BKH	Yes	BBB+	Baa2	No	Yes
CenterPoint Energy, Inc.	CNP	Yes	BBB+	Baa2	Yes	
CMS Energy Corporation	CMS	Yes	BBB+	Baa2	No	Yes
Consolidated Edison, Inc.	ED	Yes	A-	Baa1	No	Yes
Dominion Resources, Inc.	D	Yes	BBB+	Baa2	Yes	
DTE Energy Company	DTE	Yes	BBB+	Baa2	No	Yes
Duke Energy Corporation	DUK	Yes	BBB+	Baa2	No	Yes
Edison International	EIX	Yes	BBB	Baa2	No	Yes
Entergy Corporation	ETR	Yes	BBB+	Baa2	No	Yes
Eversource Energy	ES	Yes	A-	Baa2	Yes	
Exelon Corporation	EXC	Yes	BBB+	Baa2	No	Yes
FirstEnergy Corporation	FE	Yes	BBB	Baa3	Yes	
Evergy, Inc.	EVRG	Yes	BBB+	Baa2	No	Yes
Hawaiian Electric Industries, Inc.	HE	No	B-	B1	No	
IDACORP, Inc.	IDA	Yes	BBB	Baa2	No	Yes
MGE Energy, Inc.	MGEE	Yes	AA- [5]	A1 [5]	No	
NextEra Energy, Inc.	NEE	Yes	A-	Baa1	No	Yes
NorthWestern Corporation	NWE	Yes	BBB	Baa2	No	Yes
OGE Energy Corporation	OGE	Yes	BBB+	Baa1	No	Yes
Otter Tail Corporation	OTTR	Yes	BBB	Baa2	No	Yes
PG&E Corporation	PCG	No	BB	Ba1	No	
Pinnacle West Capital Corporation	PNW	Yes	BBB+	Baa2	No	Yes
Portland General Electric Company	POR	Yes	BBB+	A3	No	Yes
PPL Corporation	PPL	Yes	A-	Baa1	No	Yes
Public Service Enterprise Group Inc.	PEG	Yes	BBB+	Baa2	No	Yes
Sempra Energy	SRE	Yes	BBB+	Baa2	No	Parent
Southern Company	SO	Yes	A-	Baa1	No	Yes
TXNM Energy, Inc.	TXNM	Yes	BBB	Baa3	No	
Wisconsin Energy Corporation	WEC	Yes	A-	Baa1	No	Yes
Xcel Energy Inc.	XEL	Yes	BBB+	Baa1	No	Yes

25

Notes:

[1] Source: Bloomberg Professional

[2] Source: S&P Capital IQ Pro

[3] Source: S&P Capital IQ Pro

[4] Source: S&P Capital IQ Pro

[5] MGE Energy, Inc. is not rated. Rating for its primary subsidiary, Madison Gas and Electric Company

ATTACHMENT JCN – 3
DCF ANALYSIS – SCHEDULE 2.1

DCF ANALYSIS

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
Company		Average Dividend Yield	Expected Dividend Yield	Yahoo! Finance Near Term Growth	GDP Growth	Average Weighted 2 Stage Growth	ROE	Outliers
Alliant Energy Corporation	LNT	3.61%	3.75%	7.70%	4.17%	6.99%	10.75%	
Ameren Corporation	AEE	3.52%	3.63%	6.20%	4.17%	5.79%	9.42%	
American Electric Power Company, Inc.	AEP	3.81%	3.93%	6.62%	4.17%	6.13%	10.06%	
Avista Corporation	AVA	5.16%	5.32%	6.20%	4.17%	5.79%	11.12%	
Black Hills Corporation	BKH	4.62%	4.63%	0.70%	4.17%	1.39%	6.03%	x
CMS Energy Corporation	CMS	3.27%	3.40%	7.60%	4.17%	6.91%	10.31%	
Consolidated Edison, Inc.	ED	3.46%	3.56%	5.70%	4.17%	5.39%	8.96%	
DTE Energy Company	DTE	3.52%	3.61%	5.10%	4.17%	4.91%	8.53%	
Duke Energy Corporation	DUK	3.93%	4.06%	6.66%	4.17%	6.16%	10.22%	
Edison International	EIX	4.08%	4.25%	8.15%	4.17%	7.35%	11.60%	
Entergy Corporation	ETR	4.01%	4.15%	7.07%	4.17%	6.49%	10.64%	
Exelon Corporation	EXC	4.08%	4.17%	4.75%	4.17%	4.63%	8.81%	
Eergy, Inc.	EVRG	4.63%	4.77%	6.35%	4.17%	5.91%	10.69%	
IDACORP, Inc.	IDA	3.43%	3.53%	5.50%	4.17%	5.23%	8.76%	
NextEra Energy, Inc.	NEE	2.78%	2.90%	8.20%	4.17%	7.39%	10.29%	
NorthWestern Corporation	NWE	5.01%	5.16%	6.10%	4.17%	5.71%	10.87%	
OGE Energy Corporation	OGE	4.54%		Negative	4.17%			x
Otter Tail Corporation	OTTR	2.14%	2.23%	9.00%	4.17%	8.03%	10.27%	
Pinnacle West Capital Corporation	PNW	4.40%	4.56%	7.20%	4.17%	6.59%	11.15%	
Portland General Electric Company	POR	4.37%	4.64%	12.60%	4.17%	10.91%	15.55%	x
PPL Corporation	PPL	3.53%	3.65%	6.80%	4.17%	6.27%	9.92%	
Public Service Enterprise Group Inc.	PEG	3.19%	3.29%	5.90%	4.17%	5.55%	8.84%	
Southern Company	SO	3.58%	3.71%	7.30%	4.17%	6.67%	10.39%	
Wisconsin Energy Corporation	WEC	3.95%	4.07%	5.86%	4.17%	5.52%	9.59%	
Xcel Energy Inc.	XEL	3.86%	3.99%	6.73%	4.17%	6.22%	10.21%	
MEAN		3.86%	3.96%	6.67%			10.06%	
MEDIAN		3.86%	3.96%	6.64%			10.24%	
						Zone of Reasonableness High:	11.60%	
						Upper Third	10.39%	
						Median	10.24%	
						Lower Third	9.92%	
						Zone of Reasonableness Low:	8.53%	
						Upper Threshold [7]	20.49%	
						Lower Threshold [7]	7.22%	

Notes:

[1] Six month average dividend yields - April 1, 2024 through September 30, 2024

[2] Equals Column [1] x (1 + (0.5 x Column [5]))

[3] Yahoo! Finance dated September 30, 2024

[4] Source: Schedule 2.2

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

[6] Equals Column [2] + Column [5]

[7] Per FERC precedent, results less than the cost of debt (Moody's Baa-rated Utility Bond Index six-month average plus 20% of MRP) or more than 200% of proxy group median are excluded from consideration

DCF ANALYSIS

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
Company		Average Dividend Yield	Expected Dividend Yield	Yahoo! Finance Near Term Growth	GDP Growth	Average Weighted 2 Stage Growth	ROE	Outliers
Alliant Energy Corporation	LNT	3.61%	3.75%	7.70%	4.17%	6.99%	10.75%	
Ameren Corporation	AEE	3.52%	3.63%	6.20%	4.17%	5.79%	9.42%	
American Electric Power Company, Inc.	AEP	3.81%	3.93%	6.62%	4.17%	6.13%	10.06%	
Avista Corporation	AVA	5.16%	5.32%	6.20%	4.17%	5.79%	11.12%	
Black Hills Corporation	BKH	4.62%	4.63%	0.70%	4.17%	1.39%	6.03%	x
CMS Energy Corporation	CMS	3.27%	3.40%	7.60%	4.17%	6.91%	10.31%	
Consolidated Edison, Inc.	ED	3.46%	3.56%	5.70%	4.17%	5.39%	8.96%	
DTE Energy Company	DTE	3.52%	3.61%	5.10%	4.17%	4.91%	8.53%	
Duke Energy Corporation	DUK	3.93%	4.06%	6.66%	4.17%	6.16%	10.22%	
Edison International	EIX	4.08%	4.25%	8.15%	4.17%	7.35%	11.60%	
Entergy Corporation	ETR	4.01%	4.15%	7.07%	4.17%	6.49%	10.64%	
Exelon Corporation	EXC	4.08%	4.17%	4.75%	4.17%	4.63%	8.81%	
Eversource Energy, Inc.	EVRG	4.63%	4.77%	6.35%	4.17%	5.91%	10.69%	
IDACORP, Inc.	IDA	3.43%	3.53%	5.50%	4.17%	5.23%	8.76%	
NextEra Energy, Inc.	NEE	2.78%	2.90%	8.20%	4.17%	7.39%	10.29%	
NorthWestern Corporation	NWE	5.01%	5.16%	6.10%	4.17%	5.71%	10.87%	
OGE Energy Corporation	OGE	4.54%		Negative	4.17%			x
Otter Tail Corporation	OTTR	2.14%	2.23%	9.00%	4.17%	8.03%	10.27%	
Pinnacle West Capital Corporation	PNW	4.40%	4.56%	7.20%	4.17%	6.59%	11.15%	
Portland General Electric Company	POR	4.37%	4.64%	12.60%	4.17%	10.91%	15.55%	x
PPL Corporation	PPL	3.53%	3.65%	6.80%	4.17%	6.27%	9.92%	
Public Service Enterprise Group Inc.	PEG	3.19%	3.29%	5.90%	4.17%	5.55%	8.84%	
Southern Company	SO	3.58%	3.71%	7.30%	4.17%	6.67%	10.39%	
Wisconsin Energy Corporation	WEC	3.95%	4.07%	5.86%	4.17%	5.52%	9.59%	
Xcel Energy Inc.	XEL	3.86%	3.99%	6.73%	4.17%	6.22%	10.21%	
MEAN		3.86%	3.96%	6.67%			10.06%	
MEDIAN		3.86%	3.96%	6.64%			10.24%	
						Zone of Reasonableness High:	11.60%	
						Upper Third	10.39%	
						Median	10.24%	
						Lower Third	9.92%	
						Zone of Reasonableness Low:	8.53%	
						Upper Threshold [7]	20.49%	
						Lower Threshold [7]	7.22%	

Notes:

[1] Six month average dividend yields - April 1, 2024 through September 30, 2024

[2] Equals Column [1] x (1 + (0.5 x Column [5]))

[3] Yahoo! Finance dated September 30, 2024

[4] Source: Schedule 2.2

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

[6] Equals Column [2] + Column [5]

[7] Per FERC precedent, results less than the cost of debt (Moody's Baa-rated Utility Bond Index six-month average plus 20% of MRP) or more than 200% of proxy group median are excluded from consideration

ATTACHMENT JCN – 4

LONG-TERM GDP GROWTH ESTIMATE – SCHEDULE 2.2

LONG-TERM GDP GROWTH ESTIMATE

**Long-Term
U.S. Gross Domestic Product (GDP)
Growth Forecasts**

	[A]	[B]	[C]
Source	Beginning Year	Ending Year	Annual GDP Growth
BCFF [1]	2025	2033	4.14%
EIA [2]	2024	2050	4.30%
SSA [3]	2024	2075	4.07%
Average			4.17%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 6, June 1, 2024, at 14. Nominal GDP = (Real GDP) * (GDP Chained Price Index)

[2] Energy Information Administration Annual Energy Outlook 2023 with projections to 2050, March 2023, Table A20. Macroeconomic Indicators. Nominal GDP=(Real GDP)*(GDP Chain Type Price Index). https://www.eia.gov/outlooks/aeo/tables_ref.php

[3] Social Security Administration: The 2023 OASDI Trustees Report, Table VI.G4.—OASDI and HI Annual and Summarized Income, Cost, and Balance as a Percentage of GDP, Calendar Years 2023-2100 <https://www.ssa.gov/OACT/TR/2023>

ATTACHMENT JCN – 5
CAPM ANALYSIS – SCHEDULE 3.1

CAPM ANALYSIS

	[4]	[5]	[7]
Risk Free Rate [1]		4.41%	
Market Return [2]		11.51%	
Market Risk Premium [3]		7.10%	

		Value Line Beta	Unadjusted CAPM	Small size premium	Adjusted CAPM	Outliers
Alliant Energy Corporation	LNT	0.90	10.80%	0.61%	11.40%	
Ameren Corporation	AEE	0.90	10.80%	0.46%	11.26%	
American Electric Power Company, Inc.	AEP	0.85	10.44%	-0.06%	10.38%	
Avista Corporation	AVA	0.95	11.15%	1.21%	12.36%	
Black Hills Corporation	BKH	1.05	11.86%	0.95%	12.81%	
CMS Energy Corporation	CMS	0.85	10.44%	0.46%	10.90%	
Consolidated Edison, Inc.	ED	0.80	10.09%	0.46%	10.55%	
DTE Energy Company	DTE	1.00	11.51%	0.46%	11.97%	
Duke Energy Corporation	DUK	0.90	10.80%	-0.06%	10.74%	
Edison International	EIX	1.00	11.51%	0.46%	11.97%	
Entergy Corporation	ETR	1.00	11.51%	0.46%	11.97%	
Exelon Corporation	EXC	NMF	NA	-0.06%		x
Energy, Inc.	EVRG	0.95	11.15%	0.61%	11.76%	
IDACORP, Inc.	IDA	0.85	10.44%	0.64%	11.09%	
NextEra Energy, Inc.	NEE	1.05	11.86%	-0.06%	11.80%	
NorthWestern Corporation	NWE	0.95	11.15%	0.95%	12.10%	
OGE Energy Corporation	OGE	1.05	11.86%	0.64%	12.51%	
Otter Tail Corporation	OTTR	0.95	11.15%	0.95%	12.10%	
Pinnacle West Capital Corporation	PNW	0.95	11.15%	0.61%	11.76%	
Portland General Electric Company	POR	0.95	11.15%	0.64%	11.80%	
PPL Corporation	PPL	1.15	12.57%	0.46%	13.03%	
Public Service Enterprise Group Inc.	PEG	0.95	11.15%	-0.06%	11.09%	
Southern Company	SO	0.95	11.15%	-0.06%	11.09%	
Wisconsin Energy Corporation	WEC	0.85	10.44%	0.46%	10.90%	
Xcel Energy Inc.	XEL	0.85	10.44%	0.46%	10.90%	
MEAN		0.944			11.59%	
MEDIAN		0.950			11.76%	

Zone of Reasonableness High:	13.03%
Upper Third	11.97%
Median	11.76%
Lower Third	11.09%
Zone of Reasonableness Low:	10.38%
Upper Threshold [8]	23.52%
Lower Threshold [8]	7.22%

Notes

[1] Source: Schedule 4.1

[2] Source: Schedule 3.2

[3] Source: Equals [2] - [1]

[4] Source: Bloomberg Professional

[5] Equals (Column [5], Line [1]) + Column [4] x (Column [5], Line [3])

[6] Equals (Column [6], Line [1]) + Column [4] x (Column [6], Line [3])

[7] Equals (Column [7], Line [1]) + Column [4] x (Column [7], Line [3])

[8] Per FERC precedent, results less than the cost of debt (Moody's Baa-rated Utility Bond Index six-month average plus 20% of MRP) or more than 200% of proxy group median are excluded from consideration

ATTACHMENT JCN – 6

**MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH
ESTIMATES – SCHEDULE 3.2**

MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.68%
[2] Estimated Weighted Average Long-Term Growth Rate	9.74%
[3] S&P 500 Estimated Required Market Return	11.51%
[4] Risk-Free Rate	4.41%
[5] Implied Market Risk Premium	7.10%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
LyondellBasell Industries NV	LYB	0.09%	5.59	0.01%	7.25	-1.00	3.13	0.00%
American Express Co	AXP	0.57%	1.03	0.01%	15.65	9.00	12.33	0.07%
Verizon Communications Inc	VZ	0.56%	6.03	0.03%	0.76	0.50	0.63	0.00%
Broadcom Inc	AVGO	n/a	1.23	n/a	19.90	30.00	24.95	n/a
Boeing Co/The	BA	n/a	n/a	n/a	252.20		252.20	n/a
Solventum Corp	SOLV	n/a	n/a	n/a				n/a
Caterpillar Inc	CAT	0.56%	1.44	0.01%	5.30	11.50	8.40	0.05%
JPMorgan Chase & Co	JPM	1.77%	2.37	0.04%	1.66	7.00	4.33	0.08%
Chevron Corp	CVX	0.80%	4.43	0.04%	3.60	5.00	4.30	0.03%
Coca-Cola Co/The	KO	0.92%	2.70	0.02%	6.07	7.00	6.54	0.06%
AbbVie Inc	ABBV	1.03%	3.14	0.03%	6.26	4.00	5.13	0.05%
Walt Disney Co/The	DIS	0.52%	0.94	0.00%	15.81	21.50	18.66	0.10%
Corpay Inc	CPAY	n/a	n/a	n/a	13.06	13.50	13.28	n/a
Extra Space Storage Inc	EXR	0.11%	3.60	0.00%	6.00	5.00	5.50	0.01%
Exxon Mobil Corp	XOM	1.54%	3.24	0.05%	5.20	-3.00	1.10	0.02%
Phillips 66	PSX	n/a	3.50	n/a	-4.60	0.50	-2.05	n/a
General Electric Co	GE	n/a	0.59	n/a	29.35	22.00	25.68	n/a
HP Inc	HPQ	0.10%	3.07	0.00%	4.10	12.50	8.30	0.01%
Home Depot Inc/The	HD	1.19%	2.22	0.03%	3.80	6.50	5.15	0.06%
Monolithic Power Systems Inc	MPWR	0.13%	0.54	0.00%	25.00	10.50	17.75	0.02%
International Business Machines Corp	IBM	0.60%	3.02	0.02%	3.90	3.00	3.45	0.02%
Johnson & Johnson	JNJ	1.15%	3.06	0.04%	5.53	3.00	4.27	0.05%
Lululemon Athletica Inc	LULU	n/a	n/a	n/a	8.83	16.00	12.42	n/a
McDonald's Corp	MCD	0.65%	2.33	0.02%	4.66	8.00	6.33	0.04%
Merck & Co Inc	MRK	n/a	2.71	n/a	85.77	15.50	50.64	n/a
3M Co	MMM	0.22%	2.05	0.00%	-3.91	30.50	13.30	0.03%
American Water Works Co Inc	AWK	0.08%	2.09	0.00%	7.50	4.50	6.00	0.01%
Bank of America Corp	BAC	0.91%	2.62	0.02%	9.94	6.50	8.22	0.07%
Pfizer Inc	PFE	0.48%	5.81	0.03%	18.60	2.50	10.55	0.05%
Procter & Gamble Co/The	PG	1.20%	2.32	0.03%	6.46	5.00	5.73	0.07%
AT&T Inc	T	0.47%	5.05	0.02%	1.29	4.00	2.65	0.01%
Travelers Cos Inc/The	TRV	0.16%	1.79	0.00%	16.30	12.00	14.15	0.02%
RTX Corp	RTX	0.48%	2.08	0.01%	11.25	12.00	11.63	0.06%
Analog Devices Inc	ADI	0.34%	1.60	0.01%	0.58	7.50	4.04	0.01%
Walmart Inc	WMT	1.92%	1.03	0.02%	10.17	8.00	9.09	0.17%
Cisco Systems Inc	CSCO	0.63%	3.01	0.02%	4.03	3.50	3.77	0.02%
Intel Corp	INTC	n/a	n/a	n/a	15.69	-2.00	6.85	n/a
General Motors Co	GM	0.15%	1.07	0.00%	12.85	6.50	9.68	0.01%
Microsoft Corp	MSFT	9.45%	0.77	0.07%	14.60	14.00	14.30	1.35%
Dollar General Corp	DG	0.05%	2.79	0.00%	-2.07	3.50	0.72	0.00%
Cigna Group/The	CI	0.29%	1.62	0.00%	11.91	12.00	11.96	0.03%
Kinder Morgan Inc	KMI	0.14%	5.21	0.01%	7.70	10.00	8.85	0.01%
Citigroup Inc	C	0.35%	3.58	0.01%	10.00	3.00	6.50	0.02%
American International Group Inc	AIG	0.14%	2.18	0.00%	24.80	13.00	18.90	0.03%
Altria Group Inc	MO	0.26%	7.99	0.02%	3.84	6.00	4.92	0.01%
HCA Healthcare Inc	HCA	0.31%	0.65	0.00%	11.43	10.50	10.97	0.03%
International Paper Co	IP	0.05%	3.79	0.00%	19.20	5.50	12.35	0.01%
Hewlett Packard Enterprise Co	HPE	0.08%	2.54	0.00%	3.20	7.50	5.35	0.00%
Abbott Laboratories	ABT	0.59%	1.93	0.01%	8.20	4.00	6.10	0.04%
Aflac Inc	AFL	0.19%	1.79	0.00%		7.50	7.50	0.01%
Air Products and Chemicals Inc	APD	0.20%	2.38	0.00%	5.27	10.50	7.89	0.02%
Super Micro Computer Inc	SMCI	n/a	n/a	n/a	62.40	39.00	50.70	n/a
Royal Caribbean Cruises Ltd	RCL	n/a	0.90	n/a	30.30		30.30	n/a
Hess Corp	HES	0.12%	1.47	0.00%	7.95	8.00	7.98	0.01%
Archer-Daniels-Midland Co	ADM	n/a	3.35	n/a	-4.90	3.00	-0.95	n/a
Automatic Data Processing Inc	ADP	0.33%	2.02	0.01%	9.13	11.00	10.07	0.03%
Verisk Analytics Inc	VRSK	0.11%	0.58	0.00%	12.18	8.50	10.34	0.01%
AutoZone Inc	AZO	n/a	n/a	n/a	10.85	12.50	11.68	n/a
Linde PLC	LIN	0.67%	1.17	0.01%	9.55	7.00	8.28	0.06%

MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.68%
[2] Estimated Weighted Average Long-Term Growth Rate	9.74%
[3] S&P 500 Estimated Required Market Return	11.51%
[4] Risk-Free Rate	4.41%
[5] Implied Market Risk Premium	7.10%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6] % of Total Market Cap.	[7] Current Dividend Yield	[8] Cap. Weighted Div. Yield	[9] Yahoo! Finance Earnings Growth	[10] Value Line Earnings Growth	[11] Average Earnings Growth	[12] Cap. Weighted Long-Term Growth
Avery Dennison Corp	AVY	0.05%	1.59	0.00%	7.82	2.00	4.91	0.00%
Enphase Energy Inc	ENPH	n/a	n/a	n/a	13.90	14.00	13.95	n/a
MSCI Inc	MSCI	0.14%	1.10	0.00%	12.10	9.50	10.80	0.01%
Ball Corp	BALL	0.06%	1.18	0.00%	11.65	10.50	11.08	0.01%
Axon Enterprise Inc	AXON	n/a	n/a	n/a	20.50	25.00	22.75	n/a
Dayforce Inc	DAY	n/a	n/a	n/a	22.80		22.80	n/a
Carrier Global Corp	CARR	0.21%	0.94	0.00%	10.88	12.00	11.44	0.02%
Bank of New York Mellon Corp/The	BK	0.16%	2.62	0.00%	14.83	12.00	13.42	0.02%
Otis Worldwide Corp	OTIS	0.12%	1.50	0.00%	10.25	11.00	10.63	0.01%
Baxter International Inc	BAX	0.06%	3.06	0.00%	10.00	3.00	6.50	0.00%
Becton Dickinson & Co	BDX	0.21%	1.58	0.00%	8.65	6.00	7.33	0.02%
Berkshire Hathaway Inc	BRK/B	n/a	n/a	n/a	23.30		23.30	n/a
Best Buy Co Inc	BBY	n/a	3.64	n/a	-1.10	1.00	-0.05	n/a
Boston Scientific Corp	BSX	n/a	n/a	n/a	12.84	13.00	12.92	n/a
Bristol-Myers Squibb Co	BMJ	n/a	4.64	n/a	-4.81	1.00	-1.91	n/a
Brown-Forman Corp	BF/B	n/a	1.77	n/a	-1.65		-1.65	n/a
Coterra Energy Inc	CTRA	0.05%	3.51	0.00%	14.70	4.50	9.60	0.01%
Hilton Worldwide Holdings Inc	HLT	0.17%	0.26	0.00%	13.40		13.40	0.02%
Carnival Corp	CCL	n/a	n/a	n/a	298.10		298.10	n/a
Qorvo Inc	QRVO	n/a	n/a	n/a	10.00	5.50	7.75	n/a
Builders FirstSource Inc	BLDR	n/a	n/a	n/a	1.50	6.50	4.00	n/a
UDR Inc	UDR	0.04%	3.75	0.00%	21.18	2.50	11.84	0.01%
Clorox Co/The	CLX	0.06%	3.00	0.00%	7.67	7.00	7.34	0.00%
Paycom Software Inc	PAYC	0.03%	0.90	0.00%	7.54	21.00	14.27	0.00%
CMS Energy Corp	CMS	0.06%	2.92	0.00%	7.60	6.00	6.80	0.00%
Colgate-Palmolive Co	CL	0.25%	1.93	0.00%	8.81	11.50	10.16	0.03%
EPAM Systems Inc	EPAM	n/a	n/a	n/a	6.06	20.50	13.28	n/a
Conagra Brands Inc	CAG	0.05%	4.31	0.00%	1.86	3.50	2.68	0.00%
Airbnb Inc	ABNB	n/a	n/a	n/a	18.60	23.00	20.80	n/a
Consolidated Edison Inc	ED	0.11%	3.19	0.00%	5.70	6.00	5.85	0.01%
Corning Inc	GLW	0.11%	2.48	0.00%	13.93	17.50	15.72	0.02%
GoDaddy Inc	GDDY	n/a	n/a	n/a	-1.90	27.00	12.55	n/a
Cummins Inc	CMI	0.13%	2.25	0.00%	8.13	6.00	7.07	0.01%
Caesars Entertainment Inc	CZR	n/a	n/a	n/a	-10.53		-10.53	n/a
Danaher Corp	DHR	0.59%	0.39	0.00%	6.88	5.50	6.19	0.04%
Target Corp	TGT	0.21%	2.87	0.01%	8.21	10.00	9.11	0.02%
Deere & Co	DE	n/a	1.41	n/a	-11.05	4.00	-3.53	n/a
Dominion Energy Inc	D	0.14%	4.62	0.01%	20.40	3.00	11.70	0.02%
Dover Corp	DOV	0.08%	1.07	0.00%	8.36	6.00	7.18	0.01%
Alliant Energy Corp	LNT	0.05%	3.16	0.00%	7.70	6.00	6.85	0.00%
Steel Dynamics Inc	STLD	n/a	1.46	n/a	-15.40	2.00	-6.70	n/a
Duke Energy Corp	DUK	0.26%	3.63	0.01%	6.66	5.00	5.83	0.02%
Regency Centers Corp	REG	0.04%	3.71	0.00%	-5.59	11.50	2.96	0.00%
Eaton Corp PLC	ETN	0.39%	1.13	0.00%	15.42	11.00	13.21	0.05%
Ecolab Inc	ECL	0.21%	0.89	0.00%	16.60	11.00	13.80	0.03%
Revvity Inc	RVTY	0.05%	0.22	0.00%	8.20	-2.50	2.85	0.00%
Dell Technologies Inc	DELL	0.12%	1.50	0.00%	12.36	2.50	7.43	0.01%
Emerson Electric Co	EMR	0.19%	1.92	0.00%	12.93	7.00	9.97	0.02%
EOG Resources Inc	EOG	0.21%	2.96	0.01%	7.40	8.00	7.70	0.02%
Aon PLC	AON	0.22%	0.78	0.00%	11.60	12.00	11.80	0.03%
Entergy Corp	ETR	0.08%	3.43	0.00%	7.07	0.50	3.79	0.00%
Equifax Inc	EFX	0.11%	0.53	0.00%	20.46	7.00	13.73	0.01%
EQT Corp	EQT	0.06%	1.72	0.00%	15.00		15.00	0.01%
IQVIA Holdings Inc	IQV	n/a	n/a	n/a	10.27	11.00	10.64	n/a
Gartner Inc	IT	n/a	n/a	n/a	11.61	8.00	9.81	n/a
FedEx Corp	FDX	0.20%	2.02	0.00%	14.33	3.50	8.92	0.02%
FMC Corp	FMC	0.02%	3.52	0.00%	15.70	4.00	9.85	0.00%
Brown & Brown Inc	BRO	0.09%	0.50	0.00%	11.70	12.50	12.10	0.01%
Ford Motor Co	F	0.12%	5.68	0.01%	2.33	35.00	18.67	0.02%
NextEra Energy Inc	NEE	0.51%	2.44	0.01%	8.20	8.00	8.10	0.04%

MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.68%
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STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6] % of Total Market Cap.	[7] Current Dividend Yield	[8] Cap. Weighted Div. Yield	[9] Yahoo! Finance Earnings Growth	[10] Value Line Earnings Growth	[11] Average Earnings Growth	[12] Cap. Weighted Long-Term Growth
Franklin Resources Inc	BEN	0.03%	6.15	0.00%	4.58	4.00	4.29	0.00%
Garmin Ltd	GRMN	0.10%	1.70	0.00%	9.60	5.00	7.30	0.01%
Freeport-McMoRan Inc	FCX	0.21%	1.20	0.00%	10.30	11.00	10.65	0.02%
Dexcom Inc	DXCM	n/a	n/a	n/a	16.20		16.20	n/a
General Dynamics Corp	GD	0.25%	1.88	0.00%	14.43	10.00	12.22	0.03%
General Mills Inc	GIS	0.12%	3.25	0.00%	3.36	5.00	4.18	0.01%
Genuine Parts Co	GPC	0.06%	2.86	0.00%	7.10	8.50	7.80	0.00%
Atmos Energy Corp	ATO	0.06%	2.32	0.00%	7.40	7.00	7.20	0.00%
WW Grainger Inc	GWV	0.15%	0.79	0.00%	27.95	7.00	17.48	0.03%
Halliburton Co	HAL	0.08%	2.34	0.00%	13.00	20.00	16.50	0.01%
L3Harris Technologies Inc	LHX	0.13%	1.95	0.00%	8.23	11.50	9.87	0.01%
Healthpeak Properties Inc	DOC	n/a	5.25	n/a	-12.59	7.00	-2.80	n/a
Insulet Corp	PODD	n/a	n/a	n/a	16.25		16.25	n/a
Catalent Inc	CTLT	n/a	n/a	n/a	32.41	21.00	26.71	n/a
Fortive Corp	FTV	0.08%	0.41	0.00%	8.50	15.00	11.75	0.01%
Hershey Co/The	HSY	0.08%	2.86	0.00%	1.28	7.00	4.14	0.00%
Synchrony Financial	SYF	n/a	2.00	n/a	13.20	47.00	30.10	n/a
Hormel Foods Corp	HRL	0.05%	3.56	0.00%	6.20	7.50	6.85	0.00%
Arthur J Gallagher & Co	AJG	0.18%	0.85	0.00%	11.10	15.50	13.30	0.02%
Mondelez International Inc	MDLZ	0.23%	2.55	0.01%	6.70	10.00	8.35	0.02%
CenterPoint Energy Inc	CNP	0.06%	2.86	0.00%	7.37	6.50	6.94	0.00%
Humana Inc	HUM	0.11%	1.12	0.00%	1.04	4.50	2.77	0.00%
Willis Towers Watson PLC	WTW	0.09%	1.20	0.00%	9.50	10.50	10.00	0.01%
Illinois Tool Works Inc	ITW	0.23%	2.29	0.01%	4.35	9.00	6.68	0.02%
CDW Corp/DE	CDW	0.09%	1.10	0.00%	7.90	7.00	7.45	0.01%
Trane Technologies PLC	TT	0.26%	0.86	0.00%	13.87	14.00	13.94	0.04%
Interpublic Group of Cos Inc/The	IPG	0.04%	4.17	0.00%	6.10	8.50	7.30	0.00%
International Flavors & Fragrances Inc	IFF	0.08%	1.52	0.00%	13.11	0.50	6.81	0.01%
Generac Holdings Inc	GNRC	n/a	n/a	n/a	12.00	12.50	12.25	n/a
NXP Semiconductors NV	NXPI	0.18%	1.69	0.00%	9.56	7.50	8.53	0.02%
Kellanova	K	n/a	2.82	n/a	-23.12		-23.12	n/a
Broadridge Financial Solutions Inc	BR	0.07%	1.64	0.00%	11.80	9.50	10.65	0.01%
Kimberly-Clark Corp	KMB	0.14%	3.43	0.00%	7.29	7.50	7.40	0.01%
Kimco Realty Corp	KIM	0.05%	4.13	0.00%	-11.06	18.00	3.47	0.00%
Oracle Corp	ORCL	1.40%	0.94	0.01%	11.54	10.00	10.77	0.15%
Kroger Co/The	KR	0.12%	2.23	0.00%	8.00	5.00	6.50	0.01%
Lennar Corp	LEN	0.13%	1.07	0.00%	9.10	6.00	7.55	0.01%
Eli Lilly & Co	LLY	n/a	0.59	n/a	72.95	28.50	50.73	n/a
Bath & Body Works Inc	BBWI	0.02%	2.51	0.00%	5.02	26.50	15.76	0.00%
Charter Communications Inc	CHTR	n/a	n/a	n/a	5.20	6.50	5.85	n/a
Loews Corp	L	0.05%	0.32	0.00%	14.03	15.50	14.77	0.01%
Lowe's Cos Inc	LOW	0.45%	1.70	0.01%	2.60	5.50	4.05	0.02%
Hubbell Inc	HUBB	0.07%	1.14	0.00%	6.70	9.00	7.85	0.01%
IDEX Corp	IEX	0.05%	1.29	0.00%	12.00	5.00	8.50	0.00%
Marsh & McLennan Cos Inc	MMC	0.32%	1.46	0.00%	7.30	12.00	9.65	0.03%
Masco Corp	MAS	0.05%	1.38	0.00%	8.20	9.50	8.85	0.00%
S&P Global Inc	SPGI	0.49%	0.70	0.00%	13.43	8.00	10.72	0.05%
Medtronic PLC	MDT	0.34%	3.11	0.01%	5.51	6.50	6.01	0.02%
Viatis Inc	VTRS	n/a	4.13	n/a	-3.20	-1.50	-2.35	n/a
CVS Health Corp	CVS	0.23%	4.23	0.01%	-0.84	2.50	0.83	0.00%
DuPont de Nemours Inc	DD	0.11%	1.71	0.00%	10.85	9.00	9.93	0.01%
Micron Technology Inc	MU	0.34%	0.44	0.00%	-2.62	24.00	10.69	0.04%
Motorola Solutions Inc	MSI	0.22%	0.87	0.00%	10.10	10.00	10.05	0.02%
Cboe Global Markets Inc	CBOE	0.06%	1.23	0.00%	9.05	14.00	11.53	0.01%
Newmont Corp	NEM	0.18%	1.87	0.00%	25.70	13.00	19.35	0.04%
NIKE Inc	NKE	0.31%	1.67	0.01%	4.42	12.00	8.21	0.03%
NiSource Inc	NI	0.05%	3.06	0.00%	7.70	9.50	8.60	0.00%
Norfolk Southern Corp	NSC	0.17%	2.17	0.00%	9.10	9.50	9.30	0.02%
Principal Financial Group Inc	PFG	0.06%	3.35	0.00%	13.00	4.00	8.50	0.00%
Eversource Energy	ES	0.07%	4.20	0.00%	4.20	6.00	5.10	0.00%

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STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6] % of Total Market Cap.	[7] Current Dividend Yield	[8] Cap. Weighted Div. Yield	[9] Yahoo! Finance Earnings Growth	[10] Value Line Earnings Growth	[11] Average Earnings Growth	[12] Cap. Weighted Long-Term Growth
Northrop Grumman Corp	NOC	0.23%	1.56	0.00%	8.70	8.00	8.35	0.02%
Wells Fargo & Co	WFC	0.57%	2.83	0.02%	8.16	9.50	8.83	0.05%
Nucor Corp	NUE	n/a	1.44	n/a	-7.50		-7.50	n/a
Occidental Petroleum Corp	OXY	0.14%	1.71	0.00%	4.10	6.00	5.05	0.01%
Omnicom Group Inc	OMC	0.06%	2.71	0.00%	8.00	7.00	7.50	0.00%
ONEOK Inc	OKE	0.16%	4.35	0.01%	2.60	12.00	7.30	0.01%
Raymond James Financial Inc	RJF	0.07%	1.47	0.00%	14.20	10.00	12.10	0.01%
PG&E Corp	PCG	0.12%	0.20	0.00%	9.60	9.00	9.30	0.01%
Parker-Hannifin Corp	PH	0.24%	1.03	0.00%	8.69	12.50	10.60	0.03%
Rollins Inc	ROL	0.07%	1.19	0.00%	12.70	9.00	10.85	0.01%
PPL Corp	PPL	0.07%	3.11	0.00%	6.80	7.50	7.15	0.01%
ConocoPhillips	COP	0.36%	2.96	0.01%	5.20	4.00	4.60	0.02%
PulteGroup Inc	PHM	0.09%	0.56	0.00%	8.00	8.00	8.00	0.01%
Pinnacle West Capital Corp	PNW	0.03%	3.97	0.00%	7.20	4.50	5.85	0.00%
PNC Financial Services Group Inc/The	PNC	0.22%	3.46	0.01%	6.92	10.00	8.46	0.02%
PPG Industries Inc	PPG	0.09%	2.05	0.00%	9.05	7.00	8.03	0.01%
Progressive Corp/The	PGR	n/a	0.16	n/a	49.20	22.50	35.85	n/a
Veralto Corp	VLTO	0.08%	0.32	0.00%	7.41		7.41	0.01%
Public Service Enterprise Group Inc	PEG	0.13%	2.69	0.00%	5.90	5.00	5.45	0.01%
Cooper Cos Inc/The	COO	n/a	n/a	n/a	11.45	7.50	9.48	n/a
Edison International	EIX	0.10%	3.58	0.00%	8.15	6.00	7.08	0.01%
Schlumberger NV	SLB	n/a	2.62	n/a	21.10	21.50	21.30	n/a
Charles Schwab Corp/The	SCHW	0.34%	1.54	0.01%	11.45	10.50	10.98	0.04%
Sherwin-Williams Co/The	SHW	0.28%	0.75	0.00%	10.48	11.00	10.74	0.03%
West Pharmaceutical Services Inc	WST	0.06%	0.27	0.00%	1.08	7.50	4.29	0.00%
J M Smucker Co/The	SJM	0.04%	3.57	0.00%	5.04	7.00	6.02	0.00%
Snap-on Inc	SNA	0.05%	2.57	0.00%	3.80	5.50	4.65	0.00%
AMETEK Inc	AME	0.12%	0.65	0.00%	8.50	10.00	9.25	0.01%
Uber Technologies Inc	UBER	n/a	n/a	n/a	47.00		47.00	n/a
Southern Co/The	SO	0.29%	3.19	0.01%	7.30	6.50	6.90	0.02%
Truist Financial Corp	TFC	0.17%	4.86	0.01%	5.68	1.50	3.59	0.01%
Southwest Airlines Co	LUV	0.05%	2.43	0.00%	12.79		12.79	0.01%
W R Berkley Corp	WRB	0.06%	0.56	0.00%	9.00	13.00	11.00	0.01%
Stanley Black & Decker Inc	SWK	0.05%	2.98	0.00%	15.82	11.00	13.41	0.01%
Public Storage	PSA	n/a	3.30	n/a	-20.02	7.00	-6.51	n/a
Arista Networks Inc	ANET	n/a	n/a	n/a	19.40	19.50	19.45	n/a
Sysco Corp	SY	0.11%	2.61	0.00%	7.15	13.50	10.33	0.01%
Corteva Inc	CTVA	0.12%	1.16	0.00%	12.78	9.50	11.14	0.01%
Texas Instruments Inc	TXN	0.56%	2.63	0.01%	-2.80	3.00	0.10	0.00%
Textron Inc	TXT	0.05%	0.09	0.00%	12.60	13.00	12.80	0.01%
Thermo Fisher Scientific Inc	TMO	0.70%	0.25	0.00%	6.84	6.00	6.42	0.04%
TJX Cos Inc/The	TJX	0.39%	1.28	0.00%	9.31	17.00	13.16	0.05%
Globe Life Inc	GL	0.03%	0.91	0.00%	14.89	8.50	11.70	0.00%
Johnson Controls International plc	JCI	0.15%	1.91	0.00%	8.83	9.50	9.17	0.01%
Ulta Beauty Inc	ULTA	n/a	n/a	n/a	1.08	8.00	4.54	n/a
Union Pacific Corp	UNP	0.44%	2.17	0.01%	12.20	8.00	10.10	0.04%
Keysight Technologies Inc	KEYS	n/a	n/a	n/a	-2.04	8.00	2.98	n/a
UnitedHealth Group Inc	UNH	1.60%	1.44	0.02%	12.38	12.00	12.19	0.19%
Blackstone Inc	BX	0.33%	2.14	0.01%	23.64	16.00	19.82	0.06%
Marathon Oil Corp	MRO	0.04%	1.65	0.00%	12.60	12.50	12.55	0.01%
Ventas Inc	VTR	0.08%	2.81	0.00%	-19.70	23.00	1.65	0.00%
Labcorp Holdings Inc	LH	0.06%	1.29	0.00%	9.27	1.00	5.14	0.00%
Vulcan Materials Co	VMC	0.10%	0.73	0.00%	12.35	8.00	10.18	0.01%
Weyerhaeuser Co	WY	0.07%	2.36	0.00%	5.00	-2.00	1.50	0.00%
Williams Cos Inc/The	WMB	0.16%	4.16	0.01%	6.60	11.00	8.80	0.01%
Constellation Energy Corp	CEG	0.24%	0.54	0.00%	14.60		14.60	0.04%
WEC Energy Group Inc	WEC	0.09%	3.47	0.00%	5.86	6.00	5.93	0.01%
Adobe Inc	ADBE	n/a	n/a	n/a	13.92	13.50	13.71	n/a
Vistra Corp	VST	n/a	0.74	n/a	140.40		140.40	n/a
AES Corp/The	AES	0.04%	3.44	0.00%	6.10	14.00	10.05	0.00%

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					Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
Expeditors International of Washington Inc	EXPD	0.05%	1.11	0.00%	1.50	-1.00	0.25	0.00%
Amgen Inc	AMGN	0.51%	2.79	0.01%	5.60	4.50	5.05	0.03%
Apple Inc	AAPL	10.47%	0.43	0.04%	11.10	8.00	9.55	1.00%
Autodesk Inc	ADSK	n/a	n/a	n/a	11.39	14.00	12.70	n/a
Cintas Corp	CTAS	0.25%	0.76	0.00%	12.85	14.00	13.43	0.03%
Comcast Corp	CMCSA	0.48%	2.97	0.01%	7.21	7.50	7.36	0.04%
Molson Coors Beverage Co	TAP	0.03%	3.06	0.00%	2.64	11.50	7.07	0.00%
KLA Corp	KLAC	0.31%	0.75	0.00%	15.55	13.00	14.28	0.04%
Marriott International Inc/MD	MAR	0.21%	1.01	0.00%	5.61	11.00	8.31	0.02%
Fiserv Inc	FI	n/a	n/a	n/a	16.04	9.50	12.77	n/a
McCormick & Co Inc/MD	MKC	0.06%	2.04	0.00%	8.17	4.50	6.34	0.00%
PACCAR Inc	PCAR	0.15%	1.22	0.00%	6.76	14.50	10.63	0.02%
Costco Wholesale Corp	COST	1.16%	0.52	0.01%	10.33	10.00	10.17	0.12%
Stryker Corp	SYK	0.41%	0.89	0.00%	11.29	9.50	10.40	0.04%
Tyson Foods Inc	TSN	n/a	3.29	n/a	51.20	6.00	28.60	n/a
Lamb Weston Holdings Inc	LW	0.03%	2.22	0.00%	14.60	14.50	14.55	0.00%
Applied Materials Inc	AMAT	0.49%	0.79	0.00%	13.93	9.50	11.72	0.06%
Cardinal Health Inc	CAH	0.08%	1.83	0.00%	9.95	6.50	8.23	0.01%
Cincinnati Financial Corp	CINF	0.06%	2.38	0.00%	7.80	10.50	9.15	0.01%
Paramount Global	PARA	n/a	1.88	n/a	46.35	-2.50	21.93	n/a
DR Horton Inc	DHI	0.18%	0.63	0.00%	7.70	5.00	6.35	0.01%
Electronic Arts Inc	EA	0.11%	0.53	0.00%	13.00	14.50	13.75	0.02%
Erie Indemnity Co	ERIE	0.07%	0.94	0.00%	10.00	20.00	15.00	0.01%
Fair Isaac Corp	FICO	n/a	n/a	n/a	24.32	16.50	20.41	n/a
Fastenal Co	FAST	0.12%	2.18	0.00%	6.33	9.00	7.67	0.01%
M&T Bank Corp	MTB	0.09%	3.03	0.00%	3.49	4.50	4.00	0.00%
Xcel Energy Inc	XEL	0.11%	3.35	0.00%	6.73	7.00	6.87	0.01%
Fifth Third Bancorp	FITB	0.09%	3.45	0.00%	1.70	4.50	3.10	0.00%
Gilead Sciences Inc	GILD	0.31%	3.67	0.01%	5.98	2.50	4.24	0.01%
Hasbro Inc	HAS	n/a	3.87	n/a	34.00	8.50	21.25	n/a
Huntington Bancshares Inc/OH	HBAN	0.06%	4.22	0.00%	4.64	7.50	6.07	0.00%
Welltower Inc	WELL	n/a	2.09	n/a	55.38	26.50	40.94	n/a
Biogen Inc	BIIB	n/a	n/a	n/a	3.60	0.50	2.05	n/a
Northern Trust Corp	NTRS	0.05%	3.33	0.00%	8.34	4.00	6.17	0.00%
Packaging Corp of America	PKG	n/a	2.32	n/a	-14.29	9.00	-2.65	n/a
Paychex Inc	PAYX	0.14%	2.92	0.00%	7.19	8.00	7.60	0.01%
QUALCOMM Inc	QCOM	0.56%	2.00	0.01%	12.63	6.00	9.32	0.05%
Ross Stores Inc	ROST	0.15%	0.98	0.00%	9.93	14.00	11.97	0.02%
IDEXX Laboratories Inc	IDXX	n/a	n/a	n/a	10.85	10.50	10.68	n/a
Starbucks Corp	SBUX	0.33%	2.34	0.01%	8.33	9.00	8.67	0.03%
KeyCorp	KEY	0.05%	4.90	0.00%	16.49		16.49	0.01%
Fox Corp	FOXA	0.03%	1.28	0.00%	13.51	13.50	13.51	0.00%
Fox Corp	FOX	n/a	1.39	n/a				n/a
State Street Corp	STT	0.08%	3.44	0.00%	7.89		7.89	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	n/a	n/a	n/a	51.20		51.20	n/a
US Bancorp	USB	0.21%	4.37	0.01%	3.90	4.00	3.95	0.01%
A O Smith Corp	AOS	0.03%	1.42	0.00%	10.00	9.00	9.50	0.00%
Gen Digital Inc	GEN	0.05%	1.82	0.00%	11.45	10.50	10.98	0.01%
T Rowe Price Group Inc	TROW	0.07%	4.55	0.00%	0.70	4.50	2.60	0.00%
Waste Management Inc	WM	0.25%	1.45	0.00%	12.35	6.00	9.18	0.02%
Palantir Technologies Inc	PLTR	n/a	n/a	n/a	57.64		57.64	n/a
Constellation Brands Inc	STZ	0.14%	1.57	0.00%	11.24	6.00	8.62	0.01%
Invesco Ltd	IVZ	0.02%	4.67	0.00%	10.71	10.00	10.36	0.00%
Intuit Inc	INTU	0.51%	0.67	0.00%	14.20	13.50	13.85	0.07%
Morgan Stanley	MS	0.50%	3.55	0.02%	18.54	9.50	14.02	0.07%
Microchip Technology Inc	MCHP	n/a	2.26	n/a	-10.90	6.00	-2.45	n/a
CrowdStrike Holdings Inc	CRWD	n/a	n/a	n/a	21.03		21.03	n/a
Chubb Ltd	CB	0.34%	1.26	0.00%	2.40	13.00	7.70	0.03%
Hologic Inc	HOLX	n/a	n/a	n/a	6.30	-2.00	2.15	n/a
Citizens Financial Group Inc	CFG	0.05%	4.09	0.00%	0.85	7.50	4.18	0.00%

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Jabil Inc	JBL	0.04%	0.27	0.00%	12.70	13.50	13.10	0.01%
O'Reilly Automotive Inc	ORLY	n/a	n/a	n/a	11.10	10.50	10.80	n/a
Allstate Corp/The	ALL	n/a	1.94	n/a	169.30	30.00	99.65	n/a
Equity Residential	EQR	n/a	3.63	n/a	-1.06	-4.00	-2.53	n/a
BorgWarner Inc	BWA	0.02%	1.21	0.00%	11.13	5.50	8.32	0.00%
Keurig Dr Pepper Inc	KDP	0.15%	2.45	0.00%	7.04	10.00	8.52	0.01%
Host Hotels & Resorts Inc	HST	n/a	4.55	n/a	28.40	51.00	39.70	n/a
Incyte Corp	INCY	n/a	n/a	n/a	31.52	18.50	25.01	n/a
Simon Property Group Inc	SPG	0.16%	4.85	0.01%	8.60	3.50	6.05	0.01%
Eastman Chemical Co	EMN	0.04%	2.89	0.00%	12.45	3.50	7.98	0.00%
AvalonBay Communities Inc	AVB	n/a	3.02	n/a	-11.27	5.50	-2.89	n/a
Prudential Financial Inc	PRU	0.13%	4.29	0.01%	9.50	4.00	6.75	0.01%
United Parcel Service Inc	UPS	0.30%	4.78	0.01%	2.70	3.50	3.10	0.01%
Walgreens Boots Alliance Inc	WBA	n/a	11.16	n/a	-21.61	-7.00	-14.31	n/a
STERIS PLC	STE	0.07%	0.94	0.00%	10.00	8.00	9.00	0.01%
McKesson Corp	MCK	0.19%	0.57	0.00%	13.85	10.00	11.93	0.02%
Lockheed Martin Corp	LMT	0.41%	2.16	0.01%	4.47	9.50	6.99	0.03%
Cencora Inc	COR	0.13%	0.91	0.00%	10.10	6.50	8.30	0.01%
Capital One Financial Corp	COF	0.17%	1.60	0.00%	-0.97	2.50	0.77	0.00%
Campbell Soup Co	CPB	0.04%	3.03	0.00%	5.05	5.00	5.03	0.00%
Waters Corp	WAT	n/a	n/a	n/a	5.59	6.50	6.05	n/a
Nordson Corp	NDSN	0.04%	1.19	0.00%	13.00	10.00	11.50	0.01%
Dollar Tree Inc	DLTR	n/a	n/a	n/a	7.14	24.00	15.57	n/a
Darden Restaurants Inc	DRI	0.06%	3.41	0.00%	8.64	10.00	9.32	0.01%
Everygy Inc	EVERG	0.04%	4.14	0.00%	6.35	7.50	6.93	0.00%
Match Group Inc	MTCH	n/a	n/a	n/a	30.27	12.50	21.39	n/a
Domino's Pizza Inc	DPZ	0.04%	1.40	0.00%	11.37	12.50	11.94	0.01%
NVR Inc	NVR	n/a	n/a	n/a	7.60	1.50	4.55	n/a
NetApp Inc	NTAP	0.07%	1.68	0.00%	7.40	7.50	7.45	0.01%
Old Dominion Freight Line Inc	ODFL	0.13%	0.52	0.00%	10.80	7.50	9.15	0.01%
DaVita Inc	DVA	n/a	n/a	n/a	16.40	9.50	12.95	n/a
Hartford Financial Services Group Inc/The	HIG	0.10%	1.60	0.00%	10.50	7.00	8.75	0.01%
Iron Mountain Inc	IRM	0.10%	2.41	0.00%	4.70	5.50	5.10	0.01%
Estee Lauder Cos Inc/The	EL	0.07%	2.65	0.00%	23.44	3.50	13.47	0.01%
Cadence Design Systems Inc	CDNS	n/a	n/a	n/a	17.55	12.00	14.78	n/a
Tyler Technologies Inc	TYL	n/a	n/a	n/a	15.10	8.00	11.55	n/a
Universal Health Services Inc	UHS	0.04%	0.35	0.00%	24.54	9.00	16.77	0.01%
Skyworks Solutions Inc	SWKS	0.05%	2.83	0.00%	15.00		15.00	0.01%
Quest Diagnostics Inc	DGX	0.05%	1.93	0.00%	6.83	3.00	4.92	0.00%
Rockwell Automation Inc	ROK	0.09%	1.86	0.00%	0.46	9.50	4.98	0.00%
Kraft Heinz Co/The	KHC	0.13%	4.56	0.01%	3.48	4.50	3.99	0.01%
American Tower Corp	AMT	n/a	2.79	n/a	32.25	11.00	21.63	n/a
Regeneron Pharmaceuticals Inc	REGN	n/a	n/a	n/a	10.50	1.50	6.00	n/a
Amazon.com Inc	AMZN	n/a	n/a	n/a	31.75	24.50	28.13	n/a
Jack Henry & Associates Inc	JKHY	0.04%	1.25	0.00%	9.70	6.50	8.10	0.00%
Ralph Lauren Corp	RL	0.02%	1.70	0.00%	10.45	11.00	10.73	0.00%
BCR Inc	BCR	n/a	4.87	n/a	-50.84	0.50	-25.17	n/a
Amphenol Corp	APH	0.23%	1.01	0.00%	16.90	13.50	15.20	0.04%
Howmet Aerospace Inc	HWM	n/a	0.32	n/a	28.39	12.00	20.20	n/a
Valero Energy Corp	VLO	n/a	3.17	n/a	-20.90	9.50	-5.70	n/a
Synopsys Inc	SNPS	n/a	n/a	n/a	16.54	12.50	14.52	n/a
CH Robinson Worldwide Inc	CHRW	0.04%	2.25	0.00%	14.70	5.50	10.10	0.00%
Accenture PLC	ACN	0.65%	1.67	0.01%	9.64	12.50	11.07	0.07%
TransDigm Group Inc	TDG	n/a	n/a	n/a	20.71	22.00	21.36	n/a
Yum! Brands Inc	YUM	0.12%	1.92	0.00%	11.57	10.00	10.79	0.01%
Prologis Inc	PLD	n/a	3.04	n/a	-6.05	0.50	-2.78	n/a
FirstEnergy Corp	FE	0.08%	3.83	0.00%	6.30	5.50	5.90	0.00%
VeriSign Inc	VRSN	n/a	n/a	n/a	8.00	12.50	10.25	n/a
Quanta Services Inc	PWR	0.13%	0.12	0.00%	17.22	16.50	16.86	0.02%
Henry Schein Inc	HSIC	n/a	n/a	n/a	5.00	8.50	6.75	n/a

MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.68%
[2] Estimated Weighted Average Long-Term Growth Rate	9.74%
[3] S&P 500 Estimated Required Market Return	11.51%
[4] Risk-Free Rate	4.41%
[5] Implied Market Risk Premium	7.10%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6] % of Total Market Cap.	[7] Current Dividend Yield	[8] Cap. Weighted Div. Yield	[9] Yahoo! Finance Earnings Growth	[10] Value Line Earnings Growth	[11] Average Earnings Growth	[12] Cap. Weighted Long-Term Growth
Ameren Corp	AEE	0.07%	3.06	0.00%	6.20	6.50	6.35	0.00%
ANSYS Inc	ANSS	n/a	n/a	n/a	6.40	9.50	7.95	n/a
FactSet Research Systems Inc	FDS	0.05%	0.90	0.00%	4.70	11.00	7.85	0.00%
NVIDIA Corp	NVDA	n/a	0.03	n/a	52.53	41.00	46.77	n/a
Cognizant Technology Solutions Corp	CTSH	0.11%	1.55	0.00%	6.27	8.00	7.14	0.01%
Intuitive Surgical Inc	ISRG	n/a	n/a	n/a	14.08	13.50	13.79	n/a
Take-Two Interactive Software Inc	TTWO	n/a	n/a	n/a	64.80		64.80	n/a
Republic Services Inc	RSG	0.19%	1.16	0.00%	9.93	11.00	10.47	0.02%
eBay Inc	EBAY	0.09%	1.66	0.00%	8.39	6.00	7.20	0.01%
Goldman Sachs Group Inc/The	GS	0.46%	2.42	0.01%	26.28	7.50	16.89	0.08%
SBA Communications Corp	SBAC	n/a	1.63	n/a	26.11	16.50	21.31	n/a
Sempra	SRE	0.16%	2.97	0.00%	5.90	7.00	6.45	0.01%
Moody's Corp	MCO	0.26%	0.72	0.00%	15.49	9.00	12.25	0.03%
ON Semiconductor Corp	ON	n/a	n/a	n/a	4.66	8.00	6.33	n/a
Booking Holdings Inc	BKNG	n/a	0.83	n/a	22.06	22.00	22.03	n/a
F5 Inc	FFIV	n/a	n/a	n/a	9.90	10.00	9.95	n/a
Akamai Technologies Inc	AKAM	n/a	n/a	n/a	6.60	6.00	6.30	n/a
Charles River Laboratories International Inc	CRL	n/a	n/a	n/a	5.42	7.00	6.21	n/a
MarketAxess Holdings Inc	MKTX	0.03%	1.16	0.00%	7.52	9.00	8.26	0.00%
Devon Energy Corp	DVN	0.07%	2.25	0.00%	6.10	3.00	4.55	0.00%
Bio-Techne Corp	TECH	0.04%	0.40	0.00%	11.25	10.00	10.63	0.00%
Alphabet Inc	GOOGL	n/a	0.48	n/a	20.50		20.50	n/a
Teleflex Inc	TFX	0.03%	0.55	0.00%	7.90	8.50	8.20	0.00%
Allegion plc	ALLE	0.04%	1.32	0.00%	7.20	8.50	7.85	0.00%
Netflix Inc	NFLX	n/a	n/a	n/a	25.80	16.50	21.15	n/a
Agilent Technologies Inc	A	0.13%	0.64	0.00%	4.90	8.00	6.45	0.01%
Warner Bros Discovery Inc	WBD	n/a	n/a	n/a	-68.41		-68.41	n/a
Elevance Health Inc	ELV	0.36%	1.25	0.00%	12.05	11.00	11.53	0.04%
Trimble Inc	TRMB	n/a	n/a	n/a	10.00	5.50	7.75	n/a
CME Group Inc	CME	0.23%	2.08	0.00%	2.82	5.50	4.16	0.01%
Juniper Networks Inc	JNPR	0.04%	2.26	0.00%	11.00	7.50	9.25	0.00%
Blackrock Finance Inc	BLK	0.42%	2.15	0.01%	11.62	8.00	9.81	0.04%
DTE Energy Co	DTE	0.08%	3.18	0.00%	5.10	4.50	4.80	0.00%
Nasdaq Inc	NDAQ	0.12%	1.31	0.00%	8.09	3.50	5.80	0.01%
Celanese Corp	CE	0.04%	2.06	0.00%	18.49	4.50	11.50	0.01%
Philip Morris International Inc	PM	0.56%	4.45	0.02%	9.36	5.00	7.18	0.04%
Salesforce Inc	CRM	n/a	0.58	n/a	16.23	24.00	20.12	n/a
Ingersoll Rand Inc	IR	0.12%	0.08	0.00%	10.23	10.50	10.37	0.01%
Huntington Ingalls Industries Inc	HII	0.03%	1.97	0.00%	6.72	10.00	8.36	0.00%
Roper Technologies Inc	ROP	0.18%	0.54	0.00%	8.00	9.00	8.50	0.01%
MetLife Inc	MET	0.17%	2.64	0.00%	11.50	7.50	9.50	0.02%
Tapestry Inc	TPR	0.03%	2.98	0.00%	11.00	9.00	10.00	0.00%
CSX Corp	CSX	0.20%	1.39	0.00%	9.30	9.00	9.15	0.02%
Edwards Lifesciences Corp	EW	n/a	n/a	n/a	7.89	10.00	8.95	n/a
Ameriprise Financial Inc	AMP	0.14%	1.26	0.00%	17.60	10.00	13.80	0.02%
Zebra Technologies Corp	ZBRA	n/a	n/a	n/a	21.10	1.00	11.05	n/a
Zimmer Biomet Holdings Inc	ZBH	0.06%	0.89	0.00%	7.00	6.50	6.75	0.00%
CBRE Group Inc	CBRE	n/a	n/a	n/a	11.00	5.00	8.00	n/a
Camden Property Trust	CPT	n/a	3.34	n/a	-20.15	-6.50	-13.33	n/a
Mastercard Inc	MA	1.34%	0.53	0.01%	16.51	14.50	15.51	0.21%
CarMax Inc	KMX	n/a	n/a	n/a	6.30	3.50	4.90	n/a
Intercontinental Exchange Inc	ICE	0.27%	1.12	0.00%	9.53	7.50	8.52	0.02%
Smurfit WestRock PLC	SW	n/a	2.45	n/a				n/a
Fidelity National Information Services Inc	FIS	0.14%	1.72	0.00%	-0.60	4.00	1.70	0.00%
Chipotle Mexican Grill Inc	CMG	n/a	n/a	n/a	21.17	20.00	20.59	n/a
Wynn Resorts Ltd	WYNN	0.03%	1.04	0.00%	7.51	27.00	17.26	0.01%
Live Nation Entertainment Inc	LYV	n/a	n/a	n/a	35.11		35.11	n/a
Assurant Inc	AIZ	0.03%	1.45	0.00%	7.10	9.50	8.30	0.00%
NRG Energy Inc	NRG	0.06%	1.79	0.00%	4.00	11.00	7.50	0.00%
Regions Financial Corp	RF	0.06%	4.29	0.00%	2.21	4.50	3.36	0.00%

MARKET RISK PREMIUM DERIVED FROM ANALYSTS LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.68%
[2] Estimated Weighted Average Long-Term Growth Rate	9.74%
[3] S&P 500 Estimated Required Market Return	11.51%
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STANDARD AND POOR'S 500 INDEX

Name	[6]	[7]	[8]	[9]	[10]	[11]	[12]	
	% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth	
Monster Beverage Corp	MNST	n/a	n/a	13.11	12.00	12.56	n/a	
Mosaic Co/The	MOS	n/a	3.14	n/a	-20.40	-9.50	-14.95	n/a
Baker Hughes Co	BKR	n/a	2.32	n/a	45.50	28.00	36.75	n/a
Expedia Group Inc	EXPE	n/a	n/a	n/a	20.20	39.00	29.60	n/a
CF Industries Holdings Inc	CF	n/a	2.33	n/a	-12.80	-1.50	-7.15	n/a
Leidos Holdings Inc	LDOS	0.06%	0.93	0.00%	12.70	9.50	11.10	0.01%
APA Corp	APA	0.03%	4.09	0.00%	0.57	6.00	3.29	0.00%
Alphabet Inc	GOOG	2.76%	0.48	0.01%	20.50	13.00	16.75	0.46%
First Solar Inc	FSLR	n/a	n/a	n/a	56.60	34.50	45.55	n/a
Discover Financial Services	DFS	n/a	2.00	n/a	-7.29	4.00	-1.65	n/a
Visa Inc	V	1.36%	0.76	0.01%	12.59	13.50	13.05	0.18%
Mid-America Apartment Communities Inc	MAA	n/a	3.70	n/a	-0.78	-15.00	-7.89	n/a
Xylem Inc/NY	XYL	0.10%	1.07	0.00%	14.66	12.00	13.33	0.01%
Marathon Petroleum Corp	MPC	n/a	2.03	n/a	-3.70	-6.50	-5.10	n/a
Advanced Micro Devices Inc	AMD	n/a	n/a	n/a	32.89	17.00	24.95	n/a
Tractor Supply Co	TSCO	0.09%	1.51	0.00%	7.67	11.50	9.59	0.01%
ResMed Inc	RMD	0.11%	0.87	0.00%	14.70	10.00	12.35	0.01%
Mettler-Toledo International Inc	MTD	n/a	n/a	n/a	8.50	8.50	8.50	n/a
Jacobs Solutions Inc	J	0.05%	0.89	0.00%	12.25	11.00	11.63	0.01%
Copart Inc	CPRT	n/a	n/a	n/a	22.30	9.00	15.65	n/a
VICI Properties Inc	VICI	0.10%	5.19	0.01%	6.30	10.50	8.40	0.01%
Fortinet Inc	FTNT	n/a	n/a	n/a	15.36	24.00	19.68	n/a
Albemarle Corp	ALB	n/a	1.71	n/a	-6.21	-3.50	-4.86	n/a
Moderna Inc	MRNA	n/a	n/a	n/a	-51.34	-18.50	-34.92	n/a
Essex Property Trust Inc	ESS	0.06%	3.32	0.00%	3.62	4.50	4.06	0.00%
CoStar Group Inc	CSGP	n/a	n/a	n/a	13.80	16.50	15.15	n/a
Realty Income Corp	O	0.16%	4.99	0.01%	22.62	5.00	13.81	0.02%
Westinghouse Air Brake Technologies Corp	WAB	0.09%	0.44	0.00%	13.75	16.00	14.88	0.01%
Pool Corp	POOL	0.04%	1.27	0.00%	-8.75	14.00	2.63	0.00%
Western Digital Corp	WDC	n/a	n/a	n/a	-26.80	22.50	-2.15	n/a
PepsiCo Inc	PEP	0.69%	3.19	0.02%	6.97	7.50	7.24	0.05%
TE Connectivity PLC	TEL	0.14%	1.72	0.00%	8.80	10.50	9.65	0.01%
Diamondback Energy Inc	FANG	0.15%	5.43	0.01%	6.20	2.50	4.35	0.01%
Palo Alto Networks Inc	PANW	n/a	n/a	n/a	15.20		15.20	n/a
ServiceNow Inc	NOW	n/a	n/a	n/a	21.90	32.50	27.20	n/a
Church & Dwight Co Inc	CHD	0.08%	1.08	0.00%	8.88	6.50	7.69	0.01%
Federal Realty Investment Trust	FRT	0.03%	3.83	0.00%	10.59	2.50	6.55	0.00%
Amentum Holdings Inc	AMTM	n/a	n/a	n/a				n/a
MGM Resorts International	MGM	n/a	n/a	n/a	-2.33	25.00	11.34	n/a
American Electric Power Co Inc	AEP	0.16%	3.43	0.01%	6.62	6.50	6.56	0.01%
Invitation Homes Inc	INVH	0.06%	3.18	0.00%	3.57	13.50	8.54	0.01%
PTC Inc	PTC	n/a	n/a	n/a	14.90	29.00	21.95	n/a
JB Hunt Transport Services Inc	JBHT	0.05%	1.00	0.00%	7.60	7.50	7.55	0.00%
Lam Research Corp	LRCX	0.31%	1.13	0.00%	11.03	12.50	11.77	0.04%
Mohawk Industries Inc	MHK	n/a	n/a	n/a	12.75	1.00	6.88	n/a
Pentair PLC	PNR	0.05%	0.94	0.00%	13.70	12.00	12.85	0.01%
GE HealthCare Technologies Inc	GEHC	0.13%	0.13	0.00%	10.80		10.80	0.01%
Vertex Pharmaceuticals Inc	VRTX	n/a	n/a	n/a	12.33	11.00	11.67	n/a
Amcor PLC	AMCR	0.05%	4.41	0.00%	5.40	11.50	8.45	0.00%
Meta Platforms Inc	META	3.70%	0.35	0.01%	13.60	17.00	15.30	0.57%
T-Mobile US Inc	TMUS	n/a	1.71	n/a	20.86	20.00	20.43	n/a
United Rentals Inc	URI	0.16%	0.81	0.00%	9.50	19.00	14.25	0.02%
Honeywell International Inc	HON	0.40%	2.19	0.01%	8.07	10.00	9.04	0.04%
Alexandria Real Estate Equities Inc	ARE	0.06%	4.38	0.00%	-5.92	9.50	1.79	0.00%
Delta Air Lines Inc	DAL	0.10%	1.18	0.00%	8.42		8.42	0.01%
Seagate Technology Holdings PLC	STX	n/a	2.56	n/a	213.07	32.00	122.54	n/a
United Airlines Holdings Inc	UAL	n/a	n/a	n/a	25.52		25.52	n/a
News Corp	NWS	n/a	0.72	n/a				n/a
Centene Corp	CNC	n/a	n/a	n/a	11.34	10.00	10.67	n/a
Martin Marietta Materials Inc	MLM	0.10%	0.59	0.00%	8.70	11.00	9.85	0.01%

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STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		% of Total Market Cap.	Current Dividend Yield	Cap. Weighted Div. Yield	Yahoo! Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Cap. Weighted Long-Term Growth
Teradyne Inc	TER	0.06%	0.36	0.00%	7.68	9.50	8.59	0.01%
PayPal Holdings Inc	PYPL	n/a	n/a	n/a	12.00	11.50	11.75	n/a
Tesla Inc	TSLA	n/a	n/a	n/a	1.43	19.00	10.22	n/a
Arch Capital Group Ltd	ACGL	n/a	n/a	n/a	19.70	17.00	18.35	n/a
KKR & Co Inc	KKR	0.34%	0.54	0.00%	30.19	5.00	17.60	0.06%
Dow Inc	DOW	0.11%	5.13	0.01%	23.53	0.50	12.02	0.01%
Everest Group Ltd	EG	0.05%	2.04	0.00%	2.30	10.50	6.40	0.00%
Teledyne Technologies Inc	TDY	n/a	n/a	n/a	6.04	7.00	6.52	n/a
GE Vernova Inc	GEV	n/a	n/a	n/a	21.00		21.00	n/a
News Corp	NWSA	0.03%	0.75	0.00%	-2.38	13.50	5.56	0.00%
Exelon Corp	EXC	0.12%	3.75	0.00%	4.75		4.75	0.01%
Global Payments Inc	GPX	0.08%	0.98	0.00%	13.45	12.00	12.73	0.01%
Crown Castle Inc	CCI	n/a	5.28	n/a	-6.88	-0.50	-3.69	n/a
Aptiv PLC	APTIV	n/a	n/a	n/a	27.58	28.50	28.04	n/a
Align Technology Inc	ALGN	n/a	n/a	n/a	9.50	17.00	13.25	n/a
Kenvue Inc	KVUE	0.13%	3.55	0.00%	1.05		1.05	0.00%
Targa Resources Corp	TRGP	n/a	2.03	n/a	21.50	20.00	20.75	n/a
Bunge Global SA	BG	n/a	2.81	n/a	-7.20	0.00	-3.60	n/a
Deckers Outdoor Corp	DECK	n/a	n/a	n/a	11.35	17.00	14.18	n/a
LKQ Corp	LKQ	n/a	3.01	n/a	33.50	7.00	20.25	n/a
Zoetis Inc	ZTS	0.26%	0.88	0.00%	9.57	7.50	8.54	0.02%
Digital Realty Trust Inc	DLR	n/a	3.02	n/a	-8.97	-5.00	-6.99	n/a
Equinix Inc	EQIX	0.25%	1.92	0.00%	10.05	15.00	12.53	0.03%
Las Vegas Sands Corp	LVS	0.11%	1.59	0.00%	13.26		13.26	0.01%
Molina Healthcare Inc	MOH	n/a	n/a	n/a	12.31	11.50	11.91	n/a

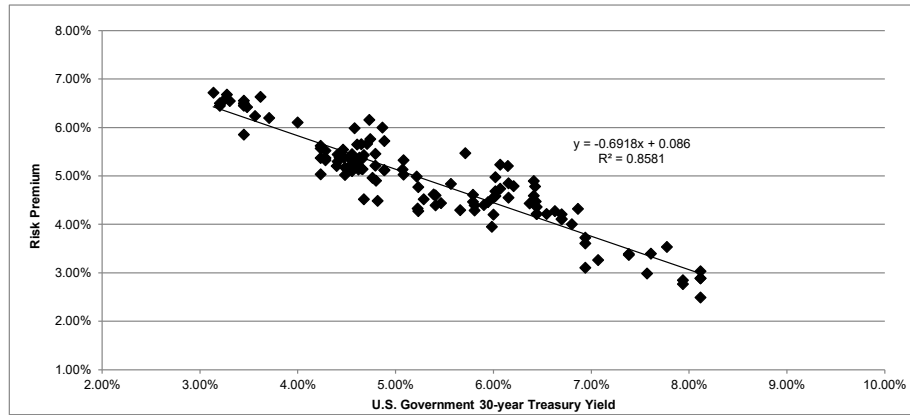
Notes:

- [1] Equals sum of col. [8]
- [2] Equals sum of col. [11]
- [3] Equals ((1) x (1 + (0.5 x [2]))) + [2]
- [4] Source: Bloomberg Professional
- [5] Equals [3] - [4]
- [6] Equals weight in S&P 500 based on market capitalization
- [7] Source: Bloomberg Professional
- [8] Equals [6] x [7]
- [9] Source: Yahoo Finance
- [10] Source: Value Line
- [11] Equals average of col. [9] and col. [10]
- [12] Equals [6] x [11]

ATTACHMENT JCN – 7

BOND YIELD PLUS RISK PREMIUM ANALYSIS – SCHEDULE 4.1

BOND YIELD PLUS RISK PREMIUM ANALYSIS



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.926331749
R Square	0.858090509
Adjusted R Square	0.856946077
Standard Error	0.003559628
Observations	126

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.009500632	0.009500632	749.7963816	2.04988E-54
Residual	124	0.001571198	1.26709E-05		
Total	125	0.01107183			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.086018718	0.001383903	62.15662183	2.57141E-95	0.083279587	0.08875785	0.083279587	0.088757849
X Variable 1	-0.691812076	0.025264835	-27.3824101	2.04988E-54	-0.741818262	-0.6418059	-0.741818262	-0.641805891

	[1]	[2]	[3]
	Moody's		
	Baa Utility	Risk	
	Yield	Premium	ROE
Current 6-month average of Moody's Baa Utility Yield	5.80%	4.59%	10.39%

Notes:

- [1] Source: Bloomberg Professional
- [2] Equals $0.086019 + (-0.691812 \times \text{Column [6]})$
- [3] Equals Column [1] + Column [2]

ATTACHMENT JCN – 8

**BOND YIELD PLUS RISK PREMIUM ANALYSIS - FERC ROE DECISIONS –
SCHEDULE 4.2**

BOND YIELD PLUS RISK PREMIUM ANALYSIS - FERC ROE DECISIONS

Utility	Docket	[1]	[2]	[3]
		Base Authorized ROE	6-Month Daily Baa Yield Avg	Risk Premium
Baltimore Gas & Elec.	ER05-515	10.80%	6.07%	4.73%
Baltimore Gas & Elec.	ER05-515	11.30%	6.07%	5.23%
Westar Energy Inc.	ER05-925	10.80%	6.37%	4.43%
San Diego Gas & Elec.	ER07-284	11.35%	6.14%	5.21%
Idaho Power Co.	ER06-787	10.70%	6.15%	4.55%
Wisconsin Elec. Pwr. Co.	ER06-1320	11.00%	6.15%	4.85%
Commonwealth Edison Co.	ER07-583	11.00%	6.41%	4.59%
Duequesne	ER06-1549	10.90%	6.41%	4.49%
Virginia Elec. & Power Co.	ER08-92	10.90%	6.43%	4.47%
Atlantic Path 15	ER08-374	10.65%	6.44%	4.21%
Startrans IO, LLC	ER08-413	10.65%	6.44%	4.21%
Westar Energy Inc.	ER08-396	10.80%	6.44%	4.36%
Pepco Holdings, Inc.	ER08-686	11.30%	6.41%	4.89%
Trans-Allegheny	ER07-562	11.20%	6.42%	4.78%
Arizona Public Service Co.	ER07-1142	10.75%	6.54%	4.21%
Virginia Elec. & Power Co.	ER08-1207	10.90%	6.63%	4.27%
Duquesne Light Co.	ER08-1402	10.90%	6.69%	4.21%
Pepco Holdings, Inc.	ER08-1423	10.80%	6.69%	4.11%
Black Hills Power Co.	ER08-1584	10.80%	6.69%	4.11%
Tallgrass / Prairie Wind	ER09-35/36	10.80%	6.80%	4.00%
Public Service Elec. & Gas	ER09-249	11.18%	6.86%	4.32%
ITC Great Plains	ER09-548	10.66%	6.94%	3.72%
Pioneer Transmission	ER09-75	10.54%	6.94%	3.60%
So. Cal Edison (b)	ER09-187	10.04%	6.94%	3.10%
So. Cal Edison (a)	ER08-375	10.55%	7.57%	2.98%
Baltimore Gas & Elec.	ER09-745	11.30%	7.77%	3.53%
AEP - SPP Zone	ER07-1069	10.70%	7.93%	2.77%
Green Power Express	ER09-681	10.78%	7.93%	2.85%
Oklahoma Gas & Elec.	ER08-281	10.60%	8.11%	2.49%
PPL Elec. Utilities Corp.	ER08-1457	11.00%	8.11%	2.89%
PPL Elec. Utilities Corp.	ER08-1457	11.14%	8.11%	3.03%
Kentucky Utilities Co.	ER08-1588	11.00%	8.11%	2.89%
Niagara Mohawk Pwr. Co.	ER08-552	11.00%	7.61%	3.39%
National Grid Generation LLC	ER09-628	10.75%	7.38%	3.37%
Southwestern Public Service Co.	ER08-313	10.77%	7.38%	3.39%
So. Cal Edison (c)	ER10-160	10.33%	7.07%	3.26%
AEP - PJM Zone	ER08-1329	10.99%	6.20%	4.79%
Kansas City Power & Light Co.	ER10-230	10.60%	6.02%	4.58%
AEP Transcos - PJM	ER10-355	10.99%	6.02%	4.97%
AEP Transcos - SPP	ER10-355	10.70%	6.02%	4.68%
So. Cal Edison	ER11-1952	10.30%	5.90%	4.40%
Atlantic Grid Operations	EL11-13	10.09%	5.81%	4.28%
Duke Energy Carolinas	ER11-2895	10.20%	5.81%	4.39%
Northern Pass Transmission	ER11-2377	10.40%	5.79%	4.61%
PSCo	ER12-2300	10.25%	5.79%	4.46%
Northern States Power Co. (MN)	ER10-1377	10.40%	5.94%	4.46%
Northern States Power Co.	ER10-992	10.20%	6.00%	4.20%
South Carolina Elec. & Gas	ER10-516	10.55%	6.00%	4.55%
RITELine	ER11-4069	9.93%	5.98%	3.95%
PJM & PSE&G	ER12-296	11.18%	5.71%	5.47%
PATH	ER08-386	10.40%	5.56%	4.84%
Entergy Arkansas	ER11-2560	10.20%	5.21%	4.99%
Public Service Co. of Colorado	ER11-2853	10.10%	5.08%	5.02%
Public Service Co. of Colorado	ER11-2853	10.40%	5.08%	5.32%
Cleco Power LLC	ER12-1378	10.50%	4.74%	5.76%
Transource Missouri	ER12-2554	9.80%	4.65%	5.15%
Puget Sound Energy	ER12-778	9.80%	4.65%	5.15%
Puget Sound Energy - PSANI	ER12-778	10.30%	4.65%	5.65%
PacifiCorp	ER11-3643	9.80%	4.62%	5.18%
Maine Public Service Co.	ER12-1650	9.75%	4.62%	5.13%
So. Cal Edison	ER11-3697	9.30%	4.81%	4.49%
San Diego Gas & Electric	ER13-941	9.55%	5.22%	4.33%
Public Service Co. of Colorado	ER12-1589	9.72%	4.76%	4.96%
Duke Energy Ohio	ER12-91	10.88%	4.73%	6.15%
Niagara Mohawk Power Corp.	EL12-101	9.80%	4.66%	5.14%
Public Service Company of New Mexico	ER13-685	10.00%	4.63%	5.37%
MidAmerican Central Calif. Transco	ER14-1661	9.80%	4.58%	5.22%

BOND YIELD PLUS RISK PREMIUM ANALYSIS - FERC ROE DECISIONS

Utility	Docket	[1]	[2]	[3]
		Base Authorized ROE	6-Month Daily Baa Yield Avg	Risk Premium
American Transmission Systems, Inc.	ER15-303	9.88%	4.58%	5.30%
American Transmission Systems, Inc.	ER15-303	10.56%	4.58%	5.98%
Westar Energy	EL14-93	9.80%	4.58%	5.22%
Duke Energy Florida	EL12-39	10.00%	4.65%	5.35%
Southwestern Public Service Co.	ER14-192	10.00%	4.79%	5.21%
Kentucky Utilities Co.	ER13-2428	10.25%	4.79%	5.46%
XEST Xcel Energy Southwest Trans. Co. (Gen)	ER14-2751	10.20%	5.07%	5.13%
Baltimore G&E / Pepco Holdings, Inc.	EL15-27	10.00%	5.23%	4.77%
New York Transco LLC	ER15-572	9.50%	5.23%	4.27%
Kanstar Transmission, LLC	ER15-2237	9.80%	5.41%	4.39%
Transource West Virginia, LLC	ER15-2114	10.00%	5.41%	4.59%
ATX Southwest, LLC	ER15-1809	9.90%	5.46%	4.44%
Transource Kansas, LLC	ER15-958	9.80%	5.29%	4.51%
NorthWestern Corp.	ER15-2069	9.65%	4.55%	5.10%
NextEra Energy Transmission West	ER15-2239	9.70%	4.41%	5.29%
TransCanyon DCR, LLC	ER15-1682	9.80%	4.55%	5.25%
Northeast Transmission Development	ER16-453	9.85%	4.41%	5.44%
Duke Energy Carolinas	EL16-30	10.00%	4.55%	5.45%
New York Transco, LLC	ER15-572	9.65%	4.48%	5.17%
Rockland Electric Co.	ER17-856	9.50%	4.48%	5.02%
Emera Maine	ER15-1429	9.60%	4.40%	5.20%
Transource Pennsylvania/Maryland, LLC	ER17-419	9.90%	4.52%	5.38%
NextEra Energy Trans. Southwest LLC	ER16-2720	9.80%	4.23%	5.57%
NextEra Energy Trans. MidAtlantic, LLC	ER16-2716	9.60%	4.28%	5.32%
Mid-Atlantic Interstate Transmission	ER17-211	9.80%	4.42%	5.38%
GridLiance West Transco LLC	ER17-706	9.60%	4.23%	5.37%
NextEra Energy Trans. New York LLC	ER16-2719	9.65%	4.28%	5.37%
DesertLink, LLC	ER17-135	9.80%	4.28%	5.52%
AEP East Cos.	EL17-13	9.85%	4.23%	5.62%
Alabama Power Co.	ER19-1427	10.60%	4.88%	5.72%
AEP West Cos	ER19-1396	10.00%	4.88%	5.12%
Southwestern Electric Power Co	ER18-1225	10.10%	4.67%	5.43%
Gulf Power Co.	ER18-1953	10.25%	4.60%	5.65%
Oklahoma G&E	EL18-58	10.00%	4.88%	5.12%
Southern California Edison	ER18-169-002	9.70%	4.80%	4.90%
PECO	ER17-1519	9.85%	4.47%	5.38%
San Diego Gas & Electric	ER19-221	10.10%	4.00%	6.10%
Cheyenne Light, Fuel & Power	ER19-697-001	9.90%	3.70%	6.20%
Southern California Edison	ER19-1553	9.80%	3.56%	6.24%
Pacific Gas & Electric Co.	ER19-13	9.95%	3.27%	6.68%
NorthWestern Corp.	ER19-1756	9.65%	3.20%	6.45%
Dayton Power & Light Co.	ER20-1150	9.85%	3.13%	6.72%
Jersey Central Power & Light Co.	ER20-227	9.70%	3.20%	6.50%
Duke Energy Progress	ER21-1319	9.85%	3.30%	6.55%
Public Service Elec. & Gas Co.	ER21-2450	9.90%	3.48%	6.42%
TransCanyon Western Development, LLC	ER21-1065	9.90%	3.45%	6.45%
Morongo Transmission LLC	ER21-669	9.30%	3.45%	5.85%
PPL Elec. Utilities Corp.	EL20-48	9.90%	3.45%	6.45%
PPL Elec. Utilities Corp.	EL20-48	9.95%	3.45%	6.50%
PPL Elec. Utilities Corp.	EL20-48	10.00%	3.45%	6.55%
Tucson Electric Power Co.	ER19-2019	9.79%	3.24%	6.55%
Pacific Gas & Electric Co.	ER20-2878	10.25%	3.62%	6.63%
Duke Energy Progress	ER22-2125	10.00%	4.46%	5.54%
Entergy Arkansas	ER13-1508	10.37%	4.71%	5.66%
Constellation Mystic Power	ER18-1639-010	9.19%	4.67%	4.52%
DATC Path 15	ER17-998	10.86%	4.86%	6.00%
Pacific Gas & Electric Co.	ER16-2320	9.26%	4.23%	5.03%
Portland General Electric Co.	ER22-233	10.00%	5.39%	4.61%
South FirstEnergy Operating Cos.	ER21-253	9.95%	5.66%	4.29%

Notes:

[1] Source: Westlaw

[2] Source: Bloomberg Professional, bond yields are the average of each trading day in the year

[3] Equals Column [1] - Column [2]

ATTACHMENT JCN – 9
SUMMARY RESULTS – SCHEDULE 5

SUMMARY RESULTS

Model	Lower Bound	Lower Third	Median	Upper Third	Upper Bound
DCF	8.53%	9.92%	10.24%	10.39%	11.60%
CAPM	10.38%	11.09%	11.76%	11.97%	13.03%
Measure of Central Tendency Base ROE			11.00%		
Upper / Lower Bounds	9.45%	10.51%		11.18%	12.32%
Midpoint of Upper Third:					11.75%

Model	Lower Bound	Lower Third	Median	Upper Third	Upper Bound
DCF	8.53%	9.92%	10.24%	10.39%	11.60%
CAPM	10.38%	11.09%	11.76%	11.97%	13.03%
Risk Premium	8.96%	9.91%	10.39%	10.87%	11.82%
Measure of Central Tendency Base ROE			10.80%		
Upper / Lower Bounds	9.29%	10.31%		11.07%	12.15%
Midpoint of Upper Third:					11.61%