

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

In Re: Petition for rate increase by Gulf Power Company	)	DOCKET NO. 160186-EI
	)	
	)	
In Re: Petition for approval of 2016 depreciation and dismantlement studies, approval of proposed depreciation rates and annual dismantlement accruals and Plant Smith Units 1 and 2 regulatory asset amortization, by Gulf Power Company.	)	DOCKET NO. 160170-EI
	)	FILED: January 13, 2017
	)	
	)	
	)	

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**DIRECT TESTIMONY**

**OF**

**J. RANDALL WOOLRIDGE**

**ON BEHALF OF THE CITIZENS OF THE STATE OF FLORIDA**

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## **LIST OF EXHIBITS**

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JRW-2	Interest Rates
JRW-3	Public Utility Bond Yields
JRW-4	Summary Financial Statistics for Proxy Groups
JRW-5	Capital Structure Ratios and Debt Cost Rates
JRW-6	The Relationship Between Estimated ROE and Market-to-Book Ratios
JRW-7	Utility Capital Cost Indicators
JRW-8	Industry Average Betas
JRW-9	DCF Model
JRW-10	DCF Study
JRW-11	CAPM Study
JRW-12	Gulf Power's Proposed Cost of Capital
JRW-13	Gulf Power Company's ROE Results
JRW-14	GDP and S&P 500 Growth Rates

**DIRECT TESTIMONY**

**OF**

**J. RANDALL WOOLRIDGE**

On Behalf of the Office of Public Counsel

Before the

Florida Public Service Commission

Docket No. 160186-EI

1

2

**I. INTRODUCTION AND SCOPE OF TESTIMONY**

3

4 **Q. PLEASE STATE YOUR FULL NAME, ADDRESS, AND OCCUPATION.**

5 A. My name is J. Randall Woolridge, and my business address is 120 Haymaker  
6 Circle, State College, PA 16801. I am a Professor of Finance and the Goldman, Sachs  
7 & Co. and Frank P. Smeal Endowed University Fellow in Business Administration at  
8 the University Park Campus of the Pennsylvania State University. I am also the  
9 Director of the Smeal College Trading Room and President of the Nittany Lion Fund,  
10 LLC. A summary of my educational background, research, and related business  
11 experience is provided in Appendix A.

12

13 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

14 A. I have been asked by the Florida Office of Public Counsel ("OPC") to provide an opinion  
15 as to the appropriate cost of capital for Gulf Power Company ("Gulf Power" or  
16 "Company") and to evaluate Gulf's rate of return testimony in this proceeding.

1 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

2 A. First, I review my cost of equity recommendation for Gulf Power, and review  
3 the primary areas of contention between Gulf Power’s rate of return position and my  
4 position. Second, I provide an assessment of capital costs in today’s capital markets.  
5 Third, I discuss the selection of a proxy group of electric utility companies for estimating  
6 the market cost of equity for Gulf Power. Fourth, I discuss the capital structure of the  
7 Company. Fifth, I provide an overview of the concept of the cost of equity capital, and  
8 then estimate the equity cost rate for Gulf Power. Finally, I critique the Company’s rate  
9 of return analysis and testimony.

10

11 **II. SUMMARY OF TESTIMONY**

12

13 **A. Rate of Return Recommendation**

14

15 **Q. PLEASE REVIEW YOUR RECOMMENDATIONS REGARDING THE**  
16 **APPROPRIATE RATE OF RETURN FOR GULF POWER.**

17 A. I have reviewed the Company’s proposed capital structure and overall cost of capital.  
18 I have adjusted the Company’s proposed capital structure to be more reflective of the  
19 capitalizations of other comparable electric utility companies. My proposed capital  
20 structure, from investor-provided capital, includes 1.67% short-term debt, 42.80%  
21 long-term debt, 5.53% Preferred stock, and 50.00% common equity. I have applied the  
22 Discounted Cash Flow Model (“DCF”) and the Capital Asset Pricing Model (“CAPM”)  
23 to two proxy groups of publicly-held electric utility companies. My DCF and CAPM

1 analyses indicate that an equity cost rate in the range of 7.90% to 9.00% is appropriate  
2 for Gulf Power. The DCF results for the two proxy groups are 8.50% to 9.00%.  
3 Because I give primary weight to the DCF results, and given the recent rise in interest  
4 rates, I believe that an equity cost rate of 8.875% is appropriate.

5 Using my capital structure and debt and equity cost rates, I recommend an  
6 overall rate of return or cost of capital from investor-provided capital for Gulf Power  
7 of 6.71%. This is summarized in Exhibit JRW-1.

8

9 **Q. PLEASE REVIEW THE COMPANY’S PROPOSED CAPITAL STRUCTURE**  
10 **AND PROPOSED RATE OF RETURN.**

11 A. Gulf witness Susan D. Ritenour provides the Company’s proposed capital  
12 structure and senior capital cost rates, and Gulf witness Dr. Vander Weide recommends  
13 a common equity cost rate for Gulf Power. Gulf Power’s recommended capital  
14 structure from investors’ sources includes 1.56% short-term debt, 40.13% long-term  
15 debt, 5.19% preferred stock, and 53.12% common equity. I demonstrate that Gulf’s  
16 proposed capital structure includes a common equity ratio above the common equity  
17 ratios in the capital structures of both my Electric Proxy Group as well as the Vander  
18 Weide Proxy Group. Gulf Power uses short-term and long-term debt cost rates of  
19 3.02% and 4.40%, a preferred stock cost rate of 6.15% and an equity cost rate of 11.0%.

20

21 **Q. WHAT COMPRISES A UTILITY’S “RATE OF RETURN”?**

22 A. A company’s overall rate of return consists of three main categories: (1) capital  
23 structure (*i.e.*, ratios of short-term debt, long-term debt, preferred stock and common

1 equity); (2) cost rates for short-term debt, long-term debt, and preferred stock; and (3)  
2 common equity cost, otherwise known as Return on Equity (“ROE”).

3

4 **Q. WHAT IS A UTILITY’S ROE INTENDED TO REFLECT?**

5 A. An ROE is most simply described as the allowed rate of profit for a regulated  
6 company. In a competitive market, a company’s profit level is determined by a variety  
7 of factors, including the state of the economy, the degree of competition a company  
8 faces, the ease of entry into its markets, the existence of substitute or complementary  
9 products/services, the company’s cost structure, the impact of technological changes,  
10 and the supply and demand for its services and/or products. For a regulated monopoly,  
11 the regulator determines the level of profit available to the public utility. The United  
12 States Supreme Court established the guiding principles for determining an appropriate  
13 level of profitability for regulated public utilities in two cases: (1) *Bluefield* and (2)  
14 *Hope*.<sup>1</sup> In those cases, the Court recognized that the fair rate of return on equity should  
15 be: (1) comparable to returns investors expect to earn on other investments of similar  
16 risk; (2) sufficient to assure confidence in the company’s financial integrity; and (3)  
17 adequate to maintain and support the company’s credit and to attract capital.

18 Thus, the appropriate ROE for a regulated utility requires determining the  
19 market-based cost of capital. The market-based cost of capital for a regulated firm  
20 represents the return investors could expect from other investments, while assuming no  
21 more and no less risk. The purpose of all of the economic models and formulas in cost

---

<sup>1</sup> *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) (“*Hope*”) and *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) (“*Bluefield*”).

1 of capital testimony (including those presented later in my testimony) is to estimate,  
2 using market data of similar-risk firms, the rate of return equity investors require for  
3 that risk-class of firms in order to set an appropriate ROE for a regulated firm.  
4

5 **B. Gulf Power's Last Rate Case**  
6

7 **Q. PLEASE REVIEW THE SETTLEMENT IN GULF POWER'S LAST RATE**  
8 **CASE.**

9 A. On December 19, 2013, the Florida Public Service Commission issued Order  
10 No. PSC-13-0670-S-EI in Docket No.130140-EI.<sup>2</sup> The Order Approved a Settlement  
11 between Gulf Power, OPC, the Florida Industrial Power Users Group ("FIPUG"), the  
12 Federal Executive Agencies ("FEA"), and Wal-Mart Stores East, LP and Sam's East, Inc.  
13 ("Wal-Mart"). With respect to ROE, the parties approved the following:<sup>3</sup>

14 For purposes of this Agreement, the phrase "authorized ROE" shall  
15 mean the midpoint authorized return on common equity ("ROE") and  
16 the phrase "authorized ROE range" shall mean the range that starts  
17 100 basis points below the midpoint and extends to 100 basis points  
18 above the midpoint as determined in this Agreement. Subject to the  
19 adjustment provision in paragraph 2(b), Gulf Power's authorized  
20 ROE shall continue to be 10.25%, which is the same as the midpoint  
21 ROE set by the Commission in Order No. PSC-12-0179-FOF-EI  
22 issued on April 3, 2012 in Docket No. 110138-EI, which was based  
23 on the record in that case. Gulf Power's authorized ROE and  
24 authorized ROE range shall be used for all regulatory purposes  
25 including, but not limited to, cost recovery clauses, earnings  
26 surveillance reporting, the calculation of the Company's Allowance  
27 for Funds Used During Construction ("AFUDC") rate and

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<sup>2</sup> Docket No.130140-EI, *Petition for Rate Increase by Gulf Power Company*, Order No. PSC-13-0670-S-EI, (December 19, 2013).

<sup>3</sup> Stipulation and Settlement, Docket No.130140-EI, *Petition for Rate Increase by Gulf Power Company*, (November 2, 2013).



1 associated amounts of AFUDC in accordance with Rule 25-6.0141,  
2 F.A.C., and the implementation or operation of the negotiated  
3 provisions of this Agreement.  
4

5 The Parties agree that the average 30-year United States Treasury  
6 Bond yield rate of 3.7947% as reported by Bloomberg Finance on  
7 November 15, 2013 (the date the Parties reached agreement on the  
8 general terms for this Agreement) on their free website, the link to  
9 which is [www.bloomberg.com/quote/USGG30YR:IND](http://www.bloomberg.com/quote/USGG30YR:IND) shall serve  
10 as the benchmark yield rate used in the adjustment mechanism set  
11 forth in this paragraph 2(b). The documentation of the benchmark  
12 yield rate set forth above is attached hereto as Exhibit A. If at any  
13 time during the term, the average 30-year United States Treasury  
14 Bond yield rate for any period of six (6) consecutive months is at  
15 least 75 basis points greater than the benchmark yield rate ("the  
16 Trigger"), Gulf Power's authorized ROE shall be increased by 25  
17 basis points from the Trigger Effective Date defined below for and  
18 through the remainder of the Term, and for any period in which the  
19 Company's rates continue in effect after June 30, 2017 until the  
20 Commission issues a final order in a future proceeding changing the  
21 Company's rates and its authorized ROE. The new authorized ROE  
22 resulting from the foregoing adjustment will therefore be 10.50%,  
23 and the associated new authorized ROE range will extend from  
24 9.50% to 11.50%. The new authorized ROE and associated ROE  
25 range resulting from operation of the foregoing adjustment may be  
26 referred to as the "Revised Authorized ROE" and the "Revised  
27 Authorized ROE Range" in this Agreement. The Trigger shall be  
28 calculated by summing the reported 30-year United States Treasury  
29 Bond yield rates for each day over any six-month period, e.g.,  
30 January 1, 2014 through July 1, 2014, or March 17, 2014 through  
31 September 17, 2014, for which rates are reported, and dividing the  
32 resulting sum by the number of reporting days in such period. The  
33 effective date of the Revised Authorized ROE ("Trigger Effective  
34 Date") shall be the first day of the month following the day in which  
35 the Trigger is reached. If the Trigger is reached and the Revised  
36 Authorized ROE becomes effective, except as otherwise specifically  
37 provided in this Agreement, Gulf Power's Revised Authorized ROE  
38 and Revised Authorized ROE Range shall be used for the remainder  
39 of the Term for all regulatory purposes including, but not limited to,  
40 cost recovery clauses, earnings surveillance reporting, AFUDC, and  
41 the implementation or operation of the negotiated provisions of this  
42 Agreement. The same Bloomberg Finance source referenced above  
43 in this paragraph 2(b) shall be used to monitor the yield rate. In the  
44 event that this source is no longer available during the Term, the  
45 Parties will negotiate in good faith to identify a reasonable alternative

1 publication as an appropriate source for the 30-year United States  
2 Treasury Bond yield rate data to be used in calculating the Trigger as  
3 described in this Agreement.  
4

5 Therefore, the Settlement provided for a 10.25% ROE and included a Trigger  
6 mechanism. The Trigger mechanism would adjust the ROE by 25 basis points if 30-  
7 year U.S. Treasury yield was 75 basis points above the reference yield of 3.7947% for  
8 six consecutive months. This was the 30-year Treasury yield as reported by Bloomberg  
9 Finance on November 15, 2013.  
10

11 **Q. HAVE YIELDS IN THE MARKETS HIT THE TRIGGER RATE SINCE THE**  
12 **COMPANY'S LAST CASE?**

13 A. No. Since the Company's last rate case, 30-year Treasury yield has dropped,  
14 despite predictions to the contrary. This is highlighted in Figure 1 below.

15 The Federal Reserve has made several monetary policy moves in the last three  
16 years. The Federal Reserve ended its Quantitative Easing III ("QEIII") bond buying  
17 program in 2014, which was aimed at providing liquidity to the long-term bond  
18 markets. In December 2015, the Federal Reserve increased its target rate for federal  
19 funds from 0 – 0.25 percent to 0.25 – 0.50 percent. However, due primarily to slow  
20 economic growth and low inflation, the 30-year Treasury yield declined from 3.79% at  
21 the time of Gulf's last case to below 2.50% in the summer of 2016. This yield has since  
22 increased to the 3.0% range, with the majority of that increase coming in response to  
23 the unexpected election of Donald Trump as U.S. President. The increase in rates is  
24 generally attributed to the prospects of new fiscal, monetary, and regulatory policies

1 that could increase economic growth and potentially increase inflation. The Federal  
2 Reserve subsequently raised the federal funds target rate at its December 13-14 meeting  
3 from 0.50 – 0.75 percent.

4 **Figure 1**  
5 **30-Year Treasury Yield**  
6 **2013-2016**

7 Source: <https://www.bloomberg.com/quote/USGG30YR:IND>

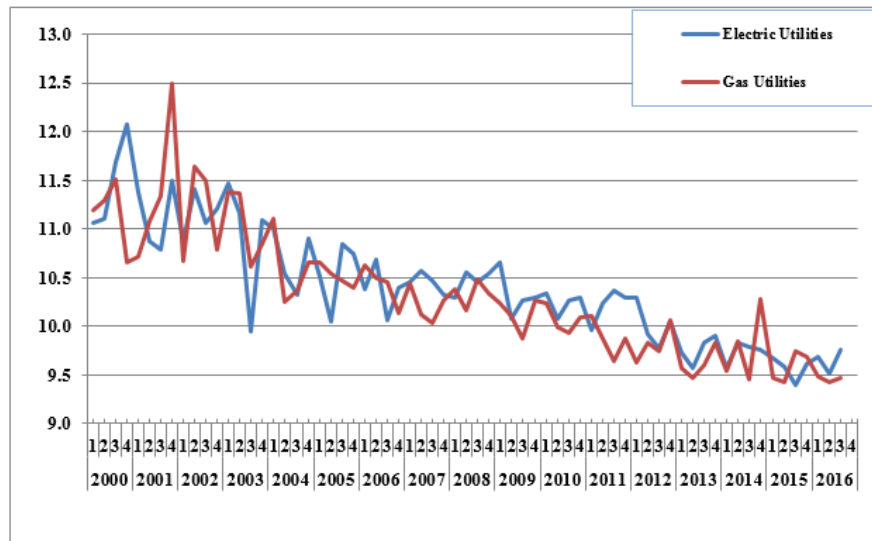


8  
9  
10 **Q. HAVE THE AUTHORIZED ROES FOR ELECTRIC UTILITIES INCREASED**  
11 **OR DECREASED SINCE THE 2013 RATE CASE?**

12 A. The average authorized ROEs for electric utilities have decreased since the  
13 Company's last rate case. As shown in Figure 2, these authorized ROEs for electric  
14 utilities have declined from an average of 10.01% in 2012, to 9.8% in 2013, to 9.76%  
15 in 2014, to 9.58% in 2015, and are at 9.64% in the first half of 2016 according to

1 Regulatory Research Associates.<sup>4</sup>

2  
3 **Figure 2**  
4 **Authorized ROEs for Electric Utility and Gas Distribution Companies**  
5 **2000-2016**



6  
7  
8 **Q. HAS GULF POWER'S CREDIT RATING CHANGED SINCE THE LAST**  
9 **RATE CASE?**

10 A. Yes. Moody's upgraded the long-term issuer credit rating for Gulf Power in  
11 January 2014 from A3 to A2. This suggests that the investment risk of Gulf Power is  
12 lower than at the time of the Company's last rate case.

13  
14 **C. Primary Rate of Return Issues**

15 **Q. PLEASE INITIALLY ADDRESS THE DIFFERENCES IN THE**  
16 **ALTERNATIVE ASSUMPTIONS REGARDING CAPITAL MARKET**

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<sup>4</sup> *Regulatory Focus*, Regulatory Research Associates, July, 2015. The electric utility authorized ROEs exclude the authorized ROEs in Virginia, which include generation adders.

1           **CONDITIONS BETWEEN YOUR EQUITY COST RATE ANALYSES AND**  
2           **DR. VANDER WEIDE’S.**

3    A.           Dr. Vander Weide and I have different opinions regarding capital market  
4           conditions. Dr. Vander Weide’s analyses and ROE results and recommendations reflect  
5           the assumption of higher interest rates and capital costs. I review current market  
6           conditions and conclude that interest rates and capital costs are at low levels and are  
7           likely to remain low for some time. On this issue, I show that the economists’ forecasts  
8           of higher interest rates and capital costs, which come from sources used by Dr. Vander  
9           Weide, have been consistently wrong for a decade.

10

11   **Q.       PLEASE REVIEW THE DIFFERENCES IN THE ESTIMATION OF GULF’S**  
12   **EQUITY COST RATE.**

13   A.           Both Dr. Vander Weide and I have applied the DCF and the CAPM approaches  
14           to a proxy group of publicly-held companies. Dr. Vander Weide and I both employ  
15           relatively large and similar proxy groups of electric utilities. I have applied the DCF  
16           and CAPM approaches to his proxy group, as well as my Electric Proxy Group, which  
17           include thirty electric utilities. Dr. Vander Weide has also used a Risk Premium (“RP”)  
18           approach to estimate an equity cost rate for Gulf Power. In terms of the DCF approach,  
19           the two primary problems with Dr. Vander Weide’s approach are (1) his inappropriate  
20           adjustment to reflect the quarterly payment of dividends; and (2) most significantly,  
21           Dr. Vander Weide’s exclusive reliance on the forecasted earnings per share (“EPS”)  
22           growth rates of Wall Street analysts. I provide empirical evidence from studies that  
23           demonstrate the long-term earnings growth rates of Wall Street analysts are overly

1 optimistic and upwardly-biased. Consequently, in developing a DCF growth rate, I  
2 have reviewed both historic and projected growth rate measures and have evaluated  
3 growth in dividends, book value, and earnings per share.

4 The RP and CAPM approaches require an estimate of the base interest rate and  
5 the equity risk premium. In both approaches, Dr. Vander Weide's base interest rate is  
6 above current market rates. However, the major area of disagreement involves our  
7 significantly different views on the alternative approaches to measuring the equity risk  
8 premium, as well as the magnitude of equity risk premium. Dr. Vander Weide's equity  
9 risk premiums are excessive and do not reflect current market fundamentals. As I  
10 highlight in my testimony, there are three methodologies for estimating an equity risk  
11 premium – historic returns, surveys, and expected return models. I have used a market  
12 risk premium of 5.5%, which: (1) employs three different approaches to estimating a  
13 market premium; and (2) uses the results of many studies of the market risk premium.  
14 As I note, my market risk premium reflects the market risk premiums: (1) determined  
15 in recent academic studies by leading finance scholars; (2) employed by leading  
16 investment banks and management consulting firms; and (3) found in surveys of  
17 companies, financial forecasters, financial analysts, and corporate CFOs. Dr. Vander  
18 Weide uses a historical equity risk premium which is based on historic stock and bond  
19 returns. He also calculates an expected risk premium in which he applies the DCF  
20 approach to the S&P 500 and public utility stocks. I provide evidence that risk  
21 premiums based on historic stock and bond returns are subject to empirical errors,  
22 which result in upwardly biased measures of expected equity risk premiums. I also  
23 demonstrate that Dr. Vander Weide's projected equity risk premiums, which use

1 analysts' EPS growth rate projections, include unrealistic assumptions regarding future  
2 economic and earnings growth and stock returns. Additionally, I show that Dr. Vander  
3 Weide's market and equity risk premiums are well above the market and equity risk  
4 premiums used in the real world of finance.

5 Finally, Dr. Vander Weide makes two unwarranted adjustments in developing  
6 an equity cost rate. In his DCF, RP, and CAPM approaches, Dr. Vander Weide makes  
7 an unnecessary adjustment for flotation costs. This increases his equity cost rate  
8 recommendation by 20 basis points. However, he has not identified any flotation costs  
9 for Gulf Power. In addition, Dr. Vander Weide also makes an overall financial risk or  
10 leverage adjustment to his equity cost rate estimate. This adjustment is based on the  
11 leverage difference between the market value capital structures of his proxy group and  
12 Gulf Power's book value capital structure, which is used for ratemaking purposes. The  
13 adjustment increases his equity cost rate estimate by 60 basis points. In my testimony, I  
14 discuss why this adjustment is not appropriate and highlight the fact that it produces  
15 illogical results.

16

17 **Q. PLEASE SUMMARIZE THE PRIMARY DIFFERENCES BETWEEN YOUR**  
18 **POSITION AND THE COMPANY'S POSITION REGARDING THE**  
19 **COMPANY'S COST OF CAPITAL.**

20 A. In the end, the most significant areas of disagreement in measuring the  
21 Company's cost of capital are:

1 (1) The Company's proposed capital structure includes a higher common equity ratio  
2 and therefore lower financial risk than other electric utilities.

3 (2) Dr. Vander Weide's analyses and ROE results and recommendations are based on  
4 the assumption of higher interest rates and capital costs. I review current market  
5 conditions and conclude that interest rates and capital costs are at low levels and are  
6 likely to remain low for some time.

7 (3) Dr. Vander Weide's DCF equity cost rate estimates, in particular the fact that: (a)  
8 he adjusts for the quarterly payment of dividends and flotation costs; and; (b) he has  
9 relied exclusively on the overly optimistic and upwardly biased EPS growth rate  
10 forecasts of Wall Street analysts and *Value Line*.

11 (4) The projected interest rates and market or equity risk premiums in Dr. Vander  
12 Weide's CAPM and RP approaches are inflated and are not reflective of market  
13 realities or expectations.

14 (5) Dr. Vander Weide has made inappropriate flotation cost and leverage adjustments  
15 to his DCF, CAPM, and RP equity cost rates.

16

17 **III. CAPITAL COSTS IN TODAY'S MARKETS**

18

19 **A. Historic Interest Rates and Capital Costs**

20

21 **Q. PLEASE DISCUSS LONG-TERM INTEREST RATES AND CAPITAL COSTS**  
22 **IN U.S. MARKETS.**



1 A. Long-term capital cost rates for U.S. corporations are a function of the required returns  
2 on risk-free securities plus a risk premium. The risk-free rate of interest is the yield on  
3 long-term U.S. Treasury bonds. The yields on 10-year U.S. Treasury bonds from 1953  
4 to the present are provided on Panel A of Exhibit JRW-2. These yields peaked in the  
5 early 1980s and have generally declined since that time. These yields fell to below  
6 3.0% in 2008 as a result of the financial crisis. In 2012, the yields on 10-year Treasuries  
7 declined from 2.5% to 1.5% as the Federal Reserve initiated the third stage of its  
8 quantitative easing program (“QEIII”) to support a low interest rate environment.  
9 These yields increased to 3.0% as of December 2013 on speculation of a tapering of  
10 the Federal Reserve’s QEIII policy. The Federal Reserve ended the QEIII program in  
11 2015 and increased the federal funds rate in December 2015. Nonetheless, due to slow  
12 economic growth and low inflation, the 10-year Treasury yield subsequently declined  
13 to 1.5% in 2016. The 10-year Treasury yield has since increased to the 2.5% range,  
14 with the majority of that increase coming in response to the November 8, 2016 U.S.  
15 presidential election.

16 Panel B on Exhibit JRW-2 shows the differences in yields between ten-year  
17 Treasuries and Moody’s Baa-rated bonds since the year 2000. This differential  
18 primarily reflects the additional risk premium required by bond investors for the risk  
19 associated with investing in corporate bonds as opposed to obligations of the U.S.  
20 Treasury. The difference also reflects, to some degree, yield curve changes over time.  
21 The Baa rating is the lowest of the investment grade bond ratings for corporate bonds.  
22 The yield differential hovered in the 2.0% to 3.5% range until 2005, declined to 1.5%  
23 until late 2007, and then increased significantly in response to the financial crisis. This

1 differential peaked at 6.0% at the height of the financial crisis in early 2009 due to  
2 tightening in credit markets, which increased corporate bond yields, and the “flight to  
3 quality,” which decreased Treasury yields. The differential subsequently declined and  
4 bottomed out at 2.4%. The differential has since increased to the 3.25% range.

5

6 **Q. YOU MENTIONED RISK PREMIUM BEING REFLECTED AS THE**  
7 **DIFFERENTIAL BETWEEN THE TEN-YEAR TREASURIES AND MOODY’S**  
8 **BAA-RATED BONDS. PLEASE EXPLAIN WHAT THE RISK PREMIUM IS**  
9 **AND HOW IT AFFECTS YOUR ANALYSIS.**

10 A. The risk premium is the return premium required by investors to purchase  
11 riskier securities. The risk premium required by investors to buy corporate bonds is  
12 observable based on yield differentials in the markets. The market risk premium is the  
13 return premium required to purchase stocks as opposed to bonds. The market or equity  
14 risk premium is not readily observable in the markets (like bond risk premiums)  
15 because expected stock market returns are not readily observable. As a result, equity  
16 risk premiums must be estimated using market data. There are alternative  
17 methodologies to estimate the equity risk premium, and these alternative approaches  
18 and equity risk premium results are subject to much debate. One way to estimate the  
19 equity risk premium is to compare the mean returns on bonds and stocks over long  
20 historical periods. Measured in this manner, the equity risk premium has been in the  
21 5% to 7% range.<sup>5</sup> However, studies by leading academics indicate that the forward-  
22 looking equity risk premium is actually in the 4.0% to 6.0% range. These lower equity

---

<sup>5</sup> See Exhibit JRW-11, p. 5-6.

1 risk premium results are in line with the findings of equity risk premium surveys of  
2 CFOs, academics, analysts, companies, and financial forecasters.

3

4 **Q. PLEASE REVIEW THE INTEREST RATES ON LONG-TERM UTILITY**  
5 **BONDS.**

6 A. Panel A of Exhibit JRW-3 provides the yields on A-rated public utility bonds.  
7 These yields peaked in November 2008 at 7.75% and henceforth declined significantly.  
8 These yields declined to below 4.0% in mid-2013, and then increased with interest rates  
9 in general to the 4.85% range as of late 2013. These rates dropped significantly during  
10 2014 due to economic growth concerns and were bottomed out below 4.0% in the first  
11 quarter of 2015. They increased with interest rates in general to 4.4% in the summer  
12 of 2015, and then declined to below 4.0% due to continued low economic growth and  
13 inflation in 2016. However, they have once again increased to above 4.0% with the  
14 increase in interest rates since the presidential election.

15 Panel B of Exhibit JRW-3 provides the yield spreads between long-term A-  
16 rated public utility bonds relative to the yields on 20-year U.S. Treasury bonds. These  
17 yield spreads increased dramatically in the third quarter of 2008 during the peak of the  
18 financial crisis and have decreased significantly since that time. The yield spreads  
19 between 20-year U.S. Treasury bonds and A-rated utility bonds peaked at 3.4% in  
20 November 2008, then declined to about 1.5% in the summer of 2012 as investor return  
21 requirements declined. The differential has gradually increased in recent years, and is  
22 now close to 2.0%.

23

1 **A. Capital Market Conditions**

2  
3 **Q. WHY ARE CAPITAL MARKET CONDITIONS AND THE OUTLOOK FOR**  
4 **INTEREST RATES AND CAPITAL COSTS IMPORTANT IN THIS CASE?**

5 A. As discussed above, a company's rate of return is its overall cost of capital. Capital  
6 costs, including the cost of debt and equity financing, are established in capital markets  
7 and reflect investors' return requirements on alternative investments based on risk and  
8 capital market conditions. These capital market conditions are a function of investors'  
9 expectations concerning many factors, including economic growth, inflation,  
10 government monetary and fiscal policies, and international developments, among  
11 others. In the wake of the financial crisis, much of the focus in the capital markets has  
12 been on the interaction of economic growth, interest rates, and the actions of the Federal  
13 Reserve (the "Fed"). In addition, as illustrated in the United Kingdom's June 24, 2016  
14 decision to leave the European Union ("BREXIT"), capital markets and global and  
15 capital costs are impacted by global events.

16  
17 **Q. WHAT IS DR. VANDER WEIDE'S ASSESSMENT OF THE CAPITAL**  
18 **MARKETS ENVIRONMENT?**

19 A. As discussed on pages 37-38 of his testimony, Dr. Vander Weide employs  
20 forecasts of interest rates in his CAPM and risk premium approaches. Dr. Vander  
21 Weide argues that market data and economists' projections indicate that long-term  
22 interest rates are going to increase.

1 Q. PLEASE EXPLAIN YOUR CONCERNS REGARDING DR. VANDER  
2 WEIDE'S CONCLUSION OF HIGHER LONG-TERM INTEREST RATES.

3 A. Over the last decade, there have been continual forecasts of higher long-term  
4 interest rates. However, these forecasts have proven to be wrong. For example, after  
5 the announcement of the end of the QE III program in 2014, all the economists in  
6 Bloomberg's interest rate survey forecasted interest rates would increase in 2014, and  
7 100% of the economists were wrong. According to the *Market Watch* article:<sup>6</sup>

8 The survey of economists' yield projections is generally skewed  
9 toward rising rates — only a few times since early 2009 have a  
10 majority of respondents to the Bloomberg survey thought rates  
11 would fall. But the unanimity of the rising rate forecasts in the  
12 spring was a stark reminder of how one-sided market views can  
13 become. It also teaches us that economists can be universally wrong.

14  
15 Two other financial publications have produced studies on how economists consistently  
16 predict higher interest rates, and yet they have been wrong. The first publication, entitled  
17 "How Interest Rates Keep Making People on Wall Street Look Like Fools," evaluated  
18 economists' forecasts for the yield on ten-year Treasury bonds at the beginning of the  
19 year for the last ten years.<sup>7</sup> The results demonstrated that economists consistently  
20 predict that interest rates will go higher, and interest rates have not fulfilled those  
21 predictions.

---

<sup>6</sup> Ben Eisen, "Yes, 100% of economists were dead wrong about yields, *Market Watch*," October 22, 2014. Perhaps reflecting this fact, *Bloomberg* reported that the Federal Reserve Bank of New York has stopped using the interest rate estimates of professional forecasters in the Bank's interest rate model due to the unreliability of those forecasters' interest rate forecasts. See Susanne Walker and Liz Capo McCormick, "Unstoppable \$100 Trillion Bond Market Renders Models Useless," *Bloomberg.com* (June 2, 2014). <http://www.bloomberg.com/news/2014-06-01/the-unstoppable-100-trillion-bond-market-renders-models-useless.html>.

<sup>7</sup> Joe Weisenthal, "How Interest Rates Keep Making People on Wall Street Look Like Fools," *Bloomberg.com*, March 16, 2015. <http://www.bloomberg.com/news/articles/2015-03-16/how-interest-rates-keep-making-people-on-wall-street-look-like-fools>.



1 **Q. PLEASE REVIEW THE FEDERAL RESERVE’S DECISION TO RAISE THE**  
2 **FEDERAL FUNDS RATE IN DECEMBER 2015.**

3 A. On December 16, 2015, the Fed decided to increase the target rate for Federal  
4 Funds to 0.25 – 0.50 percent.<sup>10</sup> This increase came after the rate was kept in the 0.0 to  
5 .25 percent range for over five years in order to spur economic growth in the wake of  
6 the financial crisis. The move occurred almost two years after the end of QE III  
7 program, the Federal Reserve’s bond buying program. The Federal Reserve has been  
8 cautious in its approach to scaling its monetary intervention, and has paid close  
9 attention to a number of economic variables, including GDP growth, retail sales,  
10 consumer confidence, unemployment, the housing market, and inflation.

11

12 **Q. HOW DID LONG-TERM INTEREST RATES REACT TO THE FEDERAL**  
13 **RESERVE’S 2015 DECISION TO INCREASE THE FEDERAL FUND RATE?**

14 A. The Fed’s decision to increase the Federal Fund rate range from 0.0%-0.25%  
15 to 0.25%-0.50% was highly anticipated in the markets. Yet, the yield on long-term  
16 Treasury bonds subsequently decreased from the 3.0% range at the time of the  
17 announcement to below 2.50% in mid-2015.

---

<sup>10</sup> The federal funds rate is set by the Federal Reserve and is the borrowing rate applicable to the most creditworthy financial institutions when they borrow and lend funds overnight to each other,

1 **Q. PLEASE ADDRESS THE FEDERAL RESERVE’S DECISION TO RAISE THE**  
2 **FEDERAL FUNDS RATE IN DECEMBER 2016, AND THE IMPACT, IF ANY,**  
3 **OF THE U.S. PRESIDENTIAL ELECTION ON THE FEDERAL FUNDS RATE.**

4 A. Long-term interest rates in the U.S. bottomed out in August 2016 and have  
5 increased since that time with improvements in the economy. Notable improvements  
6 include lower unemployment and improving economic growth and corporate earnings.  
7 Then came November 8, 2016, and financial markets moved significantly in the wake  
8 of the unexpected results in the U.S. presidential election. The stock market has gained  
9 almost 10% and the 30-year Treasury yield has increased about 50 basis points to its  
10 current level of 3.0%. These market adjustments reflect the expectation that the new  
11 administration will make changes in fiscal, regulatory, and possibly monetary policies  
12 which could lead to higher economic growth and inflation. As a result of these  
13 developments, the Federal Reserve’s decision at its December 13-14, 2016 meeting to  
14 raise its federal funds target rate to 0.50 - .075 percent was broadly expected and there  
15 was no significant market reaction.

16  
17 **Q. HOW WILL INTEREST RATES AND COST OF CAPITAL BE AFFECTED BY**  
18 **ECONOMIC FACTORS IN THE LONG TERM?**

19 A. In the long term, the key drivers of economic growth measured in nominal  
20 dollars are population growth, the advancement and diffusion of science and  
21 technology, and currency inflation. Although the U.S. experienced rapid economic  
22 growth during the “post-war” period (the 63 years that separated the end of World War  
23 II and the 2008 financial crisis), the post-war period is not necessarily reflective of



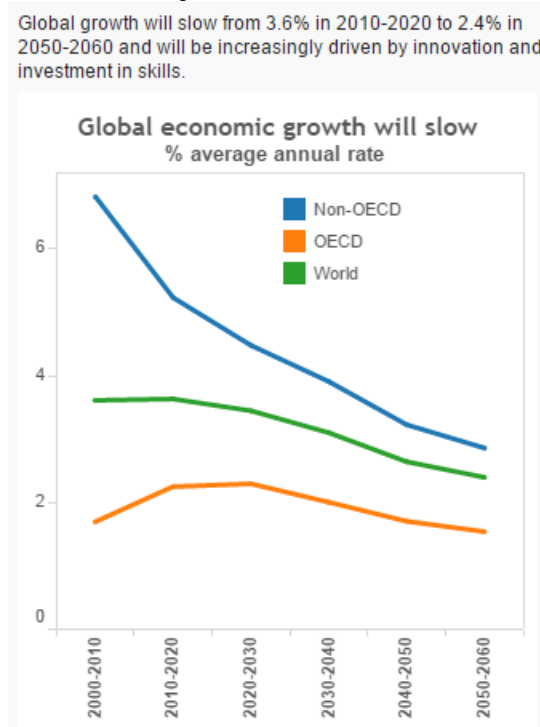
1 expected future growth. It was marked by a near-trebling of global population, from  
2 under 2.5 billion to approximately 6.7 billion. Over the next 54 years, according to  
3 United Nations projections, the global population will grow considerably more slowly,  
4 reaching approximately 10.3 billion in 2070. With population growth slowing, life  
5 expectancies lengthening, and post-war “baby boomers” reaching retirement age,  
6 median ages in developed-economy nations have risen and continue to rise. The  
7 postwar period was also marked by rapid catch-up growth as Europe, Japan, and China  
8 recovered from successive devastations and as regions such as India and China  
9 deployed and leapfrogged technologies that had been developed over a much longer  
10 period in earlier-industrialized nations. That period of rapid catch-up growth is coming  
11 to an end. For example, although China remains one of the world’s fastest-growing  
12 regions, its growth is now widely expected to slow substantially. This convergence of  
13 projected growth in the former “second world” and “third world” towards the slower  
14 growth of the nations that have long been considered “first world” is illustrated in this  
15 “key findings” chart published by the Organization for Economic Co-operation and  
16 Development.<sup>11</sup>

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<sup>11</sup> See <http://www.oecd.org/eco/outlook/lookingto2060.htm>.

1  
2

**Figure 4**  
**Projected Global Growth**



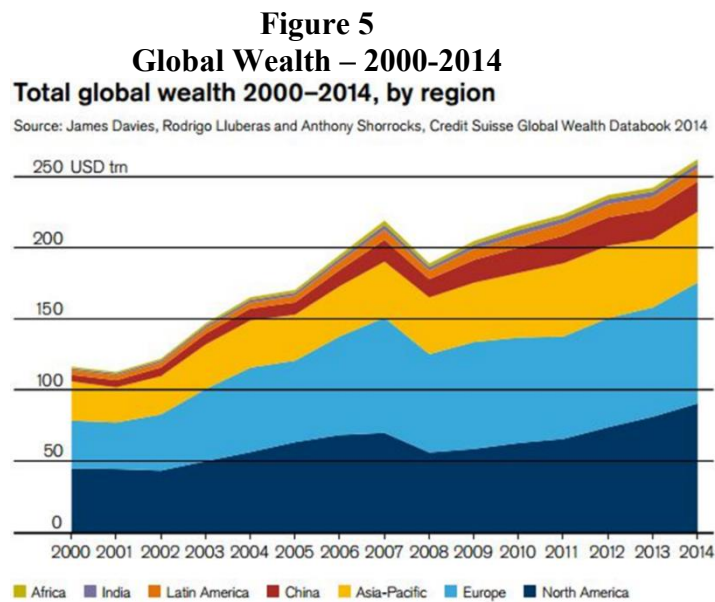
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12

As to dollar inflation, it has declined to far below the level it reached in the 1970s. The Federal Reserve targets a 2% inflation rate; however, actual inflation has been below this figure. Indeed, inflation has been below the Fed's target rate for over three years due to a number of factors, including slow global economic growth, slack in the economy, and declining energy and commodity prices. The slow pace of inflation is also reflected in the decline in forecasts of future inflation. The Energy Information Administration's annual Energy Outlook includes in its nominal GDP growth projection a long-term inflation component, which the EIA projects at only 2.1% per year for its forecast period through 2040.<sup>12</sup>

<sup>12</sup>See EIA Annual Energy Outlook 2016, Table 20 (available at [http://www.eia.gov/forecasts/aeo/tables\\_ref.cfm](http://www.eia.gov/forecasts/aeo/tables_ref.cfm)).

1 All of this translates into slowed growth in annual economic production and  
2 income, even when measured in nominal rather than real dollars. Meanwhile, the stored  
3 wealth that is available to fund investments has continued to rise. According to the  
4 most recent release of the Credit Suisse global wealth report, global wealth has more  
5 than doubled since the turn of this century, notwithstanding the temporary setback  
6 following the 2008 financial crisis:

7  
8



9

10 These long-term trends mean that overall, and relative to what had been the  
11 post-war norm, the world now has more wealth chasing fewer opportunities for  
12 investment rewards. Ben Bernanke, the former Chairman of the Federal Reserve,  
13 called this phenomenon a “global savings glut.”<sup>13</sup> Like any other liquid market, capital  
14 markets are subject to the law of supply and demand. With a large supply of capital  
15 available for investment and relatively scarce demand for investment capital, it should

<sup>13</sup> Ben S. Bernanke, *The Global Saving Glut and the U.S. Current Account Deficit* (Mar. 10, 2005), available at <http://www.federalreserve.gov/boarddocs/speeches/2005/200503102/>.

1 be no surprise to see the cost of investment capital decline and therefore interest rates  
2 should remain low.

3

4 **Q. ON THE ISSUE OF THE FEDERAL RESERVE AND LONG-TERM**  
5 **INTEREST RATES, PLEASE HIGHLIGHT FORMER FEDERAL RESERVE**  
6 **CHAIRMAN BEN BERNANKE’S RECENT TAKE ON THE LOW INTEREST**  
7 **RATES IN THE U.S.**

8 A. Mr. Bernanke addressed the issue of the continuing low interest rates in his  
9 weekly Brookings Blog. He indicated that the focus should be on real and not nominal  
10 interest rates and noted that, in the long term, these rates are not determined by the  
11 Federal Reserve.<sup>14</sup>

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

---

<sup>14</sup> Ben S. Bernanke, “Why are Interest Rates So Low,” Weekly Blog, Brookings, March 30, 2015.  
<http://www.brookings.edu/blogs/ben-bernanke/posts/2015/03/30-why-interest-rates-so-low>.

1 Mr. Bernanke also addressed the issue about whether low-interest rates are a  
2 short-term aberration or a long-term trend:<sup>15</sup>

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

14  
15  
16  
17

**Figure 6**  
**Interest Rates and Inflation**  
**1960-Present**



Source: Federal Reserve Board, BLS.

**BROOKINGS**

18

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<sup>15</sup> Ibid.

1 **Q. CAN YOU PLEASE PROVIDE THE COMMISSION WITH YOUR OPINION**  
2 **REGARDING THE FUTURE OUTLOOK FOR INTEREST RATES AND**  
3 **CAPITAL COSTS?**

4 A. I believe that U.S. Treasuries offer an attractive yield relative to those of other  
5 major governments around the world; the yield will attract capital to the U.S. and keep  
6 U.S. interest rates down. There are several factors driving this conclusion.

7 First, the economy has been growing for over seven years, and, as noted above,  
8 the Federal Reserve sees continuing strength in the economy. The labor market has  
9 improved, with unemployment now below 5.0%.<sup>16</sup>

10 Second, interest rates remain at low levels and are likely to remain low. There  
11 are two factors driving the continued lower interest rates: (1) inflationary expectations  
12 in the U.S. remain low; and (2) global economic growth – including Europe, where  
13 growth is stagnant, and China, where growth is slowing significantly. As a result, while  
14 the yields on long-term U.S. Treasury bonds are low by historical standards, these  
15 yields are well above the government bond yields in Germany, Japan, and the United  
16 Kingdom. Thus, U.S. Treasuries offer an attractive yield relative to those of other  
17 major governments around the world, thereby attracting capital to the U.S. and keeping  
18 U.S. interest rates down.

19

20 **Q. WHAT DO YOU RECOMMEND THE COMMISSION DO REGARDING THE**  
21 **FORECASTS OF HIGHER INTEREST RATES AND CAPITAL COSTS?**

22 A. I suggest that the Commission set an equity cost rate based on current market cost

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<sup>16</sup> See <http://data.bls.gov/timeseries/LNS1400000e>.

1 rate indicators and not decline to speculate on the future direction of interest rates. As the  
2 above studies indicate, economists are always predicting that interest rates are going up,  
3 and yet they are almost always wrong. Obviously, investors are well aware of the  
4 consistently wrong forecasts of higher interest rates, and therefore place little weight on  
5 such forecasts. Moreover, investors would not be buying long-term Treasury bonds or  
6 utility stocks at their current yields if they expected interest rates to suddenly increase,  
7 thereby producing higher yields and negative returns. For example, consider a utility that  
8 pays a dividend of \$2.00 with a stock price of \$50.00. The current dividend yield is 4.0%.  
9 If, as Dr. Vander Weide suggests, interest rates and required utility yields increase, the  
10 price of the utility stock would decline. In the example above, if higher return  
11 requirements led the dividend yield to increase from 4.0% to 5.0% in the next year, the  
12 stock price would have to decline to \$40, which would be a negative 20% return on the  
13 stock.<sup>17</sup> Obviously, investors would not buy the utility stock with an expected return of  
14 negative 20% due to higher dividend yield requirements.

15 In sum, it appears to be impossible to accurately forecast prices and rates that are  
16 determined in the financial markets, such as interest rates, the stock market, and gold  
17 prices. For interest rates, I have never seen a study that suggests one forecasting service  
18 is consistently better than others or that interest rate forecasts are consistently better than  
19 just assuming that the current interest rate will be the rate in the future. As discussed  
20 above, investors would not be buying long-term Treasury bonds or utility stocks at their  
21 current yields if they expected interest rates to suddenly increase, thereby producing

---

<sup>17</sup> In this example, for a stock with a \$2.00 dividend, a dividend yield 5.0% dividend yield would require a stock price of \$40 ( $\$2.00/\$40 = 5.0\%$ ).

1 higher yields and negative returns.

2

3

#### IV. PROXY GROUP SELECTION

4

5 **Q. PLEASE DESCRIBE YOUR APPROACH TO DEVELOPING A FAIR RATE**  
6 **OF RETURN RECOMMENDATION FOR GULF POWER.**

7 A. To develop a fair rate of return recommendation for the Company, I have  
8 evaluated the return requirements of investors on the common stock of a proxy group  
9 of publicly-held utility companies.

10

11 **Q. PLEASE DESCRIBE YOUR PROXY GROUP OF ELECTRIC COMPANIES.**

12 A. The selection criteria for the Electric Proxy Group include the following:

13 1. At least 50% of revenues from regulated electric operations as reported by *AUS*  
14 *Utilities Report*;

15 2. Listed as an Electric Utility by *Value Line Investment Survey* and listed as an  
16 Electric Utility or Combination Electric & Gas Utility in *AUS Utilities Report*;

17 3. An investment grade issuer credit rating by Moody's and Standard & Poor's  
18 ("S&P");

19 4. Has paid a cash dividend in the past six months, with no cuts or omissions;

20 5. Not involved in an acquisition of another utility, the target of an acquisition, or  
21 in the sale or spin-off of utility assets, in the past six months; and

22 6. Analysts' long-term earnings per share growth rate forecasts available from  
23 Yahoo, Reuters, and/or Zacks.



1           My Electric Proxy Group includes thirty companies. Summary financial  
2 statistics for the proxy group are listed in Panel A of page 1 of Exhibit JRW-4.<sup>18</sup> The  
3 median operating revenues and net plant among members of the Electric Proxy Group  
4 are \$6,084.5 million and \$16,741.0 million, respectively. The group receives 81% of  
5 its revenues from regulated electric operations, has BBB+/Baa1 issuer credit ratings  
6 from S&P and Moody's respectively, a current common equity ratio of 46.8%, and an  
7 earned return on common equity of 9.1%.

8

9 **Q. PLEASE DESCRIBE DR. VANDER WEIDE'S PROXY GROUP OF**  
10 **ELECTRIC UTILITY COMPANIES.**

11 A.           The Vander Weide Proxy Group consists of twenty-three electric utility  
12 companies.<sup>19</sup> Summary financial statistics for the proxy group are listed on Panel B of  
13 page 1 of Exhibit JRW-4. The median operating revenues and net plant among  
14 members of the Vander Weide Proxy Group are \$6,979.0 million and \$18,295.0  
15 million, respectively. The group receives 77% of revenues from regulated electric  
16 operations, has an average BBB+ issuer credit rating from S&P and an average Baa1  
17 long-term rating from Moody's, a current common equity ratio of 46.0%, and an earned  
18 return on common equity of 9.8%.

---

<sup>18</sup> In my testimony, I present financial results using both mean and medians as measures of central tendency. However, due to outliers among means, I have used the median as a measure of central tendency.

<sup>19</sup> I have eliminated Nextera Energy, Great Plains Energy, and Westar Energy due to announced merger and acquisition activity.

1 **Q. HOW DOES THE INVESTMENT RISK OF THE COMPANY COMPARE TO**  
2 **THAT OF THE TWO PROXY GROUPS?**

3 A. Bond ratings provide a good assessment of the investment risk of a company.  
4 Exhibit JRW-4 also shows S&P and Moody's issuer credit ratings for the companies in  
5 the two groups. Gulf Power's issuer credit rating is A- according to S&P and A2  
6 according to Moody's. These ratings are better than the average S&P and Moody's  
7 issuer credit ratings for the Electric Proxy Group and the Vander Weide Proxy Groups,  
8 which are BBB+ and Baa1. Specifically, Gulf's S&P rating is one notch (A- vs BBB+)  
9 above averages of the groups, and Gulf's Moody's rating is two notches (A2 vs Baa1)  
10 above the averages of the groups. Therefore, I believe that Gulf Power's investment  
11 risk is below that of the Electric and Vander Weide Proxy Groups.

12  
13 **Q. HOW DOES THE INVESTMENT RISK OF THE TWO GROUPS COMPARE**  
14 **BASED ON THE VARIOUS RISK METRICS PUBLISHED BY *VALUE LINE*?**

15 A. On page 2 of Exhibit JRW-4, I have assessed the riskiness of the two proxy  
16 groups using five different risk measures. These measures include Beta, Financial  
17 Strength, Safety, Earnings Predictability, and Stock Price Stability. These risk  
18 measures suggest that the two proxy groups are similar in risk. The comparisons of the  
19 risk measures include Beta (0.70 vs. 0.70), Financial Strength (A vs. A) Safety (2.0 vs.  
20 2.0), Earnings Predictability (78 vs. 81), and Stock Price Stability (96 vs. 97). On  
21 balance, these measures suggest that the two proxy groups are similar in risk.

1           **V.     CAPITAL STRUCTURE RATIOS AND DEBT COST RATES**

2

3   **Q.     PLEASE DESCRIBE GULF POWER’S PROPOSED CAPITAL STRUCTURE**  
4   **AND SENIOR CAPITAL COST RATES.**

5   A.           Gulf Power witness Ritenour provides the Company’s proposed capital  
6   structure and senior capital cost rates. Gulf Power’s recommended capital structure  
7   from investors’ sources includes 1.56% short-term debt, 40.13% long-term debt, 5.19%  
8   preferred stock, and 53.12% common equity. Gulf Power uses short-term and long-  
9   term debt cost rates of 3.02% and 4.40%, and a preferred stock cost rate of 6.15%.

10

11   **Q.     WHAT ARE THE COMMON EQUITY RATIOS IN THE CAPITALIZATIONS**  
12   **OF THE TWO PROXY GROUPS?**

13   A.           As shown in Exhibit JRW-4, the average common equity ratios for the Electric  
14   and Vander Weide Proxy Groups are 46.8% and 46.0%. This indicates that the  
15   Company’s proposed capitalization from investor capital with a common equity ratio of  
16   53.12% has higher equity and therefore lower financial risk than the capital structures of  
17   the two proxy groups. It should be noted that these capitalization ratios include total debt,  
18   which consists of both short-term and long-term debt. In assessing financial risk, short-  
19   term debt is included because, just like long-term debt, short-term debt has a higher claim  
20   on the assets and earnings of the company and requires timely payment of interest and  
21   repayment of principal.

1 **Q. HOW DOES THE COMPANY’S PROPOSED COMMON EQUITY RATIO**  
2 **COMPARE TO THAT OF ITS PARENT, SOUTHERN COMPANY?**

3 A. As shown in Exhibit JRW-4, Southern Company has a current common equity  
4 ratio of 37.1%. Therefore, Gulf has proposed a capitalization that is more than fifteen  
5 percentage points higher than the capitalization of its parent company, Southern.

6

7 **Q. PLEASE DISCUSS THE SIGNIFICANCE OF THE AMOUNT OF EQUITY THAT**  
8 **IS INCLUDED IN AN ELECTRIC UTILITY’S CAPITAL STRUCTURE.**

9 A. An electric utility’s decision as to the amount of equity capital it will  
10 incorporate into its capital structure involves fundamental trade-offs relating to the  
11 amount of financial risk the firm carries, the overall revenue requirements its customers  
12 are required to bear through the rates they pay, and the return on equity that investors  
13 will require.

14

15 **Q. PLEASE DISCUSS A UTILITY’S DECISION TO USE DEBT VERSUS**  
16 **EQUITY TO MEET ITS CAPITAL NEEDS.**

17 A. Utilities satisfy their capital needs through a mix of equity and debt. Because  
18 equity capital is more expensive than debt, the issuance of debt enables a utility to raise  
19 more capital for a given commitment of dollars than it could raise with just equity. Debt  
20 is, therefore, a means of “leveraging” capital dollars. However, as the amount of debt  
21 in the capital structure increases, its financial risk increases and the risk of the utility,  
22 as perceived by equity investors also increases. Significantly for this case, the converse  
23 is also true. As the amount of debt in the capital structure decreases, the financial risk

1 decreases. The required return on equity capital is a function of the amount of overall  
2 risk that investors perceive, including financial risk in the form of debt.

3

4 **Q. WHY IS THIS RELATIONSHIP IMPORTANT TO THE UTILITY'S**  
5 **CUSTOMERS?**

6 A. Just as there is a direct correlation between the utility's authorized return on  
7 equity and the utility's revenue requirements (the higher the return, the greater the  
8 revenue requirement), there is a direct correlation between the amount of equity in the  
9 capital structure and the revenue requirements the customers are called on to bear.  
10 Again, equity capital is more expensive than debt. Not only does equity command a  
11 higher cost rate, it also adds more to the income tax burden that ratepayers are required  
12 to pay through rates. As the equity ratio increases, the utility's revenue requirements  
13 increase and the rates paid by customers increase. If the proportion of equity is too  
14 high, rates will be higher than they need to be. For this reason, the utility's management  
15 should pursue a capital acquisition strategy that results in the proper balance in the  
16 capital structure.

17

18 **Q. HOW HAVE ELECTRIC UTILITIES TYPICALLY STRUCK THIS**  
19 **BALANCE?**

20 A. Due to regulation and the essential nature of its output, an electric utility is  
21 exposed to less business risk than other companies that are not regulated. This means  
22 that an electric utility can reasonably carry relatively more debt in its capital structure  
23 than can most unregulated companies. Thus, a utility should take appropriate

1 advantage of its lower business risk to employ cheaper debt capital at a level that will  
2 benefit its customers through lower revenue requirements. Typically, one may see  
3 equity ratios for electric utilities range from the 40% to 50% range.

4

5 **Q. HAVE RATING AGENCIES RECOGNIZED THE TREND TOWARD**  
6 **ELECTRIC UTILITY HOLDING COMPANIES USING MORE DEBT THAN**  
7 **THEIR OPERATING SUBSIDIARIES?**

8 A. Yes, they have. The strategy of using low-cost debt at the parent level to finance  
9 equity in a regulated subsidiary is known as “double leverage.” Moody’s recently  
10 published an article on the use of low-cost debt financing by public utility holding  
11 companies to increase their ROEs. The summary observations included the following:

12 20

13 US utilities use leverage at the holding-company level to invest in  
14 other businesses, make acquisitions and earn higher returns on  
15 equity. In some cases, an increase in leverage at the parent can hurt  
16 the credit profiles of its regulated subsidiaries.

17

18 Moody’s defined double leverage in the following way:<sup>21</sup>

19

20 Double leverage is a financial strategy whereby the parent raises  
21 debt but downstreams the proceeds to its operating subsidiary, likely  
22 in the form of an equity investment. Therefore, the subsidiary’s  
23 operations are financed by debt raised at the subsidiary level and by  
24 debt financed at the holding-company level. In this way, the  
25 subsidiary’s equity is leveraged twice, once with the subsidiary debt  
26 and once with the holding-company debt. In a simple operating-  
27 company / holding-company structure, this practice results in a  
28 consolidated debt-to-capitalization ratio that is higher at the parent  
29 than at the subsidiary because of the additional debt at the parent.

30

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<sup>20</sup> Moody’s Investors’ Service, “High Leverage at the Parent Often Hurts the Whole Family,” May 11, 2015, p.1.

<sup>21</sup> *Ibid.* p. 5.

1 Moody's goes on to discuss the potential risk to utilities of this strategy, and  
2 specifically notes that regulators could take it into consideration in setting authorized  
3 ROEs.<sup>22</sup>

4 **“Double leverage” drives returns for some utilities but could**  
5 **pose risks down the road.** The use of double leverage, a long-  
6 standing practice whereby a holding company takes on debt and  
7 downstreams the proceeds to an operating subsidiary as equity,  
8 could pose risks down the road if regulators were to ascribe the debt  
9 at the parent level to the subsidiaries or adjust the authorized return  
10 on capital.  
11

12 **Q. GIVEN THAT GULF HAS PROPOSED AN EQUITY RATIO THAT IS**  
13 **HIGHER THAN THAT OF BOTH PROXY GROUPS AND ITS PARENT,**  
14 **WHAT SHOULD THE COMMISSION DO IN THIS RATEMAKING**  
15 **PROCEEDING?**

16 A. When a regulated electric utility's actual capital structure contains a high equity  
17 ratio, the options are: (1) to impute a more reasonable capital structure and to reflect  
18 the imputed capital structure in revenue requirements; or (2) to recognize the downward  
19 impact that an unusually high equity ratio will have on the financial risk of a utility and  
20 authorize a lower common equity cost rate.  
21

22 **Q. PLEASE ELABORATE ON THIS “DOWNWARD IMPACT.”**

23 A. As I stated earlier, there is a direct correlation between the amount of debt in a  
24 utility's capital structure and the financial risk that an equity investor will associate  
25 with that utility. A relatively lower proportion of debt translates into a lower required

---

<sup>22</sup> *Ibid.* p. 1.

1 return on equity, all other things being equal. Stated differently, a utility cannot expect  
2 to “have it both ways.” Specifically, a utility cannot maintain an unusually high equity  
3 ratio and not expect to have the resulting lower risk reflected in its authorized return on  
4 equity. The fundamental relationship between the lower risk and the appropriate  
5 authorized return should not be ignored.

6 **Q. HOW DO YOU PLAN TO ACCOUNT FOR THE DIFFERENCE IN THE**  
7 **CAPITAL STRUCTURE?**

8 A. I am using a capital structure with an imputed common equity ratio of 50.0%.  
9 In other words, as shown in Exhibit JRW-5, I lower the common equity ratio from  
10 53.12% to 50.00%, and increase the ratios for short-term debt (1.56% to 1.67%), long-  
11 term debt (40.13% to 42.80%), and preferred stock (5.19% to 5.53%).

12

13 **. Q. WHAT CAPITAL STRUCTURES ARE YOU PROPOSING FOR GULF?**

14 A. My proposed capital structure, from investor-provided capital, includes 1.67%  
15 short-term debt, 42.80% long-term debt, 5.53% Preferred stock, and 50.00% common  
16 equity. It should be noted that this capital structure includes a common equity ratio  
17 (50.0%) that is above the averages of the two proxy groups (46.8% and 46.0%) utilized  
18 by me and Gulf Power witness Vander Weide.

19

20 **Q. WHAT SENIOR CAPITAL COST RATES ARE YOU USING FOR GULF**  
21 **POWER?**



1 A. I am using the Company's proposed cost rates for short-term and long-term debt  
2 and preferred stock.

3

4 **VI. THE COST OF COMMON EQUITY CAPITAL**

5

6 **A. Overview**

7

8 **Q. WHY MUST AN OVERALL COST OF CAPITAL OR FAIR RATE OF**  
9 **RETURN BE ESTABLISHED FOR A PUBLIC UTILITY?**

10 A. In a competitive industry, the return on a firm's common equity capital is  
11 determined through the competitive market for its goods and services. Due to the  
12 capital requirements needed to provide utility services and the economic benefit to  
13 society from avoiding duplication of these services and the construction of utility  
14 infrastructure facilities, many public utilities are monopolies. Because of the lack of  
15 competition and the essential nature of their services, it is not appropriate to permit  
16 monopoly utilities to set their own prices. Thus, regulation seeks to establish prices  
17 that are fair to consumers and, at the same time, sufficient to meet the operating and  
18 capital costs of the utility, *i.e.*, provide an adequate return on capital to attract investors.

19

20 **Q. PLEASE PROVIDE AN OVERVIEW OF THE COST OF CAPITAL IN THE**  
21 **CONTEXT OF THE THEORY OF THE FIRM.**

22 A. The total cost of operating a business includes the cost of capital. The cost of  
23 common equity capital is the expected return on a firm's common stock that the

1 marginal investor would deem sufficient to compensate for risk and the time value of  
2 money. In equilibrium, the expected and required rates of return on a company's  
3 common stock are equal.

4 Normative economic models of a company or firm, developed under very  
5 restrictive assumptions, provide insight into the relationship between firm performance  
6 or profitability, capital costs, and the value of the firm. Under the economist's ideal  
7 model of perfect competition, where entry and exit are costless, products are  
8 undifferentiated, and there are increasing marginal costs of production, firms produce  
9 up to the point where price equals marginal cost. Over time, a long-run equilibrium is  
10 established where price equals average cost, including the firm's capital costs. In  
11 equilibrium, total revenues equal total costs, and because capital costs represent  
12 investors' required return on the firm's capital, actual returns equal required returns,  
13 and the market value must equal the book value of the firm's securities.

14 In a competitive market, firms can achieve competitive advantage due to  
15 product market imperfections. Most notably, companies can gain competitive  
16 advantage through product differentiation (adding real or perceived value to products)  
17 and by achieving economies of scale (decreasing marginal costs of production).  
18 Competitive advantage allows firms to price products above average cost and thereby  
19 earn accounting profits greater than those required to cover capital costs. When these  
20 profits are in excess of that required by investors, or when a firm earns a return on  
21 equity in excess of its cost of equity, investors respond by valuing the firm's equity in  
22 excess of its book value.

1 James M. McTaggart, founder of the international management consulting firm  
2 Marakon Associates, described this essential relationship between the return on equity,  
3 the cost of equity, and the market-to-book ratio in the following manner:

4 Fundamentally, the value of a company is determined by the cash  
5 flow it generates over time for its owners, and the minimum  
6 acceptable rate of return required by capital investors. This “cost of  
7 equity capital” is used to discount the expected equity cash flow,  
8 converting it to a present value. The cash flow is, in turn, produced  
9 by the interaction of a company’s return on equity and the annual  
10 rate of equity growth. High return on equity (ROE) companies in  
11 low-growth markets, such as Kellogg, are prodigious generators of  
12 cash flow, while low ROE companies in high-growth markets, such  
13 as Texas Instruments, barely generate enough cash flow to finance  
14 growth.

15 A company’s ROE over time, relative to its cost of equity, also  
16 determines whether it is worth more or less than its book value. If  
17 its ROE is consistently greater than the cost of equity capital (the  
18 investor’s minimum acceptable return), the business is economically  
19 profitable and its market value will exceed book value. If, however,  
20 the business earns an ROE consistently less than its cost of equity,  
21 it is economically unprofitable and its market value will be less than  
22 book value.<sup>23</sup>

23 As such, the relationship between a firm’s return on equity, cost of equity, and  
24 market-to-book ratio is relatively straightforward. A firm that earns a return on equity  
25 above its cost of equity will see its common stock sell at a price above its book value.  
26 Conversely, a firm that earns a return on equity below its cost of equity will see its  
27 common stock sell at a price below its book value.

28

29 **Q. PLEASE PROVIDE ADDITIONAL INSIGHTS INTO THE RELATIONSHIP**  
30 **BETWEEN ROE AND MARKET-TO-BOOK RATIOS.**

---

<sup>23</sup> James M. McTaggart, “The Ultimate Poison Pill: Closing the Value Gap,” *Commentary* (Spring 1986), p.3.

1 A. This relationship is discussed in a classic Harvard Business School case study  
2 entitled “Note on Value Drivers.” On page 2 of that case study, the author describes  
3 the relationship very succinctly:

4 For a given industry, more profitable firms – those able to  
5 generate higher returns per dollar of equity– should have higher  
6 market-to-book ratios. Conversely, firms which are unable to  
7 generate returns in excess of their cost of equity should sell for less  
8 than book value.

9

<i>Profitability</i>	<i>Value</i>
<i>If ROE &gt; K</i>	<i>then Market/Book &gt; 1</i>
<i>If ROE = K</i>	<i>then Market/Book = 1</i>
<i>If ROE &lt; K</i>	<i>then Market/Book &lt; 1</i> <sup>24</sup>

10  
11  
12  
13

14 To assess the relationship by industry, as suggested above, I performed a  
15 regression study between estimated ROE and market-to-book ratio ratios using natural  
16 gas distribution, electric utility, and water utility companies. I used all companies in  
17 these three industries that are covered by *Value Line* and have estimated ROE and  
18 market-to-book ratio data. The results are presented in Panels A-C of Exhibit JRW-6.  
19 The average R-squares for the electric, gas, and water companies are 0.77, 0.56, and  
20 0.75, respectively.<sup>25</sup> This demonstrates the strong positive relationship between ROEs  
21 and market-to-book ratios for public utilities.

22

23 **Q. WHAT ECONOMIC FACTORS HAVE AFFECTED THE COST OF EQUITY**  
24 **CAPITAL FOR PUBLIC UTILITIES?**

---

<sup>24</sup> Benjamin Esty, “Note on Value Drivers,” Harvard Business School, Case No. 9-297-082, April 7, 1997.

<sup>25</sup> R-square measures the percent of variation in one variable (e.g., market-to-book ratios) explained by another variable (e.g., expected ROE). R-squares vary between zero and 1.0, with values closer to 1.0 indicating a higher relationship between two variables.

1 A. Exhibit JRW-7 provides indicators of public utility equity cost rates over the  
2 past decade.

3 Page 1 shows the yields on long-term A-rated public utility bonds. These yields  
4 decreased from 2000 until 2003, and then hovered in the 5.50%-6.50% range from mid-  
5 2003 until mid-2008. These yields spiked up to the 7.75% range with the onset of the  
6 Great Recession financial crisis in 2008, and remained high and volatile until early  
7 2009. These yields declined to below 4.0% in mid-2012, and then increased with  
8 interest rates in general to the 4.85% range as of late 2013. They subsequently declined  
9 to below 4.0% in the first quarter of 2015, increased with interest rates in general in  
10 2015, and have now dropped back to the 4.0% range.

11 Page 2 of Exhibit JRW-7 provides the dividend yields for electric utilities over  
12 the past decade. The dividend yields for this electric group have declined from the year  
13 2000 to 2007, increased to 5.2% in 2009, and declined to about 3.75% in 2014 and  
14 2015.

15 Average earned returns on common equity and market-to-book ratios for  
16 electric utilities are on page 3 of Exhibit JRW-7. For the electric group, earned returns  
17 on common equity have declined gradually since the year 2000 and have been in the  
18 9.0% range in recent years. The average market-to-book ratios for this group peaked  
19 at 1.68X in 2007, declined to 1.07X in 2009, and have increased since that time. As of  
20 2015, the average market-to-book for the group was 1.55X. This means that, for at  
21 least the last decade, returns on common equity have been greater than the cost of  
22 capital, or more than necessary to meet investors' required returns. This also means

1 that customers have been paying more than necessary to support an appropriate profit  
2 level for regulated utilities.

3

4 **Q. WHAT FACTORS DETERMINE INVESTORS' EXPECTED OR REQUIRED**  
5 **RATE OF RETURN ON EQUITY?**

6 A. The expected or required rate of return on common stock is a function of  
7 market-wide as well as company-specific factors. The most important market factor is  
8 the time value of money as indicated by the level of interest rates in the economy.  
9 Common stock investor requirements generally increase and decrease with like changes  
10 in interest rates. The perceived risk of a firm is the predominant factor that influences  
11 investor return requirements on a company-specific basis. A firm's investment risk is  
12 often separated into business and financial risk. Business risk encompasses all factors  
13 that affect a firm's operating revenues and expenses. Financial risk results from  
14 incurring fixed obligations in the form of debt in financing its assets.

15

16 **Q. HOW DOES THE INVESTMENT RISK OF UTILITIES COMPARE WITH**  
17 **THAT OF OTHER INDUSTRIES?**

18 A. Due to the essential nature of their service as well as their regulated status,  
19 public utilities are exposed to a lesser degree of business risk than other, non-regulated  
20 businesses. The relatively low level of business risk allows public utilities to meet  
21 much of their capital requirements through borrowing in the financial markets, thereby  
22 incurring greater than average financial risk. Nonetheless, the overall investment risk  
23 of public utilities is below most other industries.

1           Exhibit JRW-8 provides an assessment of investment risk for 97 industries as  
2 measured by beta, which according to modern capital market theory, is the only  
3 relevant measure of investment risk. These betas come from the *Value Line Investment*  
4 *Survey*. The study shows that the investment risk of utilities is very low. The average  
5 betas for electric, water, and gas utility companies are 0.72, 0.71, and 0.74,  
6 respectively. As such, the cost of equity for utilities is among the lowest of all  
7 industries in the U.S.

8

9 **Q.    WHAT IS THE COST OF COMMON EQUITY CAPITAL?**

10 A.       The costs of debt and preferred stock are normally based on historical or book  
11 values and can be determined with a great degree of accuracy. The cost of common  
12 equity capital, however, cannot be determined precisely and must instead be estimated  
13 from market data and informed judgment. This return requirement of the stockholder  
14 should be commensurate with the return requirement on investments in other  
15 enterprises having comparable risks.

16           According to valuation principles, the present value of an asset equals the  
17 discounted value of its expected future cash flows. Investors discount these expected  
18 cash flows at their required rate of return that, as noted above, reflects the time value  
19 of money and the perceived riskiness of the expected future cash flows. As such, the  
20 cost of common equity is the rate at which investors discount expected cash flows  
21 associated with common stock ownership.

1 **Q. HOW CAN THE EXPECTED OR REQUIRED RATE OF RETURN ON**  
2 **COMMON EQUITY CAPITAL BE DETERMINED?**

3 A. Models have been developed to ascertain the cost of common equity capital for  
4 a firm. Each model, however, has been developed using restrictive economic  
5 assumptions. Consequently, judgment is required in selecting appropriate financial  
6 valuation models to estimate a firm's cost of common equity capital, in determining  
7 the data inputs for these models, and in interpreting the models' results. All of these  
8 decisions must take into consideration the firm involved as well as current conditions  
9 in the economy and the financial markets.

10

11 **Q. HOW DO YOU PLAN TO ESTIMATE THE COST OF EQUITY CAPITAL**  
12 **FOR GULF POWER?**

13 A. I rely primarily on the discounted cash flow ("DCF") model to estimate the cost  
14 of equity capital. Given the investment valuation process and the relative stability of  
15 the utility business, the DCF model provides the best measure of equity cost rates for  
16 public utilities. I have also performed a capital asset pricing model ("CAPM") study;  
17 however, I give these results less weight because I believe that risk premium studies,  
18 of which the CAPM is one form, provide a less reliable indication of equity cost rates  
19 for public utilities.



1 **B. DCF Analysis**

2  
3 **Q. PLEASE DESCRIBE THE THEORY BEHIND THE TRADITIONAL DCF**  
4 **MODEL.**

5 A. According to the DCF model, the current stock price is equal to the discounted  
6 value of all future dividends that investors expect to receive from investment in the  
7 firm. As such, stockholders' returns ultimately result from current as well as future  
8 dividends. As owners of a corporation, common stockholders are entitled to a *pro rata*  
9 share of the firm's earnings. The DCF model presumes that earnings that are not paid  
10 out in the form of dividends are reinvested in the firm so as to provide for future growth  
11 in earnings and dividends. The rate at which investors discount future dividends, which  
12 reflects the timing and riskiness of the expected cash flows, is interpreted as the  
13 market's expected or required return on the common stock. Therefore, this discount  
14 rate represents the cost of common equity. Algebraically, the DCF model can be  
15 expressed as:

16 
$$P = \frac{D_1}{(1+k)^1} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_n}{(1+k)^n}$$

17  
18  
19  
20 where P is the current stock price,  $D_n$  is the dividend in year n, and k is the cost of  
21 common equity.

22  
23 **Q. IS THE DCF MODEL CONSISTENT WITH VALUATION TECHNIQUES**  
24 **EMPLOYED BY INVESTMENT FIRMS?**

1 A. Yes. Virtually all investment firms use some form of the DCF model as a  
2 valuation technique. One common application for investment firms is called the three-  
3 stage DCF or dividend discount model (“DDM”). The stages in a three-stage DCF  
4 model are presented in Exhibit JRW-9, Page 1 of 2. This model presumes that a  
5 company’s dividend payout progresses initially through a growth stage, then proceeds  
6 through a transition stage, and finally assumes a maturity (or steady-state) stage. The  
7 dividend-payment stage of a firm depends on the profitability of its internal investments  
8 which, in turn, is largely a function of the life cycle of the product or service.

9 1. Growth stage: Characterized by rapidly expanding sales, high profit  
10 margins, and an abnormally high growth in earnings per share. Because of  
11 highly profitable expected investment opportunities, the payout ratio is low.  
12 Competitors are attracted by the unusually high earnings, leading to a decline  
13 in the growth rate.

14 2. Transition stage: In later years, increased competition reduces profit  
15 margins and earnings growth slows. With fewer new investment opportunities,  
16 the company begins to pay out a larger percentage of earnings.

17 3. Maturity (steady-state) stage: Eventually, the company reaches a  
18 position where its new investment opportunities offer, on average, only slightly  
19 more attractive ROEs. At that time, its earnings growth rate, payout ratio, and  
20 ROE stabilize for the remainder of its life. The constant-growth DCF model is  
21 appropriate when a firm is in the maturity stage of the life cycle.

22 In using this model to estimate a firm’s cost of equity capital, dividends are  
23 projected into the future using the different growth rates in the alternative stages, and

1 then the equity cost rate is the discount rate that equates the present value of the future  
2 dividends to the current stock price.

3

4 **Q. HOW DO YOU ESTIMATE STOCKHOLDERS' EXPECTED OR REQUIRED**  
5 **RATE OF RETURN USING THE DCF MODEL?**

6 A. Under certain assumptions, including a constant and infinite expected growth  
7 rate, and constant dividend/earnings and price/earnings ratios, the DCF model can be  
8 simplified to the following:

9

$$10 \quad P = \frac{D_1}{k - g}$$

11

12

13 where  $D_1$  represents the expected dividend over the coming year and  $g$  is the expected  
14 growth rate of dividends. This is known as the constant-growth version of the DCF  
15 model. To use the constant-growth DCF model to estimate a firm's cost of equity, one  
16 solves for  $k$  in the above expression to obtain the following:

17

18

$$19 \quad k = \frac{D_1}{P} + g$$

20

21

22 **Q. IN YOUR OPINION, IS THE CONSTANT-GROWTH DCF MODEL**  
23 **APPROPRIATE FOR PUBLIC UTILITIES?**

24 A. Yes. The economics of the public utility business indicate that the industry is  
25 in the steady-state or constant-growth stage of a three-stage DCF. The economics  
26 include the relative stability of the utility business, the maturity of the demand for  
27 public utility services, and the regulated status of public utilities (especially the fact

1 that their returns on investment are effectively set through the ratemaking process).  
2 The DCF valuation procedure for companies in this stage is the constant-growth DCF.  
3 In the constant-growth version of the DCF model, the current dividend payment and  
4 stock price are directly observable. However, the primary problem and controversy in  
5 applying the DCF model to estimate equity cost rates entails estimating investors'  
6 expected dividend growth rate.

7

8 **Q. WHAT FACTORS SHOULD ONE CONSIDER WHEN APPLYING THE DCF**  
9 **METHODOLOGY?**

10 A. One should be sensitive to several factors when using the DCF model to  
11 estimate a firm's cost of equity capital. In general, one must recognize the assumptions  
12 under which the DCF model was developed in estimating its components (the dividend  
13 yield and the expected growth rate). The dividend yield can be measured precisely at  
14 any point in time; however, it tends to vary somewhat over time. Estimation of  
15 expected growth is considerably more difficult. One must consider recent firm  
16 performance, in conjunction with current economic developments and other  
17 information available to investors, to accurately estimate investors' expectations.

18

19 **Q. WHAT DIVIDEND YIELDS HAVE YOU REVIEWED?**

20 A. I have calculated the dividend yields for the companies in the proxy group using  
21 the current annual dividend and the 30-day, 90-day, and 180-day average stock prices.  
22 These dividend yields are provided in Panel A of page 2 of Exhibit JRW-10. For the  
23 Electric Proxy Group, the median dividend yields using the 30-day, 90-day, and 180-

1 day average stock prices range from 3.40% to 3.43%. I am using the average of the  
2 medians - 3.40% - as the dividend yield for the Electric Proxy Group. The dividend  
3 yields for the Vander Weide Proxy Group are shown in Panel B of page 2 of Exhibit  
4 JRW-10. The median dividend yields range from 3.41% to 3.43% using the 30-day,  
5 90-day, and 180-day average stock prices. I am using the average of the medians –  
6 3.40% - as the dividend yield for the Vander Weide Proxy Group.

7 **Q. PLEASE DISCUSS THE APPROPRIATE ADJUSTMENT TO THE SPOT**  
8 **DIVIDEND YIELD.**

9 A. According to the traditional DCF model, the dividend yield term relates to the  
10 dividend yield over the coming period. As indicated by Professor Myron Gordon, who  
11 is commonly associated with the development of the DCF model for popular use, this  
12 is obtained by: (1) multiplying the expected dividend over the coming quarter by 4,  
13 and (2) dividing this dividend by the current stock price to determine the appropriate  
14 dividend yield for a firm that pays dividends on a quarterly basis.<sup>26</sup>

15 In applying the DCF model, some analysts adjust the current dividend for  
16 growth over the coming year as opposed to the coming quarter. This can be  
17 complicated because firms tend to announce changes in dividends at different times  
18 during the year. As such, the dividend yield computed based on presumed growth over  
19 the coming quarter as opposed to the coming year can be quite different. Consequently,

---

<sup>26</sup> *Petition for Modification of Prescribed Rate of Return*, Federal Communications Commission, Docket No. 79-05, Direct Testimony of Myron J. Gordon and Lawrence I. Gould at 62 (April 1980).

1 it is common for analysts to adjust the dividend yield by some fraction of the long-term  
2 expected growth rate.

3

4 **Q. GIVEN THIS DISCUSSION, WHAT ADJUSTMENT FACTOR DO YOU USE**  
5 **FOR YOUR DIVIDEND YIELD?**

6 A. I adjust the dividend yield by one-half (1/2) of the expected growth so as to  
7 reflect growth over the coming year. The DCF equity cost rate (“K”) is computed as:

$$8 \quad K = [ (D/P) * (1 + 0.5g) ] + g$$

9

10 **Q. PLEASE DISCUSS THE GROWTH RATE COMPONENT OF THE DCF**  
11 **MODEL.**

12 A. There is debate as to the proper methodology to employ in estimating the  
13 growth component of the DCF model. By definition, this component is investors’  
14 expectation of the long-term dividend growth rate. Presumably, investors use some  
15 combination of historical and/or projected growth rates for earnings and dividends per  
16 share and for internal or book-value growth to assess long-term potential.

17

18 **Q. WHAT GROWTH DATA HAVE YOU REVIEWED FOR THE PROXY**  
19 **GROUPS?**

20 A. I have analyzed a number of measures of growth for companies in the proxy  
21 groups. I reviewed *Value Line’s* historical and projected growth rate estimates for  
22 earnings per share (“EPS”), dividends per share (“DPS”), and book value per share  
23 (“BVPS”). In addition, I utilized the average EPS growth rate forecasts of Wall Street

1 analysts as provided by Yahoo, Reuters and Zacks. These services solicit five-year  
2 earnings growth rate projections from securities analysts and compile and publish the  
3 means and medians of these forecasts. Finally, I also assessed prospective growth as  
4 measured by prospective earnings retention rates and earned returns on common equity.

5

6 **Q. PLEASE DISCUSS HISTORICAL GROWTH IN EARNINGS AND**  
7 **DIVIDENDS AS WELL AS INTERNAL GROWTH.**

8 A. Historical growth rates for EPS, DPS, and BVPS are readily available to  
9 investors and are presumably an important ingredient in forming expectations  
10 concerning future growth. However, one must use historical growth numbers as  
11 measures of investors' expectations with caution. In some cases, past growth may not  
12 reflect future growth potential. Also, employing a single growth rate number (for  
13 example, for five or ten years) is unlikely to accurately measure investors' expectations,  
14 due to the sensitivity of a single growth rate figure to fluctuations in individual firm  
15 performance as well as overall economic fluctuations (*i.e.*, business cycles). However,  
16 one must appraise the context in which the growth rate is being employed. According  
17 to the conventional DCF model, the expected return on a security is equal to the sum  
18 of the dividend yield and the expected long-term growth in dividends. Therefore, to  
19 best estimate the cost of common equity capital using the conventional DCF model,  
20 one must look to long-term growth rate expectations.

21 Internally generated growth is a function of the percentage of earnings retained  
22 within the firm (the earnings retention rate) and the rate of return earned on those  
23 earnings (the return on equity). The internal growth rate is computed as the retention

1 rate times the return on equity. Internal growth is significant in determining long-run  
2 earnings and, therefore, dividends. Investors recognize the importance of internally  
3 generated growth and pay premiums for stocks of companies that retain earnings and  
4 earn high returns on internal investments.

5  
6 **Q. PLEASE DISCUSS THE SERVICES THAT PROVIDE ANALYSTS' EPS**  
7 **FORECASTS.**

8 A. Analysts' EPS forecasts for companies are collected and published by a number  
9 of different investment information services, including Institutional Brokers Estimate  
10 System ("I/B/E/S"), Bloomberg, FactSet, Zacks, First Call and Reuters, among others.  
11 Thompson Reuters publishes analysts' EPS forecasts under different product names,  
12 including I/B/E/S, First Call, and Reuters. Bloomberg, FactSet, and Zacks each publish  
13 their own set of analysts' EPS forecasts for companies. These services do not reveal (1)  
14 the analysts who are solicited for forecasts or (2) the identity of the analysts who actually  
15 provide the EPS forecasts that are used in the compilations published by the services.  
16 I/B/E/S, Bloomberg, FactSet, and First Call are fee-based services. These services usually  
17 provide detailed reports and other data in addition to analysts' EPS forecasts. In contrast,  
18 Thompson Reuters and Zacks do provide limited EPS forecast data free-of-charge on the  
19 Internet. Yahoo finance (<http://finance.yahoo.com>) lists Thompson Reuters as the source  
20 of its summary EPS forecasts. The Reuters website ([www.reuters.com](http://www.reuters.com)) also publishes  
21 EPS forecasts from Thompson Reuters, but with more detail. Zacks ([www.zacks.com](http://www.zacks.com))  
22 publishes its summary forecasts on its website. Zacks estimates are also available on other  
23 websites, such as msn.money (<http://money.msn.com>).



1 **Q. PLEASE PROVIDE AN EXAMPLE OF THESE EPS FORECASTS.**

2 A. The following example provides the EPS forecasts compiled by Reuters for  
3 Alliant Energy Corp. (stock symbol “LNT”). The figures are provided on page 2 of  
4 Exhibit JRW-9. Line one shows that one analyst has provided EPS estimates for the  
5 quarter ending December 31, 2016. The mean, high and low estimates are \$0.28, \$0.31,  
6 and \$0.24, respectively. The second line shows the quarterly EPS estimates for the  
7 quarter ending March 31, 2017 of \$0.44 (mean), \$0.45 (high), and \$0.42 (low). Line  
8 three shows the annual EPS estimates for the fiscal year ending December 2016 (\$1.88  
9 (mean), \$1.90 (high), and \$1.84 (low). Line four shows the annual EPS estimates for  
10 the fiscal year ending December 2017 (\$1.99 (mean), \$2.01 (high), and \$1.95 (low).  
11 The quarterly and annual EPS forecasts in lines 1-4 are expressed in dollars and cents.  
12 As in the LNT case shown here, it is common for more analysts to provide estimates  
13 of annual EPS as opposed to quarterly EPS. The bottom line shows the projected long-  
14 term EPS growth rate, which is expressed as a percentage. For LNT, one analyst has  
15 provided a long-term EPS growth rate forecast, with mean, high, and low growth rates  
16 of 6.0%, 6.0%, and 6.00%.

17

18 **Q. WHICH OF THESE EPS FORECASTS IS USED IN DEVELOPING A DCF**  
19 **GROWTH RATE?**

20 A. The DCF growth rate is the long-term projected growth rate in EPS, DPS, and  
21 BVPS. Therefore, in developing an equity cost rate using the DCF model, the projected  
22 long-term growth rate is the projection used in the DCF model.

23

1 **Q. WHY DO YOU NOT RELY EXCLUSIVELY ON THE EPS FORECASTS OF**  
2 **WALL STREET ANALYSTS IN ARRIVING AT A DCF GROWTH RATE FOR**  
3 **THE PROXY GROUP?**

4 A. There are several issues with using the EPS growth rate forecasts of Wall Street  
5 analysts as DCF growth rates. First, the appropriate growth rate in the DCF model is  
6 the dividend growth rate, not the earnings growth rate. Nonetheless, over the very long  
7 term, dividend and earnings will have to grow at a similar growth rate. Therefore,  
8 consideration must be given to other indicators of growth, including prospective  
9 dividend growth, internal growth, as well as projected earnings growth. Second, a  
10 recent study by Lacina, Lee, and Xu (2011) has shown that analysts' long-term earnings  
11 growth rate forecasts are not more accurate at forecasting future earnings than naïve  
12 random walk forecasts of future earnings.<sup>27</sup> Employing data over a twenty-year period,  
13 these authors demonstrate that using the most recent year's EPS figure to forecast EPS  
14 in the next 3-5 years proved to be just as accurate as using the EPS estimates from  
15 analysts' long-term earnings growth rate forecasts. In the authors' opinion, these  
16 results indicate that analysts' long-term earnings growth rate forecasts should be used  
17 with caution as inputs for valuation and cost of capital purposes. Finally, and most  
18 significantly, it is well known that the long-term EPS growth rate forecasts of Wall  
19 Street securities analysts are overly optimistic and upwardly biased. This has been  
20 demonstrated in a number of academic studies over the years.<sup>28</sup> Hence, using these

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<sup>27</sup> M. Lacina, B. Lee & Z. Xu, *Advances in Business and Management Forecasting (Vol. 8)*, Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101.

<sup>28</sup> The studies that demonstrate analysts' long-term EPS forecasts are overly-optimistic and upwardly biased include: R.D. Harris, "The Accuracy, Bias, and Efficiency of Analysts' Long Run Earnings Growth Forecasts,"

1 growth rates as a DCF growth rate will provide an overstated equity cost rate. On this  
2 issue, a study by Easton and Sommers (2007) found that optimism in analysts' growth  
3 rate forecasts leads to an upward bias in estimates of the cost of equity capital of almost  
4 3.0 percentage points.<sup>29</sup>

5  
6 **Q. IS IT YOUR OPINION THAT STOCK PRICES REFLECT THE UPWARD BIAS**  
7 **IN THE EPS GROWTH RATE FORECASTS?**

8 A. Yes, I do believe that investors are well aware of the bias in analysts' EPS  
9 growth rate forecasts, and therefore stock prices reflect the upward bias.

10

11 **Q. HOW DOES THAT AFFECT THE USE OF THESE FORECASTS IN A DCF**  
12 **EQUITY COST RATE STUDY?**

13 A. According to the DCF model, the equity cost rate is a function of the dividend  
14 yield and expected growth rate. Because stock prices reflect the bias, it would affect the  
15 dividend yield. In addition, the DCF growth rate needs to be adjusted downward from the  
16 projected EPS growth rate to reflect the upward bias.

---

*Journal of Business Finance & Accounting*, pp. 725-55 (June/July 1999); P. DeChow, A. Hutton, and R. Sloan, "The Relation Between Analysts' Forecasts of Long-Term Earnings Growth and Stock Price Performance Following Equity Offerings," *Contemporary Accounting Research* (2000); K. Chan, L., Karceski, J., & Lakonishok, J., "The Level and Persistence of Growth Rates," *Journal of Finance* pp. 643-684, (2003); M. Lacina, B. Lee and Z. Xu, *Advances in Business and Management Forecasting (Vol. 8)*, Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101; and Marc H. Goedhart, Rishi Raj, and Abhishek Saxena, "Equity Analysts, Still Too Bullish," *McKinsey on Finance*, pp. 14-17, (Spring 2010).

<sup>29</sup> Peter D. Easton & Gregory A. Sommers, *Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts*, 45 J. ACCT. RES. 983-1015 (2007).

1 **Q. PLEASE DISCUSS THE HISTORICAL GROWTH OF THE COMPANIES IN**  
2 **THE PROXY GROUPS, AS PROVIDED BY *VALUE LINE*.**

3 A. Page 3 of Exhibit JRW-10 provides the 5- and 10- year historical growth rates  
4 for EPS, DPS, and BVPS for the companies in the two proxy groups, as published in  
5 the *Value Line Investment Survey*. The median historical growth measures for EPS,  
6 DPS, and BVPS for the Electric Proxy Group, as provided in Panel A, range from 3.5%  
7 to 5.5%, with an average of the medians of 4.2%. For the Vander Weide Proxy Group,  
8 as shown in Panel B of page 3 of Exhibit JRW-10, the historical growth measures in  
9 EPS, DPS, and BVPS, as measured by the medians, range from 4.0% to 5.0%, with an  
10 average of the medians of 4.2%.

11  
12 **Q. PLEASE SUMMARIZE *VALUE LINE*'S PROJECTED GROWTH RATES FOR**  
13 **THE COMPANIES IN THE PROXY GROUPS.**

14 A. *Value Line*'s projections of EPS, DPS, and BVPS growth for the companies in  
15 the proxy groups are shown on page 4 of Exhibit JRW-10. As stated above, due to the  
16 presence of outliers, the medians are used in the analysis. For the Electric Proxy Group,  
17 as shown in Panel A of page 4 of Exhibit JRW-10, the medians range from 4.0% to  
18 5.5%, with an average of the medians of 4.9%. The range of the medians for the Vander  
19 Weide Proxy Group, shown in Panel B of page 4 of Exhibit JRW-10, is from 4.0 % to  
20 6.0%, with an average of the medians of 5.2%.

21 Also provided on page 4 of Exhibit JRW-10 are the prospective sustainable  
22 growth rates for the companies in the two proxy groups as measured by *Value Line*'s  
23 average projected retention rate and return on shareholders' equity. As noted above,

1 sustainable growth is a significant and a primary driver of long-run earnings growth.  
2 For the Electric and Vander Weide Proxy Groups, the median prospective sustainable  
3 growth rates are 3.7% and 4.2%, respectively.  
4

5 **Q. PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BY**  
6 **ANALYSTS' FORECASTS OF EXPECTED 5-YEAR EPS GROWTH.**

7 A. Yahoo, Zacks, and Reuters collect, summarize, and publish Wall Street analysts'  
8 long-term EPS growth rate forecasts for the companies in the proxy groups. These  
9 forecasts are provided for the companies in the proxy groups on page 5 of Exhibit JRW-  
10 10. I have reported both the mean and median growth rates for the groups. Since there  
11 is considerable overlap in analyst coverage between the three services, and not all of the  
12 companies have forecasts from the different services, I have averaged the expected five-  
13 year EPS growth rates from the three services for each company to arrive at an expected  
14 EPS growth rate for each company. The mean/median of analysts' projected EPS  
15 growth rates for the Electric and Vander Weide Proxy Groups are 4.4%/5.4% and  
16 5.4%/5.7%, respectively.<sup>30</sup>  
17

18 **Q. PLEASE SUMMARIZE YOUR ANALYSIS OF THE HISTORICAL AND**  
19 **PROSPECTIVE GROWTH OF THE PROXY GROUPS.**

20 A. Page 6 of Exhibit JRW-10 shows the summary DCF growth rate indicators for  
21 the proxy groups.

---

<sup>30</sup> Given variation in the measures of central tendency of analysts' projected EPS growth rates proxy groups, I have considered both the means and medians figures in the growth rate analysis.

1           The historical growth rate indicators for my Electric Proxy Group imply a  
2 baseline growth rate of 4.2%. The average of the projected EPS, DPS, and BVPS  
3 growth rates from *Value Line* is 4.9%, and *Value Line*'s projected sustainable growth  
4 rate is 3.7%. The projected EPS growth rates of Wall Street analysts for the Electric  
5 Proxy Group are 4.4% and 5.4% as measured by the mean and median growth rates.  
6 The overall range for the projected growth rate indicators (ignoring historical growth)  
7 is 3.7% to 5.4%. Giving primary weight to the projected EPS growth rate of Wall  
8 Street analysts, I believe that the appropriate projected growth rate is 5.0%. This  
9 growth rate figure is clearly in the upper end of the range of historic and projected  
10 growth rates for the Electric Proxy Group.

11           For the Vander Weide Proxy Group, the historical growth rate indicators  
12 indicate a growth rate of 4.2%. The average of the projected EPS, DPS, and BVPS  
13 growth rates from *Value Line* is 5.2%, and *Value Line*'s projected sustainable growth  
14 rate is 4.2%. The projected EPS growth rates of Wall Street analysts are 5.4% and  
15 5.7% as measured by the mean and median growth rates. The overall range for the  
16 projected growth rate indicators is 4.2% to 5.6%. Giving primary weight to the  
17 projected EPS growth rate of Wall Street analysts, I believe that the appropriate  
18 projected growth rate range is 5.50%. This growth rate figure is clearly in the upper  
19 end of the range of historic and projected growth rates for the Vander Weide Proxy  
20 Group.

1 **Q. BASED ON THE ABOVE ANALYSIS, WHAT ARE YOUR INDICATED**  
2 **COMMON EQUITY COST RATES FROM THE DCF MODEL FOR THE**  
3 **PROXY GROUPS?**

4 A. My DCF-derived equity cost rates for the groups are summarized on page 1 of  
5 Exhibit JRW-10 and in Table 1 below.

6 **Table 1**  
7 **DCF-derived Equity Cost Rate/ROE**

	<b>Dividend Yield</b>	<b>1 + ½ Growth Adjustment</b>	<b>DCF Growth Rate</b>	<b>Equity Cost Rate</b>
<b>Electric Proxy Group</b>	<b>3.40%</b>	<b>1.02500</b>	<b>5.00%</b>	<b>8.50%</b>
<b>Vander Weide Proxy Group</b>	<b>3.40%</b>	<b>1.02750</b>	<b>5.50%</b>	<b>9.00%</b>

8

9 The result for the Electric Proxy Group is the 3.40% dividend yield, times the  
10 one and one-half growth adjustment of 1.025, plus the DCF growth rate of 5.0%, which  
11 results in an equity cost rate of 8.50%. The result for the Vander Weide Proxy Group  
12 is 9.00%, which includes a dividend yield of 3.40%, an adjustment factor of 1.02750,  
13 and a DCF growth rate of 5.50%.

14

15 **C. Capital Asset Pricing Model**

16

17 **Q. PLEASE DISCUSS THE CAPITAL ASSET PRICING MODEL (“CAPM”).**

18 A. The CAPM is a risk premium approach to gauging a firm’s cost of equity  
19 capital. According to the risk premium approach, the cost of equity is the sum of the  
20 interest rate on a risk-free bond ( $R_f$ ) and a risk premium (RP), as in the following:

21

$$k = R_f + RP$$

22





1 **Q. PLEASE DISCUSS EXHIBIT JRW-11.**

2 A. Exhibit JRW-11 provides the summary results for my CAPM study. Page 1  
3 shows the results, and the following pages contain the supporting data.

4

5 **Q. PLEASE DISCUSS THE RISK-FREE INTEREST RATE.**

6 A. The yield on long-term U.S. Treasury bonds has usually been viewed as the  
7 risk-free rate of interest in the CAPM. The yield on long-term U.S. Treasury bonds, in  
8 turn, has been considered to be the yield on U.S. Treasury bonds with 30-year  
9 maturities.

10

11 **Q. WHAT RISK-FREE INTEREST RATE ARE YOU USING IN YOUR CAPM?**

12 A. As shown on page 2 of Exhibit JRW-11, the yield on 30-year U.S. Treasury  
13 bonds has been in the 2.5% to 4.0% range over the 2013–2016 time period. The 30-  
14 year Treasury yield is in the middle of this range. Given the recent range of yields and  
15 the possibility of higher interest rates, I use higher end 4.0% as the risk-free rate, or  $R_f$ ,  
16 in my CAPM.

17

18 **Q. DOES YOUR 4.0% RISK-FREE INTEREST RATE TAKE INTO**  
19 **CONSIDERATION FORECASTS OF HIGHER INTEREST RATES?**

20 A. No, it does not. As I stated before, forecasts of higher interest rates have been  
21 notoriously wrong for a decade. My 4.0% risk-free interest rate takes into account the  
22 range of interest rates in the past and effectively synchronizes the risk-free rate with the  
23 market risk premium (“MRP”). The risk-free rate and the MRP are interrelated in that

1 the MRP is developed in relation to the risk-free rate. As discussed below, my MRP is  
2 based on the results of many studies and surveys that have been published over time.  
3 Therefore, my risk-free interest rate of 4.0% is effectively a normalized risk-free rate of  
4 interest.

5  
6 **Q. WHAT BETAS ARE YOU EMPLOYING IN YOUR CAPM?**

7 A. Beta ( $\beta$ ) is a measure of the systematic risk of a stock. The market, usually  
8 taken to be the S&P 500, has a beta of 1.0. The beta of a stock with the same price  
9 movement as the market also has a beta of 1.0. A stock whose price movement is  
10 greater than that of the market, such as a technology stock, is riskier than the market  
11 and has a beta greater than 1.0. A stock with below average price movement, such as  
12 that of a regulated public utility, is less risky than the market and has a beta less than  
13 1.0. Estimating a stock's beta involves running a linear regression of a stock's return  
14 on the market return.

15 As shown on page 3 of Exhibit JRW-11, the slope of the regression line is the  
16 stock's  $\beta$ . A steeper line indicates that the stock is more sensitive to the return on the  
17 overall market. This means that the stock has a higher  $\beta$  and greater-than-average  
18 market risk. A less steep line indicates a lower  $\beta$  and less market risk.

19 Several online investment information services, such as Yahoo and Reuters,  
20 provide estimates of stock betas. Usually these services report different betas for the  
21 same stock. The differences are usually due to: (1) the time period over which  $\beta$  is  
22 measured; and (2) any adjustments that are made to reflect the fact that betas tend to  
23 regress to 1.0 over time. In estimating an equity cost rate for the proxy groups, I am

1 using the betas for the companies as provided in the *Value Line Investment Survey*. As  
2 shown on page 3 of Exhibit JRW-11, the median betas for the companies in the Electric  
3 and Vander Weide Proxy Groups are 0.70 and 0.70, respectively.

4

5 **Q. PLEASE DISCUSS THE MARKET RISK PREMIUM.**

6 A. The MRP is equal to the expected return on the stock market (e.g., the expected  
7 return on the S&P 500,  $E(R_m)$  minus the risk-free rate of interest ( $R_f$ )). The MRP is the  
8 difference in the expected total return between investing in equities and investing in  
9 “safe” fixed-income assets, such as long-term government bonds. However, while the  
10 MRP is easy to define conceptually, it is difficult to measure because it requires an  
11 estimate of the expected return on the market -  $E(R_m)$ . As is discussed below, there are  
12 different ways to measure  $E(R_m)$ , and studies have come up with significantly different  
13 magnitudes for  $E(R_m)$ . As Merton Miller, the 1990 Nobel Prize winner in economics  
14 indicated,  $E(R_m)$  is very difficult to measure and is one of the great mysteries in  
15 finance.<sup>31</sup>

16 **Q. PLEASE DISCUSS THE ALTERNATIVE APPROACHES TO ESTIMATING**  
17 **THE MRP.**

18 A. Page 4 of Exhibit JRW-11 highlights the primary approaches to, and issues in,  
19 estimating the expected MRP. The traditional way to measure the MRP was to use the  
20 difference between historical average stock and bond returns. In this case, historical

---

<sup>31</sup> Merton Miller, “The History of Finance: An Eyewitness Account,” *Journal of Applied Corporate Finance*, 2000, P. 3.

1 stock and bond returns, also called *ex post* returns, were used as the measures of the  
2 market's expected return (known as the *ex-ante* or forward-looking expected return).  
3 This type of historical evaluation of stock and bond returns is often called the "Ibbotson  
4 approach" after Professor Roger Ibbotson, who popularized this method of using  
5 historical financial market returns as measures of expected returns. Most historical  
6 assessments of the equity risk premium suggest an equity risk premium range of 5% to  
7 7% above the rate on long-term U.S. Treasury bonds. However, this can be a problem  
8 because: (1) *ex post* returns are not the same as *ex ante* expectations; (2) market risk  
9 premiums can change over time, increasing when investors become more risk-averse  
10 and decreasing when investors become less risk-averse; and (3) market conditions can  
11 change such that *ex post* historical returns are poor estimates of *ex ante* expectations.

12 The use of historical returns as market expectations has been criticized in  
13 numerous academic studies as discussed later in my testimony. The general theme of  
14 these studies is that the large equity risk premium discovered in historical stock and  
15 bond returns cannot be justified by the fundamental data. These studies, which fall  
16 under the category "*Ex Ante* Models and Market Data," compute *ex ante* expected  
17 returns using market data to arrive at an expected equity risk premium. These studies  
18 have also been called "Puzzle Research" after the famous study by Mehra and Prescott  
19 in which the authors first questioned the magnitude of historical equity risk premiums  
20 relative to fundamentals.<sup>32</sup>

---

<sup>32</sup> Rajnish Mehra & Edward C. Prescott, "The Equity Premium: A Puzzle," *Journal of Monetary Economics*, 145 (1985).

1           In addition, there are a number of surveys of financial professionals regarding  
2           the MRP. There have also been several published surveys of academics on the equity  
3           risk premium. *CFO Magazine* conducts a quarterly survey of CFOs, which includes  
4           questions regarding their views on the current expected returns on stocks and bonds.  
5           Usually, over 500 CFOs participate in the survey.<sup>33</sup> Questions regarding expected  
6           stock and bond returns are also included in the Federal Reserve Bank of Philadelphia’s  
7           annual survey of financial forecasters, which is published as the *Survey of Professional*  
8           *Forecasters*.<sup>34</sup> This survey of professional economists has been published for almost  
9           fifty years. In addition, Pablo Fernandez conducts annual surveys of financial analysts  
10          and companies regarding the equity risk premiums they use in their investment and  
11          financial decision-making.<sup>35</sup>

13   **Q.   PLEASE PROVIDE A SUMMARY OF THE MRP STUDIES.**

14   A.          Derrig and Orr (2003), Fernandez (2007), and Song (2007) have completed the  
15          most comprehensive reviews to date of the research on the MRP.<sup>36</sup> Derrig and Orr’s  
16          study evaluated the various approaches to estimating MRPs, as well as the issues with  
17          the alternative approaches and summarized the findings of the published research on

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<sup>33</sup>See DUKE/CFO Magazine Global Business Outlook Survey, [www.cfosurvey.org](http://www.cfosurvey.org), December, 2016.

<sup>34</sup> Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters (Feb, 2016)*. The Survey of Professional Forecasters was formerly conducted by the American Statistical Association (“ASA”) and the National Bureau of Economic Research (“NBER”) and was known as the ASA/NBER survey. The survey, which began in 1968, is conducted each quarter. The Federal Reserve Bank of Philadelphia, in cooperation with the NBER, assumed responsibility for the survey in June 1990.

<sup>35</sup> Pablo Fernandez, Alberto Ortiz and Isabel Fernandez Acín, “Market Risk Premium used in 71 countries in 2016: a survey with 6,932 answers: survey,” May 9, 2016.

<sup>36</sup> See Richard Derrig & Elisha Orr, “Equity Risk Premium: Expectations Great and Small,” Working Paper (version 3.0), Automobile Insurers Bureau of Massachusetts, (August 28, 2003); Pablo Fernandez, “Equity Premium: Historical, Expected, Required, and Implied,” IESE Business School Working Paper, (2007); Zhiyi Song, “The Equity Risk Premium: An Annotated Bibliography,” CFA Institute, (2007).

1 the MRP. Fernandez examined four alternative measures of the MRP – historical,  
2 expected, required, and implied. He also reviewed the major studies of the MRP and  
3 presented the summary MRP results. Song provides an annotated bibliography and  
4 highlights the alternative approaches to estimating the MRP.

5 Page 5 of Exhibit JRW-11 provides a summary of the results of the primary  
6 risk premium studies reviewed by Derrig and Orr, Fernandez, and Song, as well as  
7 other more recent studies of the MRP. In developing page 5 of Exhibit JRW-11, I have  
8 categorized the studies as discussed on page 4 of Exhibit JRW-11. I have also included  
9 the results of studies of the “Building Blocks” approach to estimating the equity risk  
10 premium. The Building Blocks approach is a hybrid approach employing elements of  
11 both historical and *ex ante* models.

12

13 **Q. PLEASE DISCUSS PAGE 5 OF EXHIBIT JRW-11.**

14 A. Page 5 of Exhibit JRW-11 provides a summary of the results of the MRP studies  
15 that I have reviewed. These include the results of: (1) the various studies of the  
16 historical risk premium, (2) *ex ante* MRP studies, (3) MRP surveys of CFOs, financial  
17 forecasters, analysts, companies and academics, and (4) the Building Blocks approach  
18 to the MRP. There are results reported for over forty studies, and the median MRP is  
19 4.63%.

20

21 **Q. PLEASE HIGHLIGHT THE RESULTS OF THE MORE RECENT RISK**  
22 **PREMIUM STUDIES AND SURVEYS.**

1 A. The studies cited on page 5 of Exhibit JRW-11 include every MRP study and  
2 survey I could identify that was published over the past decade and that provided an  
3 MRP estimate. Most of these studies were published prior to the financial crisis that  
4 began in 2008. In addition, some of these studies were published in the early 2000s at  
5 the market peak. It should be noted that many of these studies (as indicated) used data  
6 over long periods of time (as long as fifty years of data) and so were not estimating an  
7 MRP as of a specific point in time (e.g., the year 2001). To assess the effect of the  
8 earlier studies on the MRP, I have reconstructed page 5 of Exhibit JRW-11 on page 6  
9 of Exhibit JRW-11; however, I have eliminated all studies dated before January 2,  
10 2010. The median for this subset of studies is 4.95%.

11

12 **Q. GIVEN THESE RESULTS, WHAT MRP ARE YOU USING IN YOUR CAPM?**

13 A. Much of the data indicates that the market risk premium is in the 4.0% to 6.0%  
14 range. Several recent studies (such as Damodaran, American Appraisers, Duarte and  
15 Rosa, Duff & Phelps, and the CFO Survey have suggested an increase in the market  
16 risk premium. Therefore, I will use 5.5%, which is in the upper end of the range, as  
17 the market risk premium or MRP.

18

19 **Q. IS YOUR *EX ANTE* MRP CONSISTENT WITH THE MRPs USED BY CFOs?**

20 A. Yes. In the December 2016 CFO survey conducted by *CFO Magazine* and  
21 Duke University, which included approximately 300 responses, the expected 10-year  
22 MRP was 3.47%.<sup>37</sup>

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<sup>37</sup> *Id.* p. 36.

1 **Q. IS YOUR *EX ANTE* MRP CONSISTENT WITH THE MRPs OF**  
2 **PROFESSIONAL FORECASTERS?**

3 A. The financial forecasters in the previously referenced Federal Reserve Bank of  
4 Philadelphia survey projected both stock and bond returns. In the February 2016  
5 survey, the median long-term expected stock and bond returns were 5.34% and 3.44%,  
6 respectively. This provides an expected MRP of 1.90% (5.34%-3.44%).

7  
8 **Q. IS YOUR *EX ANTE* MRP CONSISTENT WITH THE MRPs OF FINANCIAL**  
9 **ANALYSTS AND COMPANIES?**

10 A. Yes. Pablo Fernandez published the results of his 2016 survey of academics,  
11 financial analysts, and companies.<sup>38</sup> This survey included over 4,000 responses. The  
12 median MRP employed by U.S. analysts and companies was 5.3%.

13  
14 **Q. IS YOUR *EX ANTE* MRP CONSISTENT WITH THE MRPs OF FINANCIAL**  
15 **ADVISORS?**

16 A. Yes. Duff & Phelps is a well-known valuation and corporate finance advisor  
17 that publishes extensively on the cost of capital. As of 2016, Duff & Phelps  
18 recommended using a 5.5% MRP for the U.S.<sup>39</sup>

19  
20 **Q. WHAT EQUITY COST RATE IS INDICATED BY YOUR CAPM ANALYSIS?**

---

<sup>38</sup> *Ibid.* p. 3.

<sup>39</sup> See <http://www.duffandphelps.com/insights/publications/cost-of-capital/index>.



1 A. The results of my CAPM study for the proxy groups are summarized on page 1  
 2 of Exhibit JRW-11 and in Table 2 below.

3 **Table 2**  
 4 **CAPM-derived Equity Cost Rate/ROE**  
 5  $K = (R_f) + \beta * [E(R_m) - (R_f)]$

	<b>Risk-Free Rate</b>	<b>Beta</b>	<b>Equity Risk Premium</b>	<b>Equity Cost Rate</b>
<b>Electric Proxy Group</b>	<b>4.0%</b>	<b>0.70</b>	<b>5.5%</b>	<b>7.9%</b>
<b>Vander Weide Proxy Group</b>	<b>4.0%</b>	<b>0.70</b>	<b>5.5%</b>	<b>7.9%</b>

6  
 7 For the Electric Proxy Group, the risk-free rate of 4.0% plus the product of the beta of  
 8 0.70 times the equity risk premium of 5.5% results in a 7.9% equity cost rate. For the  
 9 Vander Weide Proxy Group, the risk-free rate of 4.0% plus the product of the beta of  
 10 0.70 times the equity risk premium of 5.5% results in a 7.9% equity cost rate.

11  
 12 **D. Equity Cost Rate Summary**

13  
 14 **Q. PLEASE SUMMARIZE THE RESULTS OF YOUR EQUITY COST RATE**  
 15 **STUDIES.**

16 A. My DCF analyses for the Electric and Vander Weide Proxy Groups indicate  
 17 equity cost rates of 8.50% and 9.00%, respectively. The CAPM equity cost rates for  
 18 the Electric and Vander Weide Proxy Groups are 7.9% and 7.9%.

19 **Table 3**  
 20 **ROEs Derived from DCF and CAPM Models**

	<b>DCF</b>	<b>CAPM</b>
<b>Electric Proxy Group</b>	<b>8.50%</b>	<b>7.90%</b>
<b>Vander Weide Proxy Group</b>	<b>9.00%</b>	<b>7.90%</b>

1 **Q. GIVEN THESE RESULTS, WHAT IS YOUR ESTIMATED EQUITY COST**  
2 **RATE FOR THE GROUPS?**

3 A. Given these results, I conclude that the appropriate equity cost rate for  
4 companies in the Electric and Vander Weide Proxy Groups is in the 7.90% to 9.00%  
5 range. Because I give primary weight to the DCF results, I believe that the appropriate  
6 equity cost rate range is 8.75% to 9.00%. Given the recent increase in interest rates, I  
7 will use the midpoint of this range, 8.875%, as the equity cost rate of for Gulf Power.

8 **Q. PLEASE INDICATE WHY AN EQUITY COST RATE OF 8.875% IS**  
9 **APPROPRIATE FOR THE ELECTRIC OPERATIONS OF GULF POWER.**

10 A. There are a number of reasons why an equity cost rate of 8.875% is appropriate and  
11 fair for the Company in this case:

12 1. I have employed a capital structure that has a higher common equity ratio  
13 and therefore slightly lower financial risk than the capital structures of the two proxy  
14 groups.

15 2. As shown in Exhibits JRW-2 and JRW-3, capital costs for utilities, as  
16 indicated by long-term bond yields, are still at low levels. In addition, given low  
17 inflationary expectations and slow global economic growth, interest rates are likely to  
18 remain at low levels for some time.

19 3. As shown in Exhibit JRW-8, the electric utility industry is among the lowest  
20 risk industries in the U.S. as measured by beta. As such, the cost of equity capital for  
21 this industry is among the lowest in the U.S., according to the CAPM.

1                   4. The investment risk of Gulf Power, as indicated by the Company’s S&P and  
2 Moody’s issuer credit ratings of A- and A2, is below the investment risk of the two  
3 proxy groups, with average S&P and Moody’s ratings of BBB+ and Baa1.

4                   5. These authorized ROEs for electric utilities have declined from 10.01% in  
5 2012, to 9.8% in 2013, to 9.76% in 2014, 9.58% in 2015, and 9.64% in the first three  
6 quarters of 2016, according to Regulatory Research Associates.<sup>40</sup> In my opinion, these  
7 authorized ROEs have lagged behind capital market cost rates, or in other words,  
8 authorized ROEs have been slow to reflect low capital market cost rates. This has been  
9 especially true in recent years as some state commissions have been reluctant to  
10 authorize ROEs below 10%. However, the trend has been towards lower ROEs, and  
11 the norm now is below ten percent. Hence, I believe that my recommended ROE  
12 reflects the low capital cost rates in today’s markets, and these low capital cost rates  
13 are finally being recognized by state utility commissions.

14

15 **Q. PLEASE DISCUSS YOUR RECOMMENDATION IN LIGHT OF A RECENT**  
16 **MOODY’S PUBLICATION.**

17 A.               Moody’s published an article on utility ROEs and credit quality. In the article,  
18 Moody’s recognizes that authorized ROEs for electric and gas companies are declining  
19 due to lower interest rates. The article explains:

20                   The credit profiles of US regulated utilities will remain intact over  
21 the next few years despite our expectation that regulators will  
22 continue to trim the sector’s profitability by lowering its authorized  
23 returns on equity (ROE). Persistently low interest rates and a  
24 comprehensive suite of cost recovery mechanisms ensure a low

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<sup>40</sup> *Regulatory Focus*, Regulatory Research Associates, January, 2016. The electric utility authorized ROEs exclude the authorized ROEs in Virginia, which include generation adders.

1 business risk profile for utilities, prompting regulators to scrutinize  
2 their profitability, which is defined as the ratio of net income to book  
3 equity. We view cash flow measures as a more important rating  
4 driver than authorized ROEs, and we note that regulators can lower  
5 authorized ROEs without hurting cash flow, for instance by targeting  
6 depreciation, or through special rate structures.<sup>41</sup>

7  
8 Moody's indicates that with the lower authorized ROEs, electric and gas  
9 companies are earning ROEs of 9.0% to 10.0%, yet this is not impairing their credit  
10 profiles and is not deterring them from raising record amounts of capital. With respect  
11 to authorized ROEs, Moody's recognizes that utilities and regulatory commissions are  
12 having trouble justifying higher ROEs in the face of lower interest rates and cost  
13 recovery mechanisms.

14 Robust cost recovery mechanisms will help ensure that US regulated  
15 utilities' credit quality remains intact over the next few years. As a  
16 result, falling authorized ROEs are not a material credit driver at this  
17 time, but rather reflect regulators' struggle to justify the cost of capital  
18 gap between the industry's authorized ROEs and persistently low  
19 interest rates. We also see utilities struggling to defend this gap, while  
20 at the same time recovering the vast majority of their costs and  
21 investments through a variety of rate mechanisms.<sup>42</sup>

22  
23 Overall, this article further supports the prevailing/emerging belief that lower  
24 authorized ROEs are unlikely to hurt the financial integrity of utilities or their ability  
25 to attract capital.

---

<sup>41</sup> Moody's Investors Service, "Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles," March 10, 2015.

<sup>42</sup> Moody's Investors Service, "Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles," March 10, 2015.

1 Q. DO YOU BELIEVE THAT YOUR 8.875% ROE RECOMMENDATION  
2 MEETS THE *HOPE* AND *BLUEFIELD* STANDARDS?

3 A. Yes, I do. As previously noted, according to the *Hope* and *Bluefield* decisions,  
4 returns on capital should be: (1) comparable to returns investors expect to earn on other  
5 investments of similar risk; (2) sufficient to assure confidence in the company's  
6 financial integrity; and (3) adequate to maintain and support the company's credit and  
7 to attract capital. Gulf Power's S&P and Moody's issuer credit ratings of A- and A2  
8 are above the average of the Electric and Vander Weide Proxy Groups of BBB+ and  
9 Baa1. This indicates that Gulf Power's investment risk is below that of the two proxy  
10 groups. And while my recommendation is below the average authorized ROEs for  
11 electric utility companies, it reflects the downward trend in authorized and earned  
12 ROEs of electric utility companies. As is highlighted in the Moody's publication cited  
13 above that states, despite authorized and earned ROEs below 10%, the credit quality of  
14 electric and gas companies has not been impaired but, in fact, has improved and utilities  
15 are raising about \$50 billion per year in capital. Major positive factors in the improved  
16 credit quality of utilities are regulatory ratemaking mechanisms. Therefore, I do  
17 believe that my ROE recommendation meets the criteria established in the *Hope* and  
18 *Bluefield* decisions.

19

20 VII. CRITIQUE OF GULF POWER'S RATE OF RETURN TESTIMONY

21

22 Q. PLEASE SUMMARIZE THE COMPANY'S RATE OF RETURN  
23 RECOMMENDATION.

1 A. The Company's rate of return recommendation from investor-provided capital is  
2 summarized on page 1 of Exhibit JRW-12.

3

4 **Q. PLEASE REVIEW DR. VANDER WEIDE'S EQUITY COST RATE**  
5 **APPROACHES AND RESULTS.**

6 A. Dr. Vander Weide has developed a proxy group of electric utility companies and employs  
7 DCF, CAPM, and RP equity cost rate approaches. Dr. Vander Weide's equity cost rate  
8 estimates for the Company are summarized on page 1 of Exhibit JRW-13. The average  
9 of his equity cost rate approaches is 10.4%. He then adds another 0.60% as a leverage  
10 adjustment to arrive at a ROE recommendation for Gulf Power of 11.0%. As I discuss  
11 below, there are a number of issues with the inputs, applications, and results of his  
12 equity cost rate models.

13

14 **Q. WHAT ISSUES DO YOU HAVE WITH THE COMPANY'S COST OF CAPITAL**  
15 **POSITION?**

16 A. The most significant areas of disagreement in measuring the Company's cost  
17 of capital are:

18 (1) The Company's proposed capital structure, which includes a higher common equity  
19 ratio and therefore lower financial risk than other electric utilities. This issue was  
20 previously addressed.

21 (2) Dr. Vander Weide's analyses and ROE results and recommendations are based on  
22 the assumption of higher interest rates and capital costs. I review current market

1 conditions and conclude that interest rates and capital costs are at low levels and are  
2 likely to remain low for some time.

3 (3) Dr. Vander Weide's DCF equity cost rate estimates, and in particular, (a) his  
4 adjustments for the quarterly payment of dividends and flotation costs; and; (b) his  
5 exclusive reliance on the overly optimistic and upwardly biased EPS growth rate  
6 forecasts of Wall Street analysts and *Value Line*.

7 (4) The projected interest rates and market or equity risk premiums in Dr. Vander  
8 Weide's CAPM and RP approaches are inflated and are not reflective of market  
9 realities or expectations.

10 (5) Dr. Vander Weide has made inappropriate flotation cost and leverage adjustments  
11 to his DCF, CAPM, and RP equity cost rates.

12

13 **A. The Company's DCF Approach**

14

15 **Q. PLEASE SUMMARIZE DR. VANDER WEIDE'S DCF ESTIMATES.**

16 A. On pages 23-33 of his testimony and in Schedules 1 and 2 of Exhibit No. (JVW-  
17 1), Dr. Vander Weide develops an equity cost rate by applying a DCF model to his groups  
18 of electric utility companies. In the traditional DCF approach, the equity cost rate is the  
19 sum of the dividend yield and expected growth. Dr. Vander Weide adjusts the spot  
20 dividend yield to reflect the quarterly payment of dividends. Dr. Vander Weide uses one  
21 measure of DCF expected growth - the projected EPS growth rate. He uses the EPS  
22 growth rate forecasts from Wall Street analysts as provided by I/B/E/S. He also includes  
23 a flotation cost adjustment of five percent. Dr. Vander Weide's DCF results are provided

1 in Panel B of Exhibit JRW-13. Based on these figures, Dr. Vander Weide claims that  
2 the DCF equity cost rate for groups is 9.7%, respectively.

3

4 **Q. WHAT ARE THE ERRORS IN DR. VANDER WEIDE'S DCF ANALYSES?**

5 A. There are three errors: (1) the quarterly dividend yield adjustment is excessive;  
6 (2) the projected DCF growth rate is based entirely on overly optimistic and upwardly-  
7 biased EPS growth rate estimates of Wall Street analysts; and (3) the flotation cost  
8 adjustment is inappropriate. These issues are discussed below.

9

10 1. DCF Dividend Yield Adjustment

11

12 **Q. PLEASE DISCUSS THE ADJUSTMENT TO THE DIVIDEND YIELD TO**  
13 **REFLECT THE QUARTERLY PAYMENT OF DIVIDENDS.**

14 A. Dr. Vander Weide uses DCF dividend yields of 3.64% for his electric utility  
15 group. In Appendix 2 of his testimony, Dr. Vander Weide discusses the adjustments he  
16 makes to his spot dividend yields to account for the quarterly payment of dividends. This  
17 includes an adjustment to reflect the time value of money. However, the quarterly timing  
18 adjustment is in error and results in an overstated equity cost rate. First, as discussed  
19 above, the appropriate dividend yield adjustment for growth in the DCF model is the  
20 expected dividend for the next quarter multiplied by four. Thus, Dr. Vander Weide's  
21 quarterly adjustment procedure is inconsistent with this approach.

22 Second, Dr. Vander Weide's approach presumes that investors require  
23 additional compensation during the coming year because their dividends are paid out



1           quarterly instead of being paid all in a lump sum. Therefore, he compounds each  
2           dividend to the end of the year using the long-term growth rate as the compounding  
3           factor. The error in this logic and approach is that the investor receives the money from  
4           each quarterly dividend and has the option to reinvest it as he or she chooses. This  
5           reinvestment generates its own compounding; however, it is outside of the dividend  
6           payments of the issuing company. Dr. Vander Weide's approach serves to duplicate  
7           this compounding process, thereby inflating the return to the investor. Finally, the  
8           notion that an adjustment is required to reflect the quarterly timing issue is refuted in  
9           a study by Richard Bower of Dartmouth College. Bower acknowledges the timing  
10          issue and downward bias addressed by Dr. Vander Weide. However, he demonstrates  
11          that this does not result in a biased required rate of return. He provides the following  
12          assessment:<sup>43</sup>

13                   ... authors are correct when they say that the conventional cost of equity  
14                   calculation is a downward-biased estimate of the market discount rate. They are  
15                   not correct, however, in concluding that it has a bias as a measure of required  
16                   return. As a measure of required return, the conventional cost of equity  
17                   calculation ( $K^*$ ), ignoring quarterly compounding and even without  
18                   adjustment for fractional periods, serves very well.  
19

20          Bower also makes the following observation on the issue:

21                   Too many rate cases have come and gone, and too many utilities have survived  
22                   and sustained market prices above book, to make downward bias in the  
23                   conventional calculation of required return a likely reality.

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<sup>43</sup> See Richard Bower, "The N-Stage Discount Model and Required Return: A Comment," *Financial Review* (February 1992), pp. 141-9.

2. DCF Growth Rate

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**Q. PLEASE REVIEW DR. VANDER WEIDE'S DCF GROWTH RATE.**

A. Dr. Vander Weide's DCF growth rate is the projected EPS growth rate forecasts of Wall Street analysts as compiled by I/B/E/S. Dr. Vander Weide employs an average DCF growth rate of 5.69% his group.

**Q. WHY IS IT ERRONEOUS TO RELY EXCLUSIVELY ON THE EPS FORECASTS OF WALL STREET ANALYSTS IN ARRIVING AT A DCF GROWTH RATE?**

A. There are several issues with using the EPS growth rate forecasts of Wall Street analysts and *Value Line* as DCF growth rates. First, the appropriate growth rate in the DCF model is the dividend growth rate, not the earnings growth rate. Therefore, in my opinion, consideration must be given to other indicators of growth, including prospective dividend growth, internal growth, as well as projected earnings growth. Second, and most significantly, it is well-known and recognized that the long-term EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. This has been demonstrated in a number of academic studies over the years as I discussed earlier in this testimony. Hence, using these growth rates as a DCF growth rate will provide an overstated equity cost rate.

1 **Q. PLEASE DISCUSS DR. VANDER WEIDE’S RELIANCE ON THE**  
2 **PROJECTED GROWTH RATES OF WALL STREET ANALYSTS AND**  
3 **VALUE LINE.**

4 A. It seems highly unlikely that investors today would rely excessively on the EPS  
5 growth rate forecasts of Wall Street analysts and ignore other growth rate measure in  
6 arriving at expected growth. As I previously indicated, the appropriate growth rate in  
7 the DCF model is the dividend growth rate, not the earnings growth rate. Hence,  
8 consideration must be given to other indicators of growth, including historic growth  
9 prospective dividend growth, internal growth, as well as projected earnings growth. In  
10 addition, a recent study by Lacina, Lee, and Xu (2011) has shown that analysts’ long-  
11 term earnings growth rate forecasts are not more accurate at forecasting future earnings  
12 than naïve random walk forecasts of future earnings.<sup>44</sup> As such, the weight given to  
13 analysts’ projected EPS growth rate should be limited. Finally, and most significantly,  
14 it is well-known that the long-term EPS growth rate forecasts of Wall Street securities  
15 analysts are overly optimistic and upwardly biased. Therefore, using these growth  
16 rates as a DCF growth rate produces an overstated equity cost rate. A recent study by  
17 Easton and Sommers (2007) found that optimism in analysts’ growth rate forecasts  
18 leads to an upward bias in estimates of the cost of equity capital of almost 3.0  
19 percentage points.<sup>45</sup> These issues were previously discussed herein.

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<sup>44</sup> M. Lacina, B. Lee and Z. Xu, *Advances in Business and Management Forecasting (Vol. 8)*, Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101.

<sup>45</sup> Easton, P., & Sommers, G. (2007). Effect of analysts’ optimism on estimates of the expected rate of return implied by earnings forecasts. *Journal of Accounting Research*, 45(5), 983–1015.

1 **Q. DR. VANDER WEIDE HAS DEFENDED THE USE OF ANALYSTS' EPS**  
2 **FORECASTS IN HIS DCF MODEL BY CITING A STUDY HE PUBLISHED**  
3 **WITH DR. WILLARD CARLETON. PLEASE DISCUSS DR. VANDER**  
4 **WEIDE'S STUDY.**

5 A. Dr. Vander Weide cites the study on pages 29-30 of his testimony. In the study,  
6 Dr. Vander Weide performs a linear regression of a company's stock price to earnings  
7 ratio (P/E) on the dividend yield payout ratio (D/E), alternative measures of growth (g),  
8 and four measures of risk (beta, covariance, r-squared, and the standard deviation of  
9 analysts' growth rate projections). He performed the study for three one-year periods  
10 – 1981, 1982, and 1983 – and used a sample of approximately sixty-five companies.  
11 His results indicated that regressions measuring growth as analysts' forecasted EPS  
12 growth were more statistically significant than those using various historic measures of  
13 growth. Consequently, he concluded that analysts' growth rates are superior measures  
14 of expected growth.

15  
16 **Q. PLEASE CRITIQUE DR. VANDER WEIDE'S STUDY.<sup>46</sup>**

17 A. Before highlighting the errors in the study, it is important to note that the study  
18 was published more than twenty-five years ago, used a sample of only sixty-five  
19 companies, and evaluated a three-year time period (1981-83) that was over thirty years  
20 ago. Since that time, many more exhaustive studies have been performed using  
21 significantly larger data bases and, from these studies, much has been learned about

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<sup>46</sup> On page 30 of his testimony, Dr. Vander Weide cites a 2003 updated version of the study. However, this study is not published in a refereed journal and the data and results cannot be verified. Nonetheless, the updated study contains the same methodological errors addressed here as the original study.

1 Wall Street analysts and their stock recommendations and earnings forecasts.  
2 Nonetheless, there are several errors that invalidate the results of Dr. Vander Weide's  
3 study.

4

5 **Q. PLEASE DESCRIBE THE ERRORS IN DR. VANDER WEIDE'S STUDY.**

6 A. The primary error in the study is that his regression model is misspecified. As  
7 a result, he cannot conclude whether one growth rate measure is better than the other.  
8 The misspecification results from the fact that Dr. Vander Weide did not actually  
9 employ a modified version of the DCF model. Instead, he used a "linear  
10 approximation." He used the approximation so that he did not have to measure  $k$ , the  
11 investors' required return, directly; instead, he used some proxy variables for risk. The  
12 error in this approach is there can be an interaction between growth ( $g$ ) and investors'  
13 required return ( $k$ ) which could lead him to conclude that one growth rate measure is  
14 superior to others. Furthermore, due to this problem, analysts' EPS forecasts could be  
15 upwardly biased and still appear to provide better measures of expected growth.

16 There are other errors in the study as well that further invalidate the results. Dr.  
17 Vander Weide does not use both historic and analysts' projections for growth rate  
18 measures in the same regression to assess if both historic data and forecasts should be  
19 used together to measure expected growth. In addition, he did not perform any tests to  
20 determine if the difference between historic and projected growth measures is  
21 statistically significant. Without such tests, he cannot make any valid conclusions  
22 about the superiority of one measure versus the other.

1 3. Flotation Cost Adjustment

2  
3 **Q. PLEASE DISCUSS DR. VANDER WEIDE'S ADJUSTMENT FOR FLOTATION**  
4 **COSTS.**

5 A. Dr. Vander Weide claims that an upward adjustment to the equity cost rate is  
6 necessary for flotation costs. This adjustment factor is erroneous for several reasons.  
7 First, the Company has not identified any actual test-year flotation costs for the  
8 Company. Therefore, the Company is requesting annual revenues in the form of a  
9 higher return on equity for flotation costs that have not been identified. Second, it is  
10 commonly argued that a flotation cost adjustment (such as that used by the Company)  
11 is necessary to prevent the dilution of the existing shareholders. In this case, the  
12 argument goes, a flotation cost adjustment would be justified by reference to bonds and  
13 the manner in which issuance costs are recovered by including the amortization of bond  
14 flotation costs in annual financing costs. However, this is incorrect for several reasons:

15 (1) If an equity flotation cost adjustment is similar to a debt flotation cost  
16 adjustment, the fact that the market-to-book ratios for electric utility companies are  
17 over 1.0X actually suggests that there should be a flotation cost reduction (and not an  
18 increase) to the equity cost rate. This is because when (a) a bond is issued at a price in  
19 excess of face or book value, and (b) the difference between market price and the book  
20 value is greater than the flotation or issuance costs, then the result is the cost of that  
21 debt is lower than the coupon rate of the debt. The amount by which market values of  
22 electric utility companies are in excess of book values is much greater than flotation  
23 costs. Thus, if common stock flotation costs were exactly like bond flotation costs, and

1 one was making an explicit flotation cost adjustment to the cost of common equity, the  
2 adjustment would be downward;

3 (2) If a flotation cost adjustment is needed to prevent dilution of existing  
4 stockholders' investment, then the reduction of the book value of stockholder  
5 investment associated with flotation costs can occur only when a company's stock is  
6 selling at a market price at/or below its book value. As noted above, electric utility  
7 companies are selling at market prices well in excess of book value. Hence, when new  
8 shares are sold, existing shareholders realize an increase in the book value per share  
9 of their investment, not a decrease;

10 (3) Flotation costs consist primarily of the underwriting spread or fee and not  
11 out-of-pocket expenses. On a per share basis, the underwriting spread is the difference  
12 between the price the investment banker receives from investors and the price the  
13 investment banker pays to the company. Hence, these are not expenses that must be  
14 recovered through the regulatory process. Furthermore, the underwriting spread is  
15 known to the investors who are buying the new issue of stock; so they are well aware  
16 of the difference between the price they are paying to buy the stock and the price that  
17 the Company is receiving. The offering price which they pay is what matters when  
18 investors decide to buy a stock based on its expected return and risk prospects.  
19 Therefore, the company is not entitled to an adjustment to the allowed return to account  
20 for those costs; and

21 (4) Flotation costs, in the form of the underwriting spread, are a form of a  
22 transaction cost in the market. They represent the difference between the price paid by  
23 investors and the amount received by the issuing company. Whereas the Company

1 believes that it should be compensated for these transactions costs, they have not  
2 accounted for other market transaction costs in determining a cost of equity for the  
3 Company. Most notably, brokerage fees that investors pay when they buy shares in the  
4 open market are another market transaction cost. Brokerage fees increase the effective  
5 stock price paid by investors to buy shares. If the Company had included these  
6 brokerage fees or transaction costs in their DCF analysis, the higher effective stock  
7 prices paid for stocks would lead to lower dividend yields and equity cost rates. This  
8 would result in a downward adjustment to their DCF equity cost rate.

9

10 **A. Risk Premium (“RP”) Approach**

11

12 **Q. PLEASE REVIEW DR. VANDER WEIDE'S RP ANALYSES.**

13 A. In Schedules 3, 4, and 5 of Exhibit No. \_\_ (JWV-1), Dr. Vander Weide develops  
14 an equity cost rate using expected (*ex ante*) and historical RP models. Dr. Vander Weide’s  
15 RP results are provided in Panels C and D of Exhibit JRW-13. He reports RP equity  
16 cost rates of 10.90% using the expected return approach and 10.60% using the historical  
17 RP approach.

18 In his expected RP approach, Dr. Vander Weide computes an expected stock  
19 return by applying the DCF model to the S&P utilities and the S&P 500 and uses the EPS  
20 growth rate forecasts of Wall Street analysts as his growth rate. He then subtracts the  
21 yield on ‘A’ rated utility bonds. In his historic RP model, Dr. Vander Weide computes a  
22 historical risk premium as the difference in the arithmetic mean stock and bond returns.



1 The stock returns are computed for different time periods for different indexes,  
2 including S&P and Moody's electric utility indexes as well as the S&P 500.

3

4 **Q. WHAT ARE THE ERRORS IN DR. VANDER WEIDE'S RP ANALYSES?**

5 A. The errors in Dr. Vander Weide's RP equity cost rate approaches include: (1) an  
6 inflated base interest rate; (2) an excessive risk premium which is based on the historical  
7 relationship between stock and bond returns; and (3) the inclusion of a flotation cost  
8 adjustment of 0.20%. The errors in the flotation cost issue have already been addressed.  
9 The other two issues are discussed below.

10

11 1. Inflated Base Yield

12

13 **Q. PLEASE DISCUSS THE BASE YIELD OF DR. VANDER WEIDE'S RISK**  
14 **PREMIUM ANALYSIS.**

15 A. The base yield in Dr. Vander Weide's RP analysis is the projected yield on 'A'  
16 rated utility bonds. There are two issues with his projected 6.20% 'A' rated utility bond  
17 yield. First, the yield is well above current market rates. As shown on Page 1 of Exhibit  
18 JRW-3, the current yield on long-term, 'A' rated public utility bonds is about 4.0%. As  
19 such, his base interest rate is vastly overstated and he provides no sound basis for using  
20 this overstated rate. Second, Vander Weide's base yield is erroneous and inflates the  
21 required return on equity in two ways. First, long-term bonds are subject to interest  
22 rate risk, a risk which does not affect common stockholders since dividend payments  
23 (unlike bond interest payments) are not fixed but tend to increase over time. Second,

1 the base yield in Dr. Vander Weide's risk premium study is subject to credit risk since  
2 it is not default risk-free like an obligation of the U.S. Treasury. As a result, its yield-  
3 to-maturity includes a premium for default risk and therefore is above its expected  
4 return. Hence, using such a bond's yield-to-maturity as a base yield results in an  
5 overstatement of investors' return expectations.

6

7

2. Excessive Risk Premium

8

9 **Q. DR. VANDER WEIDE EMPLOYS A DCF-BASED *EX ANTE* RISK PREMIUM**  
10 **APPROACH. PLEASE DISCUSS THE ERRORS IN THIS APPROACH.**

11 A. Dr. Vander Weide computes a DCF-based equity risk premium. He estimates  
12 an expected return using the DCF model, and subtracts a concurrent measure of interest  
13 rates. He computes the expected return in this RP approach by applying the DCF model  
14 to a group of electric utility companies on a monthly basis over the 1998-2015 time  
15 periods. He employs the EPS growth rate forecasts of Wall Street analysts as the DCF  
16 growth rate. To compute the RP, he then subtracts the yield on 'A' rated utility bonds.

17 The primary error in this approach is that he uses the EPS growth rate forecasts  
18 of Wall Street analysts as the one and only measure of growth in the DCF model. The  
19 errors in this issue were addressed above. As I have discussed, analysts' EPS growth  
20 rate forecasts are highly inaccurate estimates of future earnings (a naïve random walk  
21 model performs just as well), and are overly optimistic and upwardly-biased measures  
22 of actual future EPS growth for companies in general as well as for utilities. As a result,

1 Dr. Vander Weide's ex-ante risk premium is overstated because his expected return  
2 measure is inflated.

3

4 **Q. PLEASE REVIEW DR. VANDER WEIDE'S *EX POST* OR HISTORIC RP**  
5 **STUDY.**

6 A. Dr. Vander Weide performs an ex-post or historical RP study that appears in  
7 Schedules 4 and 5 of Exhibit \_\_ (JVW-1). This study involves an assessment of the  
8 historical differences between the S&P Public Utility Index and the S&P 500 stock returns  
9 and public utility bond returns over various time periods between the years 1937-2015.  
10 From the results of his study, he concludes that an appropriate risk premium is 3.9% using  
11 S&P public utility stock returns and 4.5% using S&P 500 stock returns.

12

13 **Q. FIRST, HAS DR. VANDER WEIDE PROVIDED ANY EMPIRICAL EVIDENCE**  
14 **WHATSOEVER THAT THE S&P 500 COMPANIES ARE APPROPRIATE RISK**  
15 **PROXIES FOR ELECTRIC UTILITY COMPANIES?**

16 A. No, he has not. Dr. Vander Weide has provided no such evidence, and as I have  
17 previously indicated, electric utilities are among the least risky companies in the U.S. As  
18 a result, because Dr. Vander Weide has provided no evidence that the S&P 500 is an  
19 appropriate proxy for electric utility companies, the results of this study should be ignored.

20

21 **Q. PLEASE ADDRESS THE ISSUES INVOLVED IN USING HISTORICAL STOCK**  
22 **AND BOND RETURNS TO COMPUTE A FORWARD-LOOKING OR *EX ANTE***  
23 **RISK PREMIUM.**

1 A. As previously discussed, one way to measure a market risk premium is to  
2 compute the difference between historic stock and bond returns. However, this  
3 approach can produce differing results depending on several factors, including the  
4 measure of central tendency used, the time period evaluated, and the stock and bond  
5 market index employed. In addition, there are a myriad of empirical problems in this  
6 approach, which result in historical market returns producing inflated estimates of  
7 expected risk premiums. Among the errors are the U.S. stock market survivorship bias  
8 (the “Peso Problem”), the company survivorship bias (only successful companies  
9 survive – poor companies do not survive), the measurement of central tendency (the  
10 arithmetic versus geometric mean), the historical time horizon used, the change in risk  
11 and required return over time, the downward bias in historical bond returns, and  
12 unattainable return bias (the Ibbotson procedure presumes monthly portfolio  
13 rebalancing).<sup>47</sup> The bottom line is that there are a number of empirical problems in  
14 using historical stock and bond returns to measure an expected equity risk premium.

15  
16 **C. CAPM Approach**

17 **Q. PLEASE DISCUSS DR. VANDER WEIDE’S CAPM.**

18 A. In Schedules 6, 7, 8, and 9 of Exhibit No. \_\_ (JVW-1), Dr. Vander Weide develops  
19 an equity cost rate using the CAPM. In Schedules 6 and 7 he employs a historical market

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<sup>47</sup>These issues are addressed in a number of studies, including: Aswath. Damodaran, “Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2015 Edition” NYU Working Paper, 2015, pp. 32-5; See Richard Roll, “On Computing Mean Returns and the Small Firm Premium,” *Journal of Financial Economics*, pp. 371-86, (1983); Jay Ritter, “The Biggest Mistakes We Teach,” *Journal of Financial Research* (Summer 2002); Bradford Cornell, *The Equity Risk Premium* (New York, John Wiley & Sons), 1999, pp. 36-78; and J. P. Morgan, “The Most Important Number in Finance,” p. 6.

1 risk premium and in Schedule 9 he uses an expected market risk premium. Dr. Vander  
2 Weide's CAPM results are provided in Panels E and F of Exhibit JRW-13. He reports  
3 CAPM equity cost rates of 10.10% using the historical CAPM and 10.80% using the  
4 expected CAPM. He includes a flotation cost adjustment of 0.20% in each.

5 Dr. Vander Weide uses a risk-free interest rate of 4.20% in each CAPM and  
6 betas from *Value Line*. Dr. Vander Weide employs two different measure of beta: (1)  
7 the average beta of 0.75 for his group as provided by *Value Line*; and (2) an historical  
8 beta of 0.90, which he computes as the ratio of the risk premium on the utility portfolio  
9 to the risk premium on the S&P 500.

10 Dr. Vander Weide's historical CAPM uses the Ibbotson return data and the  
11 market risk premium of 6.90% is calculated as the difference between the arithmetic  
12 mean stock return and the bond income return over the 1926-2015 period. Dr. Vander  
13 Weide develops his expected market risk premium for his CAPM of 7.70% in Schedule  
14 9 of Exhibit \_\_JVW-1) by applying the DCF model to the companies in the S&P 500. Dr.  
15 Vander Weide estimates an expected market return of 11.90% using an adjusted  
16 dividend yield of 2.9% and an expected DCF growth rate of 9.0%.

17

18 **Q. WHAT ARE THE ERRORS IN DR. VANDER WEIDE'S CAPM ANALYSIS?**

19 A. There are several flaws with Dr. Vander Weide's CAPM: (1) his risk-free rate of  
20 4.20%; (2) the "historical beta" of 0.90; (3) the historic and expected market risk  
21 premiums; and (4) the flotation cost adjustment.

1 1. Risk-Free Interest Rate

2  
3 **Q. PLEASE DISCUSS DR. VANDER WEIDE’S RISK-FREE RATE OF INTEREST**  
4 **IN HIS CAPM.**

5 A. Dr. Vander Weide uses a risk-free rate of interest of 4.2% in his CAPM. This  
6 figure represents the average projected rate on twenty-year Treasury bonds by *Value Line*  
7 and EIA. The current rate on twenty-year Treasury bonds, as of January, 2017, is below  
8 3.0%. As such, Dr. Vander Weide’s risk-free interest rate is overstated.

9  
10 2. “Historical Beta”

11  
12 **Q. PLEASE REVIEW DR. VANDER WEIDE’S “HISTORICAL BETA.”**

13 A. Dr. Vander Weide has created a new measure of beta – a “historical beta.” As  
14 presented on page 3 of Exhibit JRW-11, beta is normally computed based on a  
15 regression of a company’s stock return on the return of the market (i.e., the S&P 500).  
16 *Value Line* then adjusts the beta from the regression for the tendency of betas to move  
17 toward the market average beta of 1.0 over time. As noted above, the average *Value*  
18 *Line* beta for the companies in Dr. Vander Weide’s proxy group is 0.75. Betas for  
19 utilities have been in this range over the past decade. Yet, Dr. Vander Weide’s  
20 “historical beta” is a totally new measure of beta that is his own creation. He uses the  
21 ratio of the historical risk premium on the utility portfolio to the historical risk premium  
22 on the S&P 500 ( $5.34 \div 5.92 = 0.90$ ).

1 **Q. WHAT IS THE ERROR WITH THIS APPROACH?**

2 A. Dr. Vander Weide's "historical beta" has no theoretical or empirical support in the  
3 CAPM literature, nor has it been endorsed or accepted by any leading scholars. Beta is a  
4 measure of systematic risk or undiversifiable risk. Dr. Vander Weide's historical beta is  
5 based on total risk and is not calculated based on traditional betas according to the CAPM.

6

7 3. Historical and Expected Market Risk Premiums

8

9 **Q. PLEASE ADDRESS THE PROBLEMS WITH DR. VANDER WEIDE'S**  
10 **HISTORICAL CAPM.**

11 A. Dr. Vander Weide historical CAPM uses a market risk premium of 6.9% which  
12 is based on the difference between the arithmetic mean stock and bond income returns  
13 over the 1926-2015 period. The errors associated with computing an expected equity  
14 risk premium using historical stock and bond returns were addressed earlier in this  
15 testimony. In short, there are a myriad of empirical problems, which result in historical  
16 market returns producing inflated estimates of expected risk premiums. These were  
17 discussed above and include U.S. stock market survivorship bias, the company  
18 survivorship bias, and unattainable return bias. In addition, in this case, Dr. Vander  
19 Weide has compounded the error by using the bond income return rather than the actual  
20 bond return. By omitting the price change component of the bond return, he has  
21 magnified the historical risk premium by not matching the returns on stock with the  
22 actual returns on bonds.

1 **Q. PLEASE REVIEW THE ERRORS IN DR. VANDER WEIDE'S MARKET RISK**  
2 **PREMIUM IN HIS EXPECTED CAPM APPROACH.**

3 A. Dr. Vander Weide develops an expected market risk premium for his CAPM of  
4 7.70% in Schedule 9 of Exhibit \_\_JVW-1, by applying the DCF model to the S&P 500.  
5 Dr. Vander Weide estimates an expected market return of 11.9% using a dividend yield  
6 of 2.90% and an expected DCF growth rate of 9.0%. The expected DCF growth rate  
7 for the S&P 500 is the average of the expected EPS growth rates from I/B/E/S. This is  
8 the primary error in this approach. As previously discussed, the expected EPS growth  
9 rates of Wall Street analysts are overly optimistic and upwardly biased. In addition, as  
10 explained below, Dr. Vander Weide's projected EPS growth rate of 9.0% is  
11 inconsistent with economic and earnings growth in the U.S.

12  
13 **Q. BEYOND YOUR PREVIOUS DISCUSSION OF THE UPWARD BIAS IN**  
14 **WALL STREET ANALYSTS' AND VALUE LINE'S EPS GROWTH RATE**  
15 **FORECASTS, WHAT OTHER EVIDENCE CAN YOU PROVIDE THAT DR.**  
16 **VANDER WEIDE'S S&P 500 GROWTH RATE IS EXCESSIVE?**

17 A. A long-term EPS growth rate of 9.0% is not consistent with historic as well as  
18 projected economic and earnings growth in the U.S for several reasons: (1) long-term  
19 EPS and economic growth, as measured by Gross Domestic Product ("GDP"), is about  
20 two-thirds of Dr. Vander Weide's projected EPS growth rate of 9.0%; (2) more recent  
21 trends in GDP growth, as well as projections of GDP growth, suggest slower economic  
22 and earnings growth in the future; and (3) over time, EPS growth tends to lag behind  
23 GDP growth.





1 nominal GDP growth in recent decades has slowed and that a figure in the range of 4.0%  
2 to 5.0% is more appropriate today for the U.S. economy. These figures demonstrate that  
3 Dr. Vander Weide's long-term EPS growth rate of 9.0% is even more inflated.

4 **Table 5**  
5 **Historic GDP Growth Rates**

<b>10-Year Average - 2006-2015</b>	<b>3.28%</b>
<b>20-Year Average - 1996-2015</b>	<b>4.36%</b>
<b>30-Year Average - 1986-2015</b>	<b>4.87%</b>
<b>40-Year Average - 1976-2015</b>	<b>6.19%</b>
<b>50-Year Average - 1966-2015</b>	<b>6.65%</b>

6

7 **Q. ARE THE LOWER GDP GROWTH RATES OF RECENT DECADES**  
8 **CONSISTENT WITH THE FORECASTS OF GDP GROWTH?**

9 A. Yes, they are. A lower range is also consistent with long-term GDP forecasts.

10 There are several forecasts of annual GDP growth that are available from economists and  
11 government agencies. These are listed on page 2 of Exhibit JRW-13. Economists, in the  
12 February 2016 *Survey of Professional Forecasters*, forecasted the mean 10-year nominal  
13 GDP growth rate to be 4.5%.<sup>48</sup> The U.S. Energy Information Administration, in its  
14 projections used in preparing *Annual Energy Outlook*, forecasted long-term GDP  
15 growth of 4.3% for the period 2013-2040.<sup>49</sup> The Congressional Budget Office, in its  
16 forecasts for the period 2015 to 2040, projected a nominal GDP growth rate of 4.1%.<sup>50</sup>  
17 Finally, the Social Security Administration, in its Annual OASDI Report, projected a

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<sup>48</sup>Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters* (Feb. 2016), <https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/>.

<sup>49</sup>U.S. Energy Information Administration, *Table 20 of the Annual Energy Outlook 2016* (Sept. 15, 2016), [http://www.eia.gov/forecasts/aeo/tables\\_ref.cfm](http://www.eia.gov/forecasts/aeo/tables_ref.cfm).

<sup>50</sup>Congressional Budget Office, *The 2016 Long-term Budget Outlook* (July 2016), [www.cbo.gov/publication/51129](http://www.cbo.gov/publication/51129).

1 nominal GDP growth rate of 4.4% for the period 2013-2090.<sup>51</sup> These four forecasts  
2 and projections of GDP growth from economists and government agencies range from  
3 4.1% to 4.5%.

4

5 **Q. WHY IS PROJECTED GDP GROWTH RELEVANT TO DR. VANDER**  
6 **WEIDE’S LONG-TERM PROJECTED EPS GROWTH RATE OF 9.0%?**

7 A. Brad Cornell of the California Institute of Technology published a study on  
8 GDP growth, earnings growth, and equity returns. He finds that long-term EPS growth  
9 in the U.S. is directly related to GDP growth, with GDP growth providing an upward  
10 limit on EPS growth. In addition, he finds that long-term stock returns are determined  
11 by long-term earnings growth. He concludes with the following observations:<sup>52</sup>

12 The long-run performance of equity investments is fundamentally  
13 linked to growth in earnings. Earnings growth, in turn, depends on  
14 growth in real GDP. This article demonstrates that both theoretical  
15 research and empirical research in development economics suggest  
16 relatively strict limits on future growth. In particular, real GDP  
17 growth in excess of 3 percent in the long run is highly unlikely in  
18 the developed world. In light of ongoing dilution in earnings per  
19 share, this finding implies that investors should anticipate real  
20 returns on U.S. common stocks to average no more than about 4–5  
21 percent in real terms.

22 Given current inflation in the 2% range, the results imply nominal expected  
23 stock market returns in the 7% to 8% range. As such, Dr. Vander Weide’s projected  
24 earnings growth rate and implied expected stock market return and equity risk premium

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<sup>51</sup> Social Security Administration, *2016 Annual Report of the Board of Trustees of the Old-Age, Survivors, and Disability Insurance (OASDI) Program* (June 22, 2016), [http://www.ssa.gov/oact/tr/2016/X1\\_trLOT.html](http://www.ssa.gov/oact/tr/2016/X1_trLOT.html)

<sup>52</sup> Bradford Cornell, “Economic Growth and Equity Investing,” *Financial Analysts Journal* (January- February, 2010), p. 63.

1 are not indicative of the realities of the U.S. economy and stock market. As such, his  
2 expected CAPM equity cost rate is significantly overstated.

3

4 **Q. PLEASE PROVIDE A SUMMARY ASSESSMENT OF DR. VANDER WEIDE'S**  
5 **MARKET RISK PREMIUMS.**

6 A. Dr. Vander Weide's historical and expected market risk premiums are inflated  
7 due to errors and bias in his studies. Investment banks, consulting firms, and CFOs use  
8 the equity risk premium concept every day in making financing, investment, and valuation  
9 decisions. I have provided the results of recent surveys of CFOs, financial forecasters,  
10 analysts, and companies, which show their equity risk premium estimates are in the 4%  
11 to 5% range, not in the 6% to 8% range. On this issue, the opinions of these market  
12 participants are especially relevant. They deal with capital markets on an ongoing basis  
13 since they must continually assess and evaluate capital costs for their companies. They  
14 are well aware of the historical equity risk premium results as published by Ibbotson  
15 Associates as well as Wall Street analysts' EPS growth rate projections. Nonetheless,  
16 the December 2016 *CFO Magazine's* Duke University Survey of about 500 CFOs  
17 shows an expected market risk premium of 5.70% over the next ten years. In addition,  
18 surveys conducted in 2016 by Fernandez indicates that financial analysts and  
19 companies are using equity risk premiums of 5.3%. Moreover, Duff & Phelps, an  
20 investment advisor, uses a 5.50% market risk premium. As such, using these real world  
21 equity risk premiums, the appropriate equity cost rate for a public utility should be in  
22 the 8.0% to 9.0% range and not in the 10.75% range.

23

1 **D. Leverage Adjustment**

2  
3 **Q. PLEASE REVIEW DR. VANDER WEIDE’S LEVERAGE ADJUSTMENT.**

4 A. Dr. Vander Weide has added a leverage adjustment of 70 basis points to the  
5 estimated equity cost rates that he estimated using the DCF, RP, and CAPM approaches.

6 Dr. Vander Weide claims that this is needed since (1) market values are greater than book  
7 values for utilities and (2) the overall rate of return is applied to a book value capitalization  
8 in the ratemaking process. This adjustment is unwarranted for the following reasons:

9 (1) The market value of a firm's equity exceeds the book value of equity when the  
10 firm is expected to earn more on the book value of investment than investors require. This  
11 relationship is described very succinctly in the Harvard Business School case study, which  
12 I quote earlier in my testimony.<sup>53</sup> As such, the reason that market values exceed book  
13 values is that the company is earning a return on equity in excess of its cost of equity;

14 (2) Despite Dr. Vander Weide’s contention that this represents a leverage adjustment,  
15 there is no change in leverage. There is no need for a leverage adjustment because there  
16 is no change in leverage. The Company’s financial statements and fixed financial  
17 obligations remain the same;

18 (3) Financial publications and investment firms report capitalizations on a book value  
19 and not a market value basis;

20 (4) Dr. Vander Weide has presented his leverage adjustment in many rate cases over  
21 many years before various regulatory commissions. In OPC Interrogatory No. 69, Dr.  
22 Vander Weide was asked to list cases in which he employed this leverage adjustment. In

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<sup>53</sup> See page 44 and footnote no. 24.

1 response to this interrogatory he failed or refused to provide orders in which a regulatory  
2 commission has adopted his leverage adjustment. As such, the record in this case is  
3 devoid of any evidence that any commission has ever accepted Dr. Vander Weide's  
4 leverage adjustment. In the last Gulf Power case, he indicated that he had been  
5 recommending the leverage adjustment to his cost of equity since the early 1990s.  
6 However, he has not identified any proceeding in which he has testified over the past 20  
7 plus years where the regulatory commission adopted his leverage adjustment;

8 (5) As I previously noted, Gulf's common equity ratio and financial leverage is in line  
9 with the common equity ratios and financial leverage of other electric utilities; and

10 (6) Gulf's bond ratings suggest that the company's investment risk is below that of  
11 other electric utilities.

12

13 **Q. PLEASE EXPLAIN WHY YOU BELIEVE THAT REGULATORY**  
14 **COMMISSIONS HAVE REJECTED DR. VANDER WEIDE'S LEVERAGE**  
15 **ADJUSTMENT?**

16 A. I believe that Dr. Vander Weide's leverage adjustment has been rejected by  
17 regulatory commissions because it increases the ROEs for utilities that have high  
18 returns on common equity, and decreases the ROEs for utilities that have low returns  
19 on common equity.

20 In the graphs presented in Exhibit JRW-6, I have demonstrated that there is a  
21 strong positive relationship between expected returns on common equity and market-to-  
22 book ratios for public utilities. Hence, in the context of Dr. Vander Weide's leverage  
23 adjustment, this means that: (1) for a utility with a relatively high market-to-book ratio

1 (e.g., 2.5) and ROE (e.g., 12.0%), the leverage adjustment will increase the estimated  
2 equity cost rate, while (2) for a utility with a relatively low market-to-book ratio (e.g., 0.5)  
3 and ROE (e.g., 5.0%), the leverage adjustment will decrease the estimated equity cost rate.  
4 Therefore, the adjustment will result in even higher market-to-book ratios for utilities with  
5 relatively high ROEs and even lower market-to-book ratios for utilities with relatively low  
6 ROEs.

7

8 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

9 A. Yes.

**CERTIFICATE OF SERVICE**

I **HEREBY CERTIFY** that a true and correct copy of the foregoing Direct Testimony of **J. Randall Woolridge** has been furnished by electronic mail to the following parties on this 13<sup>th</sup> day of January, 2017.

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**Exhibit JRW--1**

**Gulf Power Company  
Recommended Cost of Capital**

<b>Capital</b>	<b>Capitalization Ratios</b>	<b>Cost Rate</b>	<b>Weighted Cost Rate</b>
<b>Short-Term Debt</b>	<b>1.26%</b>	<b>3.02%</b>	<b>0.04%</b>
<b>Long-Term Debt</b>	<b>32.29%</b>	<b>4.40%</b>	<b>1.42%</b>
<b>Preferred Stock</b>	<b>4.17%</b>	<b>6.15%</b>	<b>0.26%</b>
<b>Common Equity</b>	<b>37.72%</b>	<b>8.88%</b>	<b>3.35%</b>
<b>Customer Deposits</b>	<b>1.01%</b>	<b>2.30%</b>	<b>0.02%</b>
<b>Deferred Income Taxes</b>	<b>24.93%</b>	<b>0.00%</b>	<b>0.00%</b>
<b>ASC 740 Deferred Taxes</b>	<b>-1.41%</b>	<b>0.00%</b>	<b>0.00%</b>
<b>Investment Credit - Weighted Cost</b>	<b>0.03%</b>	<b>6.71%</b>	<b>0.00%</b>
<b>Totals</b>	<b>100.00%</b>	<b>0.00%</b>	<b>5.09%</b>

Source: Exhibit JRW-5

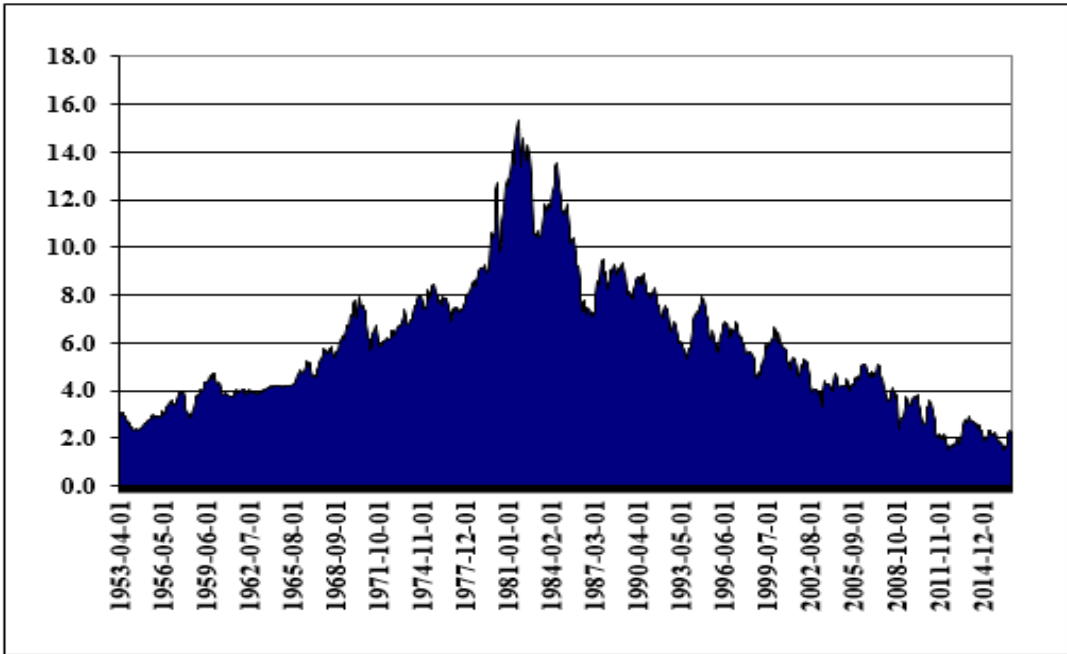
**OPC's Recommended Capitalization Ratios for Gulf Power - Investor Provided Capital**

<b>Capital</b>	<b>Capitalization Ratios</b>	<b>Cost Rate</b>	<b>Weighted Cost Rate</b>
<b>Short-Term Debt</b>	<b>1.67%</b>	<b>3.02%</b>	<b>0.05%</b>
<b>Long-Term Debt</b>	<b>42.80%</b>	<b>4.40%</b>	<b>1.88%</b>
<b>Preferred Stock</b>	<b>5.53%</b>	<b>6.15%</b>	<b>0.34%</b>
<b>Common Equity</b>	<b>50.00%</b>	<b>8.88%</b>	<b>4.44%</b>
	<b>100.00%</b>		<b>6.71%</b>

Source: Exhibit JRW-5

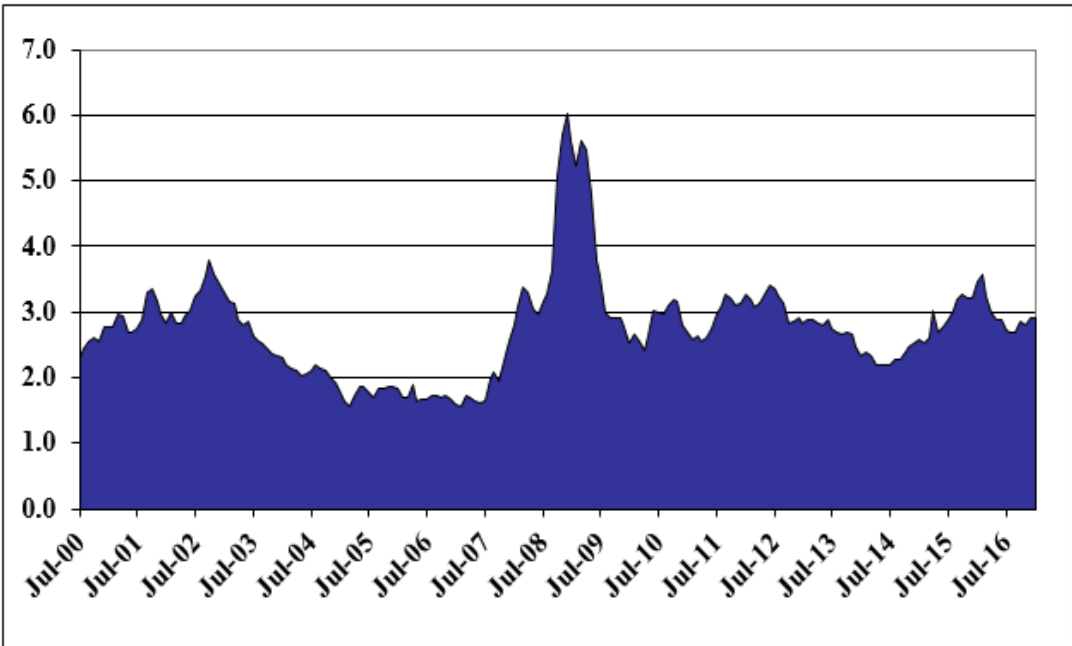
Exhibit JRW--2

Panel A  
Ten-Year Treasury Yields  
1953-Present



Source: <http://research.stlouisfed.org/fred2/data/GS10.txt>

Panel B  
Long-Term Moody's Baa Yields Minus Ten-Year Treasury Yields  
2000-Present

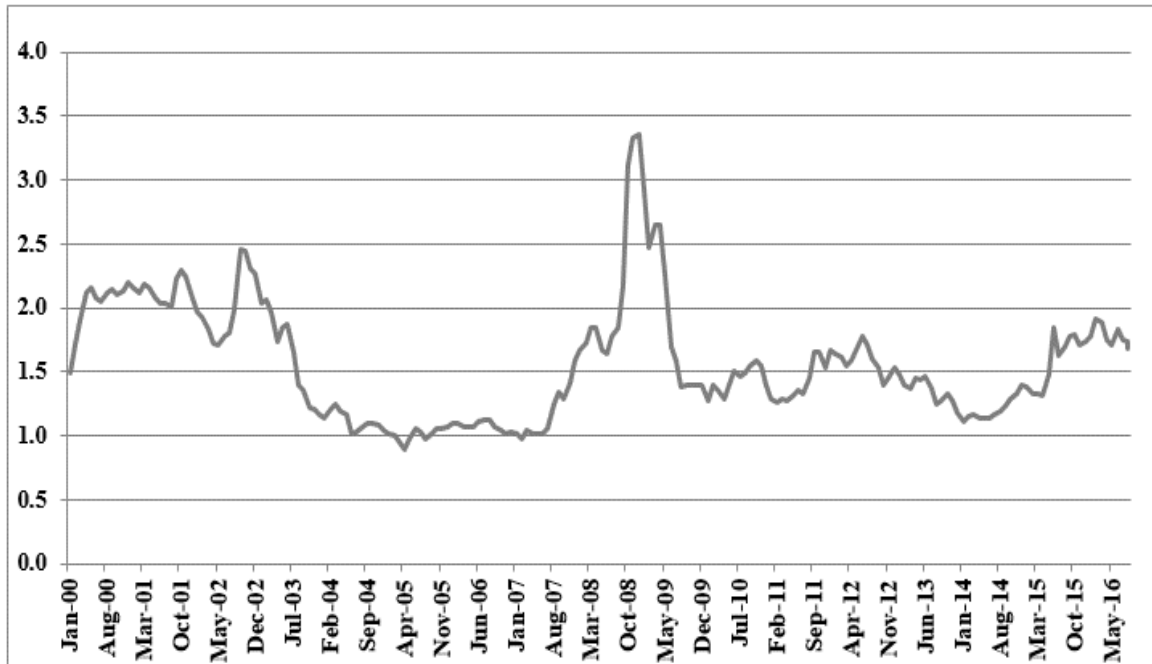


Source: Federal Reserve Bank of St. Louis, FRED Database.

Exhibit JRW--3  
Panel A  
Long-Term, A-Rated Public Utility Yields



Panel B  
Long-Term, A-Rated Public Utility Yields minus -Twenty-Year Treasury Yields



Source: Mergent Bond Record, Federal Reserve Bank of St. Louis, FRED Database.

Exhibit JRW-4

Gulf Power Company  
 Summary Financial Statistics for Proxy Groups

Panel A  
 Electric Proxy Group

Company	Operating Revenue (\$mil)	Percent Elec Revenue	Percent Gas Revenue	Net Plant (\$mil)	Market Cap (\$mil)	S&P Issuer Credit Rating	Moody's Long Term Rating	Pre-Tax Interest Coverage	Primary Service Area	Common Equity Ratio	Return on Equity	Market to Book Ratio
ALLETE, Inc. (NYSE-ALE)	1,491.7	66		3,631.3	2.94	BBB+	A3	4.1	MN, WI	54.2	8.2	1.59
Alliant Energy Corporation (NYSE-LNT)	3,237.4	77	10	9,846.4	8.68	A-	A3	3.6	WI,IA,IL,MN	48.0	10.1	2.18
Ameren Corporation (NYSE-AEE)	6,002.0	86	19	19,324.0	12.09	BBB+	Baa1	3.8	IL,MO	46.5	9.2	1.75
American Electric Power Co. (NYSE-AEP)	15,983.8	82		47,436.2	32.29	BBB	Baa1	3.8	10 States	46.0	11.1	1.76
Avista Corporation (NYSE-AVA)	1,438.0	69	33	3,990.7	2.62	BBB	Baa1	3.5	WA,ID,AK	49.7	8.6	1.62
Black Hills Corporation (NYSE-BKH)	1,365.8	50	45	4,389.9	3.03	BBB	Baa1	3.4	NE,IA,CO,WY,AR,SD,MT	31.8	1.2	1.94
CMS Energy Corporation (NYSE-CMS)	6,167.0	69	26	15,187.0	11.80	BBB+	Baa2	2.8	MI	30.3	13.6	2.84
Consolidated Edison, Inc. (NYSE-ED)	12,100.0	71	14	32,600.0	22.82	A-	A3	3.7	NY,PA	47.8	8.6	1.64
Dominion Resources, Inc. (NYSE-D)	11,046.0	65	1	43,682.0	46.08	BBB+	Baa2	3.8	NC,OH,FL,SCKY	31.7	14.4	3.23
DTE Energy Company (NYSE-DTE)	9,913.0	50	13	18,295.0	16.81	BBB+	A3	3.4	MI	47.5	8.6	1.92
Duke Energy Corporation (NYSE-DUK)	22,911.0	91	2	77,329.0	55.42	A-	A3	3.0	NC,OH,FL,SCKY	47.2	6.6	1.39
Edison International (NYSE-EIX)	11,321.0	100		35,629.0	23.89	BBB+	A3	3.9	CA	44.3	7.8	2.07
El Paso Electric Company (NYSE-EE)	842.3	100		2,752.2	1.82	BBB	Baa1	2.3	TX,NM	42.3	7.4	1.80
Entergy Corporation (NYSE-ETR)	10,952.3	82	1	29,069.7	13.83	BBB	Baa3	2.4	LA,AR,MS,TX	39.2	1.7	1.42
Eversource Energy (NYSE-ES)	7,447.2	89	11	20,448.5	17.60	A	Baa1	4.7	CT,NH,MA	50.3	8.4	1.67
FirstEnergy Corporation (ASE-FE)	14,934.0	71		37,461.0	13.78	BBB-	Baa3	2.2	OH,PA,NY,NJ,WV,MD	33.5	NM	1.21
IDACORP, Inc. (NYSE-IDA)	1,251.0	100		4,045.3	3.84	BBB	Baa1	3.5	ID	54.1	9.2	1.84
MGE Energy, Inc. (NYSE-MGEE)	540.9	76	24	1,266.8	1.92	AA-	A1	6.6	WI	64.4	10.6	2.72
NorthWestern Corporation (NYSE-NWE)	1,223.4	80	20	4,109.7	2.99	BBB	A3	2.5	MT,SD,NE	44.2	9.1	1.84
OGE Energy Corp. (NYSE-OGE)	2,151.4	100		7,469.9	6.01	A-	A3	4.0	OK,AR	53.3	7.2	1.81
Otter Tail Corporation (NDQ-OTTR)	798.5	52		1,428.6	1.30	BBB	A3	3.6	MN,ND,SD	51.6	9.8	2.04
PG&E Corporation (NYSE-PCG)	16,860.0	82	18	48,597.0	31.20	BBB	Baa1	2.0	CA	47.6	4.6	1.86
Pinnacle West Capital Corp. (NYSE-PNW)	3,526.1	100		12,132.1	8.40	A-	Baa1	4.8	AZ	51.1	9.4	1.83
PNM Resources, Inc. (NYSE-PNM)	1,379.7	100		4,790.2	1.26	BBB+	Baa3	2.4	NM,TX	37.3	0.4	0.75
Portland General Electric Company (NYSE-POR)	1,890.0	100		6,284.0	3.73	BBB	A3	2.6	OR	49.8	8.2	1.62
PPL Corporation (NYSE-PPL)	7,454.0	60		30,794.0	23.69	A-	Baa2	3.2	PA,KY	34.0	17.3	2.30
SCANA Corporation (NYSE-SCG)	4,102.0	61	18	13,145.0	10.16	BBB+	Baa3	3.4	SC,NC,GA	44.5	19.7	1.85
Southern Company (NYSE-SO)	17,393.0	94		63,893.0	47.96	A-	Baa1	5.2	GA,FL,NJ,IL,VA,TN,MS	37.1	10.7	2.12
WEC Energy Group (NYSE-WEC)	7,343.8	62	28	19,398.9	18.94	A-	A3	4.5	WI,IL,MN,MI	47.1	10.2	2.14
Xcel Energy Inc. (NYSE-XEL)	10,819.3	85	14	31,823.3	21.15	A-	A3	3.8	MN,WI,ND,SD,MI	42.9	10.2	1.98
Mean	7,129.5	79	17	21,675.0	15.6	BBB+	Baa1	3.6		45.0	9.0	1.89
Median	6,084.5	81	18	16,741.0	11.9	BBB+	Baa1	3.6		46.8	9.1	1.84

Data Source: AUS Utility Reports, September, 2016; Pre-Tax Interest Coverage and Primary Service Territory are from Value Line Investment Survey, 2016.

Panel B  
 Vander Weide Proxy Group

Company	Operating Revenue (\$mil)	Percent Elec Revenue	Percent Gas Revenue	Net Plant (\$mil)	Market Cap (\$mil)	S&P Issuer Credit Rating	Moody's Long Term Rating	Pre-Tax Interest Coverage	Primary Service Area	Common Equity Ratio	Return on Equity	Market to Book Ratio
ALLETE, Inc. (NYSE-ALE)	1,491.7	66		3,631.3	2.94	BBB+	A3	4.1	MN, WI	54.2	8.2	1.59
Alliant Energy Corporation (NYSE-LNT)	3,237.4	77	10	9,846.4	8.68	A-	A3	3.6	WI,IA,IL,MN	48.0	10.1	2.18
Ameren Corporation (NYSE-AEE)	6,002.0	86	19	19,324.0	12.09	BBB+	Baa1	3.8	IL,MO	46.5	9.2	1.75
American Electric Power Co. (NYSE-AEP)	15,983.8	82		47,436.2	32.29	BBB	Baa1	3.8	10 States	46.0	11.1	1.76
Black Hills Corporation (NYSE-BKH)	1,365.8	50	45	4,389.9	3.03	BBB	Baa1	3.4	NE,IA,CO,WY,AR,SD,MT	31.8	1.2	1.94
CenterPoint Energy (NYSE-CNP)	6,979.0	42	36	11,898.0	9.53	A-	Baa1	2.7	TX,MN,AR,LA,OK	28.4	NM	2.81
CMS Energy Corporation (NYSE-CMS)	6,167.0	69	26	15,187.0	11.80	BBB+	Baa2	2.8	MI	30.3	13.6	2.84
Dominion Resources, Inc. (NYSE-D)	11,046.0	65	1	43,682.0	46.08	BBB+	Baa2	3.8	NC,OH,FL,SCKY	31.7	14.4	3.23
DTE Energy Company (NYSE-DTE)	9,913.0	50	13	18,295.0	16.81	BBB+	A3	3.4	MI	47.5	8.6	1.92
Duke Energy Corporation (NYSE-DUK)	22,911.0	91	2	77,329.0	55.42	A-	A3	3.0	NC,OH,FL,SCKY	47.2	6.6	1.39
Eversource Energy (NYSE-ES)	7,447.2	89	11	20,448.5	17.60	A	Baa1	4.7	CT,NH,MA	50.3	8.4	1.67
NorthWestern Corporation (NYSE-NWE)	1,223.4	80	20	4,109.7	2.99	BBB	A3	2.5	MT,SD,NE	44.2	9.1	1.84
PG&E Corporation (NYSE-PCG)	16,860.0	82	18	48,597.0	31.20	BBB	Baa1	2.0	CA	47.6	4.6	1.86
Pinnacle West Capital Corp. (NYSE-PNW)	3,526.1	100		12,132.1	8.40	A-	Baa1	4.8	AZ	51.1	9.4	1.83
PNM Resources, Inc. (NYSE-PNM)	1,379.7	100		4,790.2	1.26	BBB+	Baa3	2.4	NM,TX	37.3	0.4	0.75
Portland General Electric Company (NYSE-POR)	1,890.0	100		6,284.0	3.73	BBB	A3	2.6	OR	49.8	8.2	1.62
PPL Corporation (NYSE-PPL)	7,454.0	60		30,794.0	23.69	A-	Baa2	3.2	PA,KY	34.0	17.3	2.30
SCANA Corporation (NYSE-SCG)	4,102.0	61	18	13,145.0	10.16	BBB+	Baa3	3.4	SC,NC,GA	44.5	19.7	1.85
SEMPRA Energy (NYSE-SRE)	10,277.0	36	38	27,314.0	24.95	BBB+	Baa1		CA	42.7	11.1	2.10
Southern Company (NYSE-SO)	17,393.0	94		63,893.0	47.96	A-	Baa1	5.2	GA,FL,NJ,IL,VA,TN,MS	37.1	10.7	2.12
Vectren Corporation (NYSE-VVC)	2,296.0	26	32	3,805.5	4.09	A-	A2		IN,OH	49.2	11.1	2.40
WEC Energy Group (NYSE-WEC)	7,343.8	62	28	19,398.9	18.94	A-	A3	4.5	WI,IL,MN,MI	47.1	10.2	2.14
Xcel Energy Inc. (NYSE-XEL)	10,819.3	85	14	31,823.3	21.15	A-	A3	3.8	MN,WI,ND,SD,MI	42.9	10.2	1.98
Mean	7,700.4	72	21	23,371.9	18.0	BBB+	Baa1	3.5		43.0	9.7	1.99
Median	6,979.0	77	19	18,295.0	12.1	BBB+	Baa1	3.4		46.0	9.8	1.92

Data Source: AUS Utility Reports, September, 2016; Pre-Tax Interest Coverage and Primary Service Territory are from Value Line Investment Survey, 2016.

Exhibit JRW-4

Gulf Power Company  
Value Line Risk Metrics

Panel A

Electric Proxy Group			Safety	Earnings Predictability	Stock Price Stability
Company	Beta	Financial Strength			
ALLETE, Inc. (NYSE-ALE)	0.75	A	2	90	95
Alliant Energy Corporation (NYSE-LNT)	0.75	A	2	85	95
Ameren Corporation (NYSE-AEE)	0.70	A	2	90	100
American Electric Power Co. (NYSE-AEP)	0.65	A	2	80	95
Avista Corporation (NYSE-AVA)	0.70	A	2	50	85
Black Hills Corporation (NYSE-BKH)	0.90	A	2	80	100
CMS Energy Corporation (NYSE-CMS)	0.65	B++	1	95	100
Consolidated Edison, Inc. (NYSE-ED)	0.55	A+	2	80	100
Dominion Resources, Inc. (NYSE-D)	0.70	B++	2	90	100
DTE Energy Company (NYSE-DTE)	0.70	B++	2	80	100
Duke Energy Corporation (NYSE-DUK)	0.60	A	2	65	95
Edison International (NYSE-EIX)	0.65	A	2	80	90
El Paso Electric Company (NYSE-EE)	0.70	B++	3	70	95
Entergy Corporation (NYSE-ETR)	0.65	B++	1	85	95
Eversource Energy (NYSE-ES)	0.70	A	3	45	90
FirstEnergy Corporation (ASE-FE)	0.65	B+	2	90	95
IDACORP, Inc. (NYSE-IDA)	0.75	A	1	90	95
MGE Energy, Inc. (NYSE-MGEE)	0.70	A	3	90	95
NorthWestern Corporation (NYSE-NWE)	0.70	B+	2	85	90
OGE Energy Corp. (NYSE-OGE)	0.90	A	2	50	85
Otter Tail Corporation (NDQ-OTTR)	0.85	B++	3	55	95
PG&E Corporation (NYSE-PCG)	0.65	B+	1	80	95
Pinnacle West Capital Corp. (NYSE-PNW)	0.70	A+	3	40	90
PNM Resources, Inc. (NYSE-PNM)	0.75	B	2	70	95
Portland General Electric Company (NYSE-POE)	0.70	B++	2	60	100
PPL Corporation (NYSE-PPL)	0.70	B++	2	100	100
SCANA Corporation (NYSE-SCG)	0.70	B++	2	100	100
Southern Company (NYSE-SO)	0.55	A	1	85	100
WEC Energy Group (NYSE-WEC)	0.65	A+	1	100	100
Xcel Energy Inc. (NYSE-XEL)	0.60	A+	2.0	78	96
Mean	0.70	A			

Data Source: Value Line Investment Survey, 2016.

Panel B

Vander Weide Proxy Group			Safety	Earnings Predictability	Stock Price Stability
Company	Beta	Financial Strength			
ALLETE, Inc. (NYSE-ALE)	0.75	A	2	90	95
Alliant Energy Corporation (NYSE-LNT)	0.75	A	2	85	95
Ameren Corporation (NYSE-AEE)	0.70	A	2	90	100
American Electric Power Co. (NYSE-AEP)	0.65	A	2	50	85
Black Hills Corporation (NYSE-BKH)	0.90	A	3	90	90
CenterPoint Energy (NYSE-CNP)	0.80	B+	2	80	100
CMS Energy Corporation (NYSE-CMS)	0.65	B++	2	80	100
Dominion Resources, Inc. (NYSE-D)	0.70	B++	2	90	100
DTE Energy Company (NYSE-DTE)	0.70	B++	2	80	100
Duke Energy Corporation (NYSE-DUK)	0.60	A	1	85	95
Eversource Energy (NYSE-ES)	0.70	A	3	90	95
NorthWestern Corporation (NYSE-NWE)	0.70	B+	3	55	95
PG&E Corporation (NYSE-PCG)	0.65	B+	1	80	95
Pinnacle West Capital Corp. (NYSE-PNW)	0.70	A+	3	40	90
PNM Resources, Inc. (NYSE-PNM)	0.75	B	2	70	95
Portland General Electric Company (NYSE-POE)	0.70	B++	2	60	100
PPL Corporation (NYSE-PPL)	0.70	B++	2	100	100
SCANA Corporation (NYSE-SCG)	0.70	B++	2	90	100
SEMPRA Energy (NYSE-SRE)	0.80	A	2	100	100
Southern Company (NYSE-SO)	0.55	A	2	80	95
Vectren Corporation (NYSE-VVC)	0.75	A	1	85	100
WEC Energy Group (NYSE-WEC)	0.65	A+	1	100	100
Xcel Energy Inc. (NYSE-XEL)	0.60	A+	2.0	81	97
Mean	0.70	A			

Data Source: Value Line Investment Survey, 2016.

### *Value Line Risk Metrics*

#### **Beta**

A relative measure of the historical sensitivity of a stock's price to overall fluctuations in the New York Stock Exchange Composite Index. A of 1.50 indicates a stock tends to rise (or fall) 50% more than the New York Stock Exchange Composite Index. The "coefficient" is derived from a regression analysis of the relationship between weekly percent-age changes in the price of a stock and weekly percentage changes in the NYSE Index over a period of five years. In the case of shorter price histories, a smaller time period is used, but two years is the minimum. Betas are adjusted for their long-term tendency to converge toward 1.00.

#### **Financial Strength**

A relative measure of of the companies reviewed by Value Line. The relative ratings range from A++ (strongest) down to C (weakest).

#### **Safety Rank**

A measurement of potential risk associated with individual common stocks. The Safety Rank is computed by averaging two other Value Line indexes the Price Stability Index and the Financial strength Rating. Safety Ranks range from 1 (Highest) to 5 (Lowest). Conservative investors should try to limit their purchases to equities ranked 1 (Highest) and 2 (Above Average) for Safety.

#### **Earnings Predictability**

A measure of the reliability of an earnings forecast. Earnings Predictability is based upon the stability of year-to-year comparisons, with recent years being weighted more heavily than earlier ones. The most reliable forecasts tend to be those with the highest rating (100); the least reliable, the lowest (5). The earnings stability is derived from the standard deviation of percentage changes in quarterly earnings over an eight-year period. Special adjustments are made for comparisons around zero and from plus to minus.

#### **Stock Price Stability**

A measure of the stability of a stock's price It includes sensitivity to the market (see Beta as well as the stock's inherent volatility. Value Line Stability ratings range from 1 (highest) to 5 (lowest).

Exhibit JRW--5

**Gulf Power Company**  
**Capital Structure Ratios and Debt Cost Rates**

**Panel A -Gulf Power's Proposed Regulatory Capitalization and Senior Capital Cost Rates**

Capital	Capitalization Amounts	Capitalization Ratios	Cost Rate	Weighted Cost Rate
Short-Term Debt	28,504	1.18	3.02	0.04
Long-Term Debt	732,273	30.27	4.40	1.33
Preferred Stock	94,609	3.91	6.15	0.24
Common Equity	969,275	40.07	11.00	4.41
Customer Deposits	24,536	1.01	2.30	0.02
Deferred Income Taxes	603,001	24.93	0.00	0.00
ASC 740 Deferred Taxes	(34,002)	-1.40	0.00	0.00
Investment Credit - Weighted	721	0.03	8.05	0.00
<b>Totals</b>	<b>\$ 2,418,917</b>	<b>100.00%</b>		<b>6.04%</b>

Source: MFR D-1a

**Gulf Power's Proposed Capitalization and Senior Capital Cost Rates - Investor Provided Capital**

Capital	Capitalization Amounts	Capitalization Ratios	Cost Rate	Weighted Cost Rate
Short-Term Debt	\$ 28,504	1.56%	3.02%	0.05%
Long-Term Debt	\$ 732,273	40.13%	4.40%	1.77%
Preferred Stock	\$ 94,609	5.19%	6.15%	0.32%
Common Equity	\$ 969,275	53.12%	11.00%	5.84%
<b>Totals</b>	<b>\$ 1,824,661</b>	<b>100.00%</b>		<b>7.98%</b>

**Panel B -OPC's Proposed Regulatory Capitalization and Senior Capital Cost Rates**

Capital	Capitalization Amounts	Capitalization Ratios	Cost Rate	Weighted Cost Rate
Short-Term Debt	\$ 30,402	1.26%	3.02%	0.04%
Long-Term Debt	\$ 781,022	32.29%	4.40%	1.42%
Preferred Stock	\$ 100,907	4.17%	6.15%	0.26%
Common Equity	\$ 912,331	37.72%	9.00%	3.39%
Customer Deposits	\$ 24,536	1.01%	2.30%	0.02%
Deferred Income Taxes	\$ 603,001	24.93%	0.00%	0.00%
ASC 740 Deferred Taxes	\$ (34,002)	-1.41%	0.00%	0.00%
Investment Credit - Weighted	\$ 721	0.03%	6.71%	0.00%
<b>Totals</b>	<b>\$ 2,418,917</b>	<b>100.00%</b>		<b>5.13%</b>

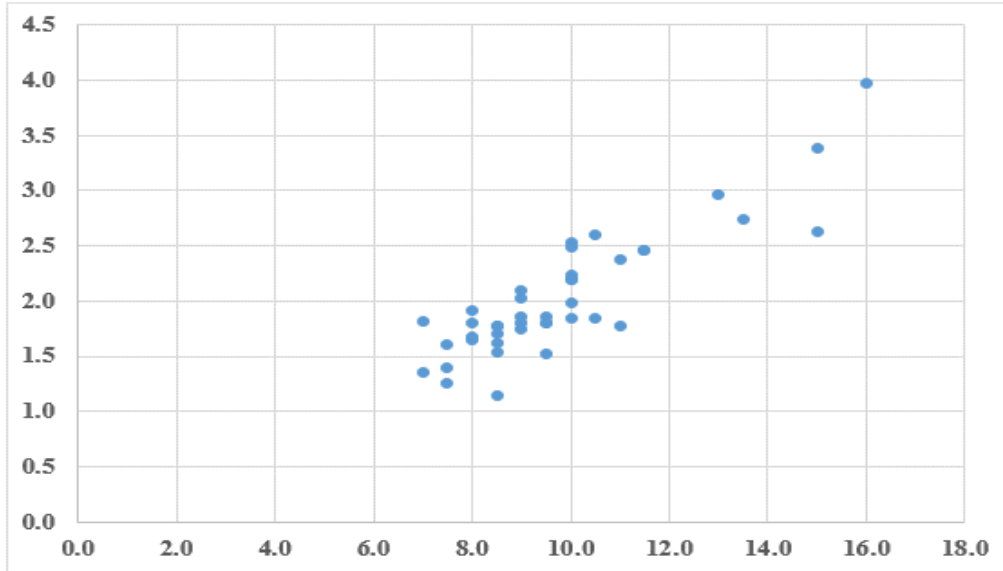
Source: MFR D-1a

**OPC's Proposed Capitalization and Senior Capital Cost Rates - Investor Provided Capital**

Capital	Capitalization Amounts	Capitalization Ratios	Cost Rate	Weighted Cost Rate
Short-Term Debt	\$ 30,402	1.67%	3.02%	0.05%
Long-Term Debt	\$ 781,022	42.80%	4.40%	1.88%
Preferred Stock	\$ 100,907	5.53%	6.15%	0.34%
Common Equity	\$ 912,331	50.00%	8.88%	4.44%
<b>Totals</b>	<b>\$ 1,824,661</b>	<b>100.00%</b>		<b>6.71%</b>

Exhibit JRW--6  
Electric Utilities  
Panel A

Market-to-Book



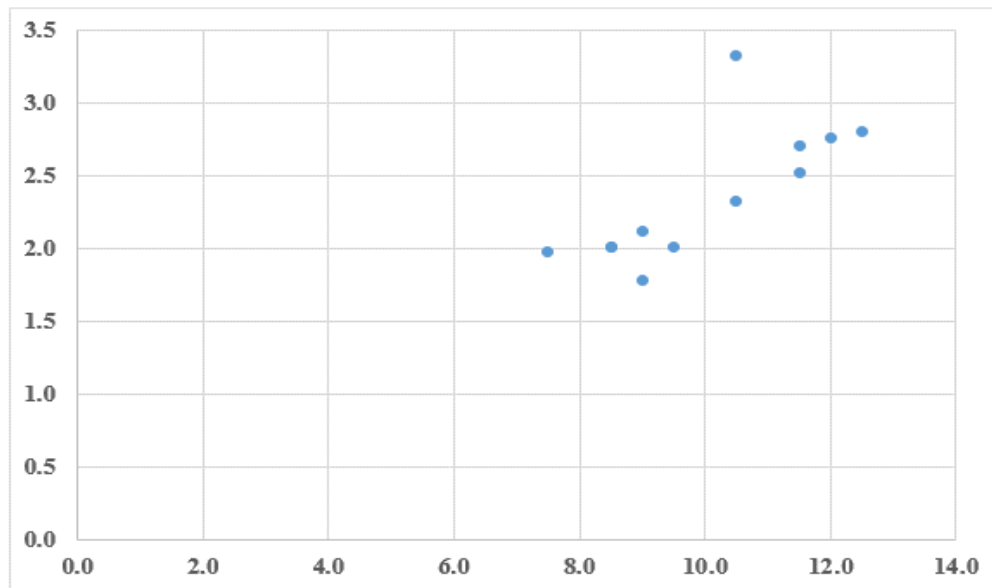
Expected Return on Equity

R-Square = .77, N=42

Source: *Value Line Investment Survey*, 2016.

Panel B  
Gas Companies

Market-to-Book



Expected Return on Equity

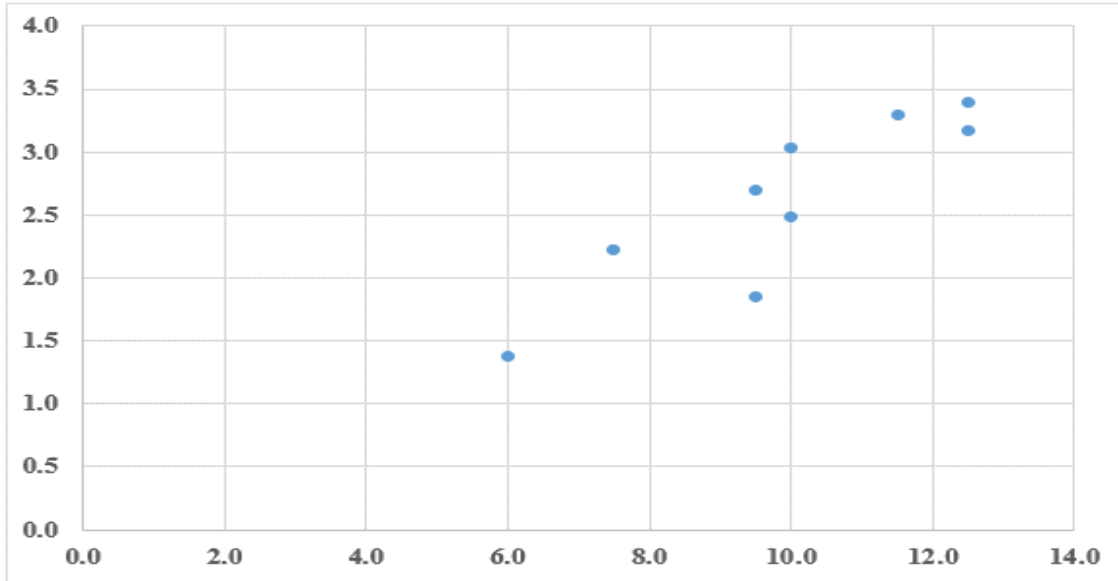
R-Square = .56, N=12

Source: *Value Line Investment Survey*, 2016.



Exhibit JRW--6  
Water Companies  
Panel C

Market-to-Book

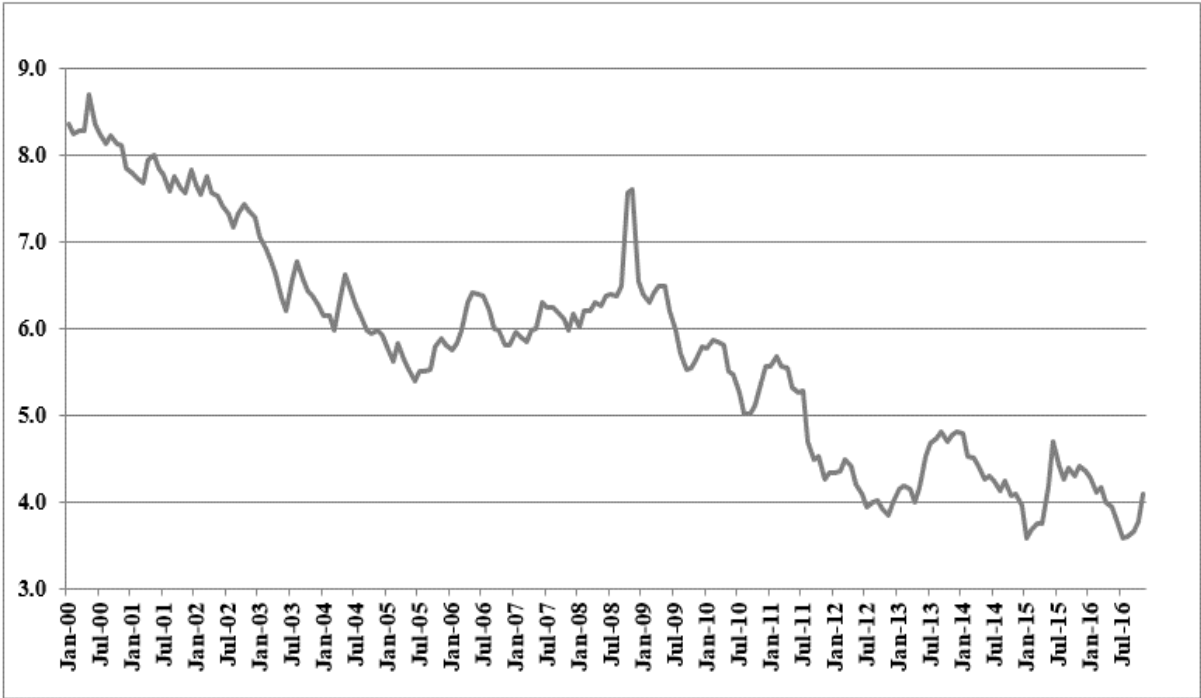


Expected Return on Equity

R-Square = .75, N=9

Source: *Value Line Investment Survey*, 2016.

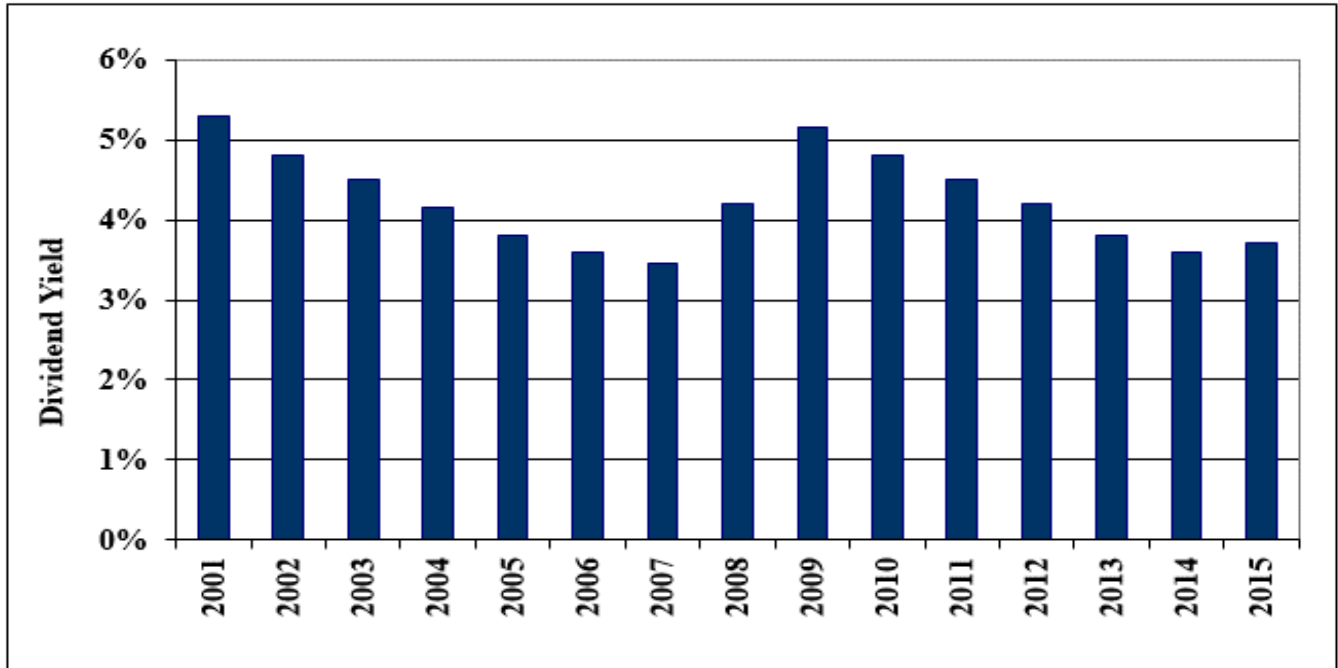
Exhibit JRW--7  
Long-Term 'A' Rated Public Utility Bonds



Data Source: Mergent Bond Record

Exhibit JRW--7

Electric Utility Average Dividend Yield

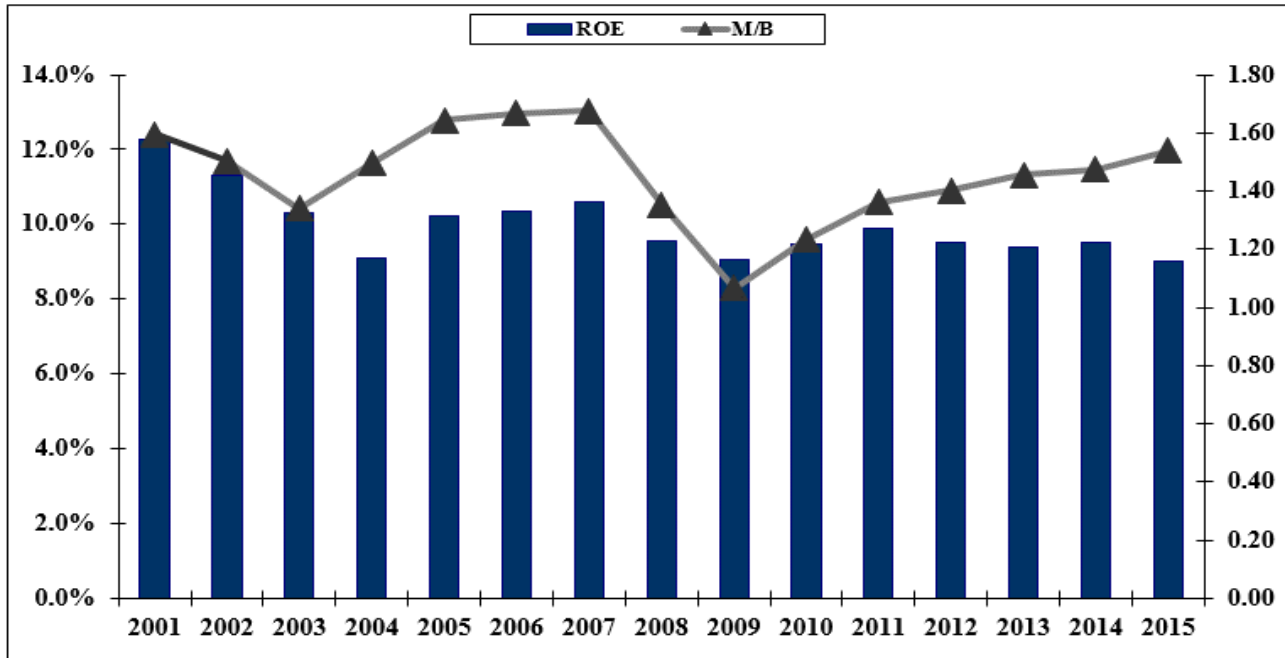


Data Source: *Value Line Investment Survey.*

Data Source: *Value Line Investment Survey.*

Exhibit JRW--7

Electric Utility Average Return on Equity and Market-to-Book Ratios



Data Source: *Value Line Investment Survey*.

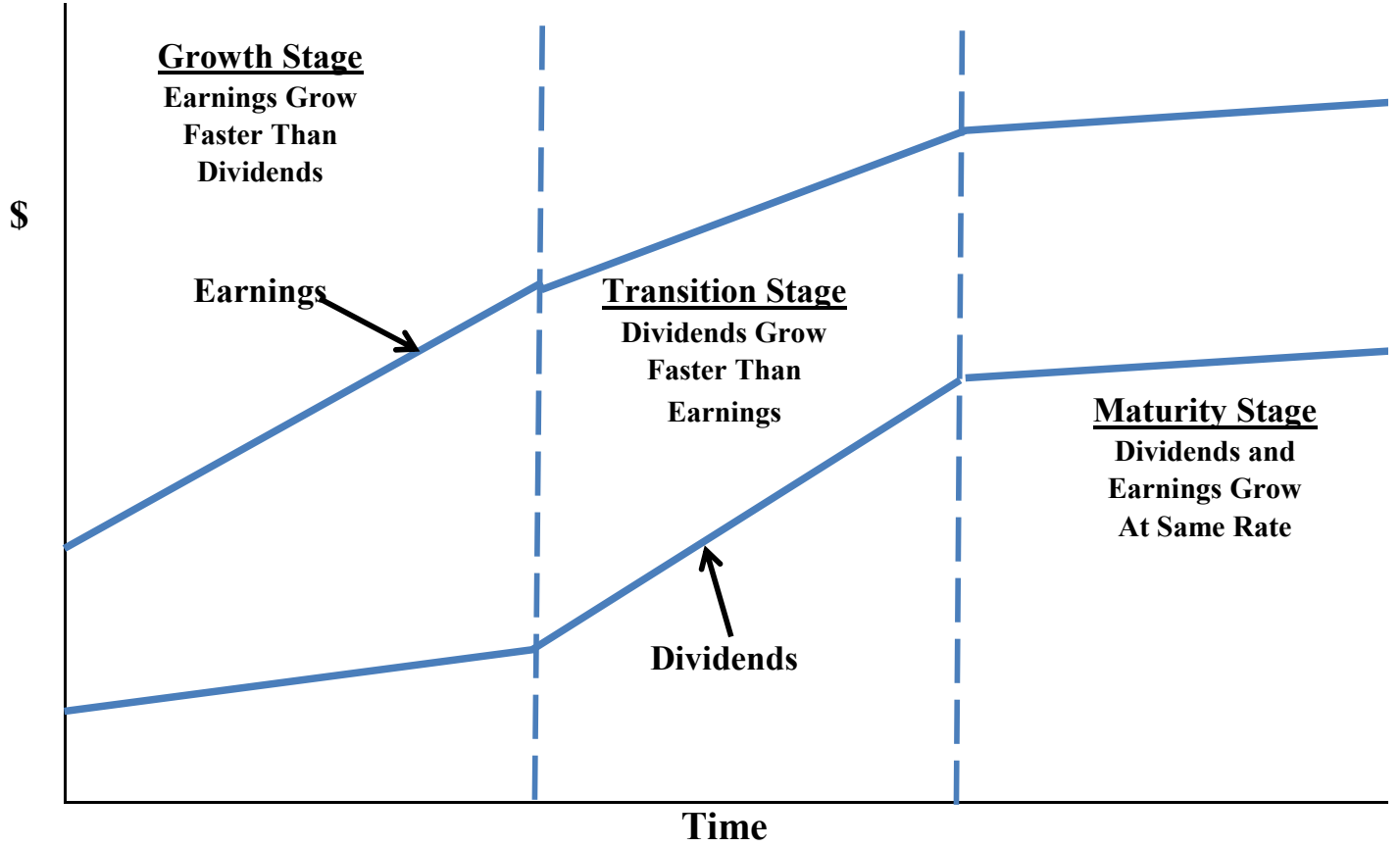
Data Source: *Value Line Investment Survey*.

Exhibit JRW--8

Industry Average Betas

Industry Name	Beta	Industry Name	Beta	Industry Name	Beta
Petroleum (Producing)	1.62	Office Equip/Supplies	1.17	Foreign Electronics	1.01
Maritime	1.54	Furn/Home Furnishings	1.16	Retail (Softlines)	1.00
Homebuilding	1.48	Precision Instrument	1.16	Cable TV	0.99
Oilfield Svcs/Equip.	1.47	Entertainment	1.16	Information Services	0.99
Metals & Mining (Div.)	1.44	Advertising	1.16	Drug	0.99
Steel	1.43	Biotechnology	1.15	Healthcare Information	0.98
Natural Gas (Div.)	1.41	Trucking	1.15	Investment Co.(Foreign)	0.98
Metal Fabricating	1.36	Diversified Co.	1.14	Med Supp Non-Invasive	0.98
Auto Parts	1.35	Financial Svcs. (Div.)	1.14	Telecom. Utility	0.97
Heavy Truck & Equip	1.35	Computer Software	1.14	Precious Metals	0.97
Building Materials	1.34	Internet	1.14	R.E.I.T.	0.96
Engineering & Const	1.30	Newspaper	1.13	Med Supp Invasive	0.96
Hotel/Gaming	1.30	Apparel	1.13	Funeral Services	0.94
Railroad	1.30	Retail (Hardlines)	1.12	Environmental	0.94
Petroleum (Integrated)	1.29	Computers/Peripherals	1.12	Retail Store	0.93
Chemical (Diversified)	1.27	Educational Services	1.11	Restaurant	0.90
Insurance (Life)	1.26	Paper/Forest Products	1.10	Pharmacy Services	0.89
Electrical Equipment	1.26	Wireless Networking	1.10	Thrift	0.89
Public/Private Equity	1.26	Air Transport	1.09	Reinsurance	0.88
Power	1.25	Bank	1.09	Beverage	0.88
Chemical (Specialty)	1.25	Bank (Midwest)	1.08	Food Processing	0.86
Semiconductor	1.24	Recreation	1.07	Insurance (Prop/Cas.)	0.85
Oil/Gas Distribution	1.24	Medical Services	1.06	Investment Co.	0.85
Chemical (Basic)	1.22	Industrial Services	1.06	Household Products	0.84
E-Commerce	1.22	Retail Building Supply	1.06	Retail/Wholesale Food	0.80
Electronics	1.21	Pipeline MLPs	1.05	Tobacco	0.75
Human Resources	1.20	Packaging & Container	1.04	Electric Util. (Central)	0.75
Automotive	1.19	Toiletries/Cosmetics	1.04	Electric Utility (West)	0.74
Machinery	1.19	Shoe	1.02	Natural Gas Utility	0.74
Entertainment Tech	1.18	Retail Automotive	1.02	Water Utility	0.71
Semiconductor Equip	1.18	Telecom. Services	1.01	Electric Utility (East)	0.68
Telecom. Equipment	1.17	IT Services	1.01		
Publishing	1.171	Aerospace/Defense	1.01		

Exhibit JRW--9  
DCF Model



Source: William F. Sharpe, Gordon J. Alexander, and Jeffrey V. Bailey, Investments (Prentice-Hall, 1995), pp. 590-91.

Exhibit JRW--9

DCF Model  
Consensus Earnings Estimates  
Alliant Energy Corp. (LNT)

[www.reuters.com](http://www.reuters.com)

12/9/2016

Line	Date	# of Estimates	Mean	High	Low
1	Quarter Ending Dec-16	3	0.28	0.31	0.24
2	Quarter Ending Mar-17	2	0.44	0.45	0.42
3	Year Ending Dec-16	9	1.88	1.90	1.84
4	Year Ending Dec-17	9	1.99	2.01	1.95
5	LT Growth Rate (%)	1	6.00	6.00	6.00

**Exhibit JRW--10**

**Gulf Power Company  
Discounted Cash Flow Analysis**

**Panel A  
Electric Proxy Group**

<b>Dividend Yield*</b>	<b>3.40%</b>
<b>Adjustment Factor</b>	<b><u>1.025</u></b>
<b>Adjusted Dividend Yield</b>	<b>3.49%</b>
<b>Growth Rate**</b>	<b><u>5.00%</u></b>
<b>Equity Cost Rate</b>	<b>8.50%</b>

\* Page 2 of Exhibit JRW--10

\*\* Based on data provided on pages 3, 4, 5, and  
6 of Exhibit JRW--10

**Panel B  
Vander Weide Proxy Group**

<b>Dividend Yield*</b>	<b>3.40%</b>
<b>Adjustment Factor</b>	<b><u>1.0275</u></b>
<b>Adjusted Dividend Yield</b>	<b>3.49%</b>
<b>Growth Rate**</b>	<b><u>5.50%</u></b>
<b>Equity Cost Rate</b>	<b>9.00%</b>

\* Page 2 of Exhibit JRW--10

\*\* Based on data provided on pages 3, 4, 5, and



Exhibit JRW--10

Gulf Power Company  
 Monthly Dividend Yields

Panel A  
 Electric Proxy Group

Company	Annual Dividend	Dividend Yield 30 Day	Dividend Yield 90 Day	Dividend Yield 180 Day
ALLETE, Inc. (NYSE-ALE)	\$ 2.08	3.4%	3.5%	3.5%
Alliant Energy Corporation (NYSE-LNT)	\$ 1.18	3.2%	3.1%	3.2%
Ameren Corporation (NYSE-AEE)	\$ 1.76	3.6%	3.6%	3.6%
American Electric Power Co. (NYSE-AEP)	\$ 2.36	3.9%	3.7%	3.7%
Avista Corporation (NYSE-AVA)	\$ 1.37	3.4%	3.4%	3.4%
Black Hills Corporation (NYSE-BKH)	\$ 1.68	2.8%	2.8%	2.8%
Consolidated Edison, Inc. (NYSE-ED)	\$ 2.68	3.8%	3.7%	3.6%
CMS Energy Corporation (NYSE-CMS)	\$ 1.24	3.1%	3.0%	3.0%
Dominion Resources, Inc. (NYSE-D)	\$ 2.80	3.9%	3.8%	3.8%
DTE Energy Company (NYSE-DTE)	\$ 3.30	3.5%	3.5%	3.6%
Duke Energy Corporation (NYSE-DUK)	\$ 3.42	4.5%	4.4%	4.4%
Edison International (NYSE-EIX)	\$ 2.17	3.1%	3.0%	3.0%
El Paso Electric Company (NYSE-EE)	\$ 1.24	2.7%	2.7%	2.7%
Entergy Corporation (NYSE-ETR)	\$ 3.48	5.0%	4.7%	4.6%
Eversource Energy (NYSE-ES)	\$ 1.78	3.4%	3.3%	3.2%
FirstEnergy Corporation (ASE-FE)	\$ 1.44	4.5%	4.4%	4.4%
IDACORP, Inc. (NYSE-IDA)	\$ 2.20	2.9%	2.9%	2.9%
MGE Energy, Inc. (NYSE-MGEE)	\$ 1.23	2.1%	2.2%	2.3%
NorthWestern Corporation (NYSE-NWE)	\$ 2.00	3.6%	3.5%	3.4%
OGE Energy Corp. (NYSE-OGE)	\$ 1.21	3.9%	3.9%	4.0%
Otter Tail Corporation (NDQ-OTTR)	\$ 1.25	3.4%	3.5%	3.8%
PG&E Corporation (NYSE-PCG)	\$ 1.96	3.3%	3.2%	3.2%
Pinnacle West Capital Corp. (NYSE-PNW)	\$ 2.62	3.5%	3.5%	3.5%
PNM Resources, Inc. (NYSE-PNM)	\$ 0.88	2.7%	2.7%	2.7%
Portland General Electric Company (NYSE-POR)	\$ 1.28	3.0%	3.0%	3.1%
PPL Corporation (NYSE-PPL)	\$ 1.52	4.6%	4.5%	4.3%
SCANA Corporation (NYSE-SCG)	\$ 2.30	3.3%	3.3%	3.3%
Southern Company (NYSE-SO)	\$ 2.24	4.7%	4.5%	4.5%
WEC Energy Group (NYSE-WEC)	\$ 1.98	3.5%	3.4%	3.3%
Xcel Energy Inc. (NYSE-XEL)	\$ 1.36	3.4%	3.3%	3.3%
Mean		3.5%	3.5%	3.5%
Median		3.4%	3.4%	3.4%

Data Sources: <http://quote.yahoo.com>, December 9, 2016.

Panel B  
 Vander Weide Proxy Group

Company	Annual Dividend	Dividend Yield 30 Day	Dividend Yield 90 Day	Dividend Yield 180 Day
ALLETE, Inc. (NYSE-ALE)	\$ 2.08	3.4%	3.5%	3.5%
Alliant Energy Corporation (NYSE-LNT)	\$ 1.18	3.2%	3.1%	3.2%
Ameren Corporation (NYSE-AEE)	\$ 1.76	3.6%	3.6%	3.6%
American Electric Power Co. (NYSE-AEP)	\$ 2.36	3.9%	3.7%	3.7%
Black Hills Corporation (NYSE-BKH)	\$ 1.68	2.8%	2.8%	2.8%
CenterPoint Energy (NYSE-CNP)	\$ 1.03	4.4%	4.5%	4.6%
CMS Energy Corporation (NYSE-CMS)	\$ 1.24	3.1%	3.0%	3.0%
Dominion Resources, Inc. (NYSE-D)	\$ 2.80	3.9%	3.8%	3.8%
DTE Energy Company (NYSE-DTE)	\$ 3.30	3.5%	3.5%	3.6%
Duke Energy Corporation (NYSE-DUK)	\$ 3.42	4.5%	4.4%	4.4%
Eversource Energy (NYSE-ES)	\$ 1.78	3.4%	3.3%	3.2%
NorthWestern Corporation (NYSE-NWE)	\$ 2.00	3.6%	3.5%	3.4%
PG&E Corporation (NYSE-PCG)	\$ 1.96	3.3%	3.2%	3.2%
Pinnacle West Capital Corp. (NYSE-PNW)	\$ 2.62	3.5%	3.5%	3.5%
PNM Resources, Inc. (NYSE-PNM)	\$ 0.88	2.7%	2.7%	2.7%
Portland General Electric Company (NYSE-POR)	\$ 1.28	3.0%	3.0%	3.1%
PPL Corporation (NYSE-PPL)	\$ 1.52	4.6%	4.5%	4.3%
SCANA Corporation (NYSE-SCG)	\$ 2.30	3.3%	3.3%	3.3%
SEMPRA Energy (NYSE-SRE)	\$ 3.02	3.0%	2.9%	2.9%
Southern Company (NYSE-SO)	\$ 2.24	4.7%	4.5%	4.5%
Vectren Corporation (NYSE-VVC)	\$ 1.68	3.4%	3.4%	3.4%
WEC Energy Group (NYSE-WEC)	\$ 1.98	3.5%	3.4%	3.3%
Xcel Energy Inc. (NYSE-XEL)	\$ 1.36	3.4%	3.3%	3.3%
Mean		3.6%	3.5%	3.5%
Median		3.4%	3.4%	3.4%

Data Sources: <http://quote.yahoo.com>, December 9, 2016.

Exhibit JRW-10

Gulf Power Company  
DCF Equity Cost Growth Rate Measures  
Value Line Historic Growth Rates

Panel A  
Electric Proxy Group

Company	Value Line Historic Growth					
	Past 10 Years			Past 5 Years		
	Earnings	Dividends	Book Value	Earnings	Dividends	Book Value
ALLETE, Inc. (NYSE-ALE)	4.5	9.5	5.5	5.0	2.5	6.0
Alliant Energy Corporation (NYSE-LNT)	6.0	7.0	4.0	7.0	6.5	4.0
Ameren Corporation (NYSE-AEE)	-2.5	-4.5	-0.5	-4.0	-3.0	-3.0
American Electric Power Co. (NYSE-AEP)	2.5	3.0	5.0	3.5	4.0	5.0
Avista Corporation (NYSE-AVA)	7.5	9.5	4.0	4.0	9.0	4.0
Black Hills Corporation (NYSE-BKH)	4.0	2.5	3.0	15.0	2.0	1.5
CMS Energy Corporation (NYSE-CMS)	13.0		2.5	8.5	16.5	4.0
Consolidated Edison, Inc. (NYSE-ED)	3.5	1.0	4.0	3.0	1.5	3.5
Dominion Resources, Inc. (NYSE-D)	5.5	6.5	2.5	1.5	7.0	1.5
DTE Energy Company (NYSE-DTE)	4.5	3.0	4.0	6.5	5.0	4.0
Duke Energy Corporation (NYSE-DUK)				3.0	2.5	3.0
Edison International (NYSE-EIX)	6.5	9.5	6.0	3.5	4.0	1.5
El Paso Electric Company (NYSE-EE)	12.0		8.0	4.0		7.5
Energys Corporation (NYSE-ETR)	3.0	6.0	3.5	-3.0	1.5	3.5
Eversource Energy (NYSE-ES)	9.5	9.5	6.0	6.0	11.0	9.0
FirstEnergy Corporation (ASE-FE)	-2.0	-1.0	1.0	-12.0	-7.5	1.5
IDACORP, Inc. (NYSE-IDA)	9.5	2.5	5.0	8.0	8.0	6.0
MGE Energy, Inc. (NYSE-MGEE)	6.5	2.0	6.0	7.0	2.5	5.5
NorthWestern Corporation (NYSE-NWE)		13.0	4.0	7.0	4.5	7.0
OGE Energy Corp. (NYSE-OGE)	7.5	3.5	8.5	6.5	6.0	8.5
Otter Tail Corporation (NDQ-OTTR)	-0.5	1.0	0.5	15.5	0.5	-3.5
PG&E Corporation (NYSE-PCG)	0.5		7.0	-5.5	1.5	3.5
Pinnacle West Capital Corp. (NYSE-PNW)	4.5	2.5	2.0	8.5	2.0	3.5
PNM Resources, Inc. (NYSE-PNM)	1.0	1.0	1.5	23.5	7.0	3.0
Portland General Electric Company (NYSE-POR)	7.0		2.5	6.5	2.5	3.0
PPL Corporation (NYSE-PPL)	2.5	5.5	5.5	4.0	1.5	4.0
SCANA Corporation (NYSE-SCG)	3.5	3.5	5.0	4.5	2.5	5.0
Southern Company (NYSE-SO)	3.0	4.0	5.0	3.5	3.5	4.0
WEC Energy Group (NYSE-WEC)	8.5	14.0	7.5	8.0	18.5	7.5
Xcel Energy Inc. (NYSE-XEL)	5.0	4.0	4.5	6.0	4.5	4.5
Mean	4.9	4.7	4.2	5.2	4.4	3.9
Median	4.5	3.5	4.0	5.5	3.5	4.0
Average of Median Figures =				4.2		

Data Source: Value Line Investment Survey.

Panel B  
Vander Weide Proxy Group

Company	Value Line Historic Growth					
	Past 10 Years			Past 5 Years		
	Earnings	Dividends	Book Value	Earnings	Dividends	Book Value
ALLETE, Inc. (NYSE-ALE)	4.5	9.5	5.5	5.0	2.5	6.0
Alliant Energy Corporation (NYSE-LNT)	6.0	7.0	4.0	7.0	6.5	4.0
Ameren Corporation (NYSE-AEE)	-2.5	-4.5	-0.5	-4.0	-3.0	-3.0
American Electric Power Co. (NYSE-AEP)	2.5	3.0	5.0	3.5	4.0	5.0
Black Hills Corporation (NYSE-BKH)	4.0	2.5	3.0	15.0	2.0	1.5
CenterPoint Energy (NYSE-CNP)	3.5	8.5	8.0	2.0	4.0	7.5
CMS Energy Corporation (NYSE-CMS)	13.0		2.5	8.5	16.5	4.0
Dominion Resources, Inc. (NYSE-D)	5.5	6.5	2.5	1.5	7.0	1.5
DTE Energy Company (NYSE-DTE)	4.5	3.0	4.0	6.5	5.0	4.0
Duke Energy Corporation (NYSE-DUK)				3.0	2.5	3.0
Eversource Energy (NYSE-ES)	9.5	9.5	6.0	6.0	11.0	9.0
NorthWestern Corporation (NYSE-NWE)		13.0	4.0	7.0	4.5	7.0
PG&E Corporation (NYSE-PCG)	0.5		7.0	-5.5	1.5	3.5
Pinnacle West Capital Corp. (NYSE-PNW)	4.5	2.5	2.0	8.5	2.0	3.5
PNM Resources, Inc. (NYSE-PNM)	1.0	1.0	1.5	23.5	7.0	3.0
Portland General Electric Company (NYSE-POR)	7.0		2.5	6.5	2.5	3.0
PPL Corporation (NYSE-PPL)	2.5	5.5	5.5	4.0	1.5	4.0
SCANA Corporation (NYSE-SCG)	3.5	3.5	5.0	4.5	2.5	5.0
SEMPRA Energy (NYSE-SRE)	3.0	9.5	8.5	1.5	12.0	5.5
Southern Company (NYSE-SO)	3.0	4.0	5.0	3.5	3.5	4.0
Vectren Corporation (NYSE-VVC)	2.5	2.5	3.0	3.5	2.0	2.5
WEC Energy Group (NYSE-WEC)	8.5	14.0	7.5	8.0	18.5	7.5
Xcel Energy Inc. (NYSE-XEL)	5.0	4.0	4.5	6.0	4.5	4.5
Mean	4.4	5.5	4.4	5.4	5.2	4.2
Median	4.0	4.0	4.3	5.0	4.0	4.0
Average of Median Figures =				4.2		

Data Source: Value Line Investment Survey.

Exhibit JRW--10

Gulf Power Company  
DCF Equity Cost Growth Rate Measures  
Value Line Projected Growth Rates

Panel A  
Electric Proxy Group

Company	Value Line Projected Growth			Value Line Sustainable Growth		
	Est'd. '13-'15 to '19-'21			Return on Equity	Retention Rate	Internal Growth
	Earnings	Dividends	Book Value			
ALLETE, Inc. (NYSE-ALE)	4.0	3.5	3.5	9.0%	38.0%	3.4%
Alliant Energy Corporation (NYSE-LNT)	6.0	4.5	4.0	12.5%	39.0%	4.9%
Ameren Corporation (NYSE-AEE)	6.0	4.0	3.5	9.5%	37.0%	3.5%
American Electric Power Co. (NYSE-AEP)	5.0	5.0	3.0	10.5%	36.0%	3.8%
Avista Corporation (NYSE-AVA)	5.0	4.0	3.5	8.5%	35.0%	3.0%
Black Hills Corporation (NYSE-BKH)	7.5	6.0	4.5	10.5%	47.0%	4.9%
CMS Energy Corporation (NYSE-CMS)	6.0	6.5	6.5	13.5%	39.0%	5.3%
Consolidated Edison, Inc. (NYSE-ED)	2.5	3.0	3.5	8.5%	34.0%	2.9%
Dominion Resources, Inc. (NYSE-D)	10.0	8.0	6.0	19.0%	33.0%	6.3%
DTE Energy Company (NYSE-DTE)	6.0	5.5	4.5	10.5%	36.0%	3.8%
Duke Energy Corporation (NYSE-DUK)	4.0	3.5	1.0	8.5%	27.0%	2.3%
Edison International (NYSE-EIX)	3.5	9.5	5.5	11.5%	45.0%	5.2%
El Paso Electric Company (NYSE-EE)	4.0	7.0	4.0	9.0%	41.0%	3.7%
Entergy Corporation (NYSE-ETR)	0.5	2.5	2.0	9.5%	33.0%	3.1%
Eversource Energy (NYSE-ES)	6.0	6.0	4.0	9.5%	42.0%	4.0%
FirstEnergy Corporation (ASE-FE)	6.0	1.0	1.0	8.5%	41.0%	3.5%
IDACORP, Inc. (NYSE-IDA)	3.0	7.5	4.0	9.0%	40.0%	3.6%
MGE Energy, Inc. (NYSE-MGEE)	7.0	4.0	5.0	13.0%	56.0%	7.3%
NorthWestern Corporation (NYSE-NWE)	6.5	5.5	4.5	10.0%	42.0%	4.2%
OGE Energy Corp. (NYSE-OGE)	3.0	9.5	3.5	11.5%	26.0%	3.0%
Otter Tail Corporation (NDQ-OTTR)	6.0	1.5	5.5	10.0%	36.0%	3.6%
PG&E Corporation (NYSE-PCG)	12.0	7.0	4.5	11.0%	41.0%	4.5%
Pinnacle West Capital Corp. (NYSE-PNW)	4.0	5.0	3.5	10.0%	36.0%	3.6%
PNM Resources, Inc. (NYSE-PNM)	9.0	10.0	3.5	9.5%	45.0%	4.3%
Portland General Electric Company (NYSE-POR)	5.5	6.0	3.5	9.0%	41.0%	3.7%
PPL Corporation (NYSE-PPL)	NMF	3.0	NMF	13.5%	31.0%	4.2%
SCANA Corporation (NYSE-SCG)	4.5	5.0	5.0	10.0%	43.0%	4.3%
Southern Company (NYSE-SO)	4.0	3.5	6.5	11.0%	28.0%	3.1%
WEC Energy Group (NYSE-WEC)	6.0	7.0	7.0	11.0%	33.0%	3.6%
Xcel Energy Inc. (NYSE-XEL)	5.5	6.0	4.0	11.0%	38.0%	4.2%
Mean	5.4	5.3	4.1	10.6%	38.0%	4.0%
Median	5.5	5.3	4.0	10.0%	38.0%	3.7%
Average of Median Figures =		4.9			Median =	3.7%

\* 'Est'd. '13-'15 to '19-'21' is the estimated growth rate from the base period 2013 to 2015 until the future period 2019 to 2021.

Data Source: Value Line Investment Survey.

Panel B  
Vander Weide Proxy Group

Company	Value Line Projected Growth			Value Line Sustainable Growth		
	Est'd. '13-'15 to '19-'21			Return on Equity	Retention Rate	Internal Growth
	Earnings	Dividends	Book Value			
ALLETE, Inc. (NYSE-ALE)	4.0	3.5	3.5	9.0%	38.0%	3.4%
Alliant Energy Corporation (NYSE-LNT)	6.0	4.5	4.0	12.5%	39.0%	4.9%
Ameren Corporation (NYSE-AEE)	6.0	4.0	3.5	9.5%	37.0%	3.5%
American Electric Power Co. (NYSE-AEP)	5.0	5.0	3.0	10.5%	36.0%	3.8%
Black Hills Corporation (NYSE-BKH)	7.5	6.0	4.5	10.5%	47.0%	4.9%
CenterPoint Energy (NYSE-CNP)	2.0	4.5	-1.0	15.5%	15.0%	2.3%
CMS Energy Corporation (NYSE-CMS)	6.0	6.5	6.5	13.5%	39.0%	5.3%
Dominion Resources, Inc. (NYSE-D)	10.0	8.0	6.0	19.0%	33.0%	6.3%
DTE Energy Company (NYSE-DTE)	6.0	5.5	4.5	10.5%	36.0%	3.8%
Duke Energy Corporation (NYSE-DUK)	4.0	3.5	1.0	8.5%	27.0%	2.3%
Eversource Energy (NYSE-ES)	6.0	6.0	4.0	9.5%	42.0%	4.0%
NorthWestern Corporation (NYSE-NWE)	6.5	5.5	4.5	10.0%	42.0%	4.2%
PG&E Corporation (NYSE-PCG)	12.0	7.0	4.5	11.0%	41.0%	4.5%
Pinnacle West Capital Corp. (NYSE-PNW)	4.0	5.0	3.5	10.0%	36.0%	3.6%
PNM Resources, Inc. (NYSE-PNM)	9.0	10.0	3.5	9.5%	45.0%	4.3%
Portland General Electric Company (NYSE-POR)	5.5	6.0	3.5	9.0%	41.0%	3.7%
PPL Corporation (NYSE-PPL)	NMF	3.0	NMF	13.5%	31.0%	4.2%
SCANA Corporation (NYSE-SCG)	4.5	5.0	5.0	10.0%	43.0%	4.3%
SEMPRA Energy (NYSE-SRE)	8.0	7.0	3.0	14.0%	47.0%	6.6%
Southern Company (NYSE-SO)	4.0	3.5	6.5	11.0%	28.0%	3.1%
Vectren Corporation (NYSE-VVC)	9.0	5.0	5.0	13.0%	42.0%	5.5%
WEC Energy Group (NYSE-WEC)	6.0	7.0	7.0	11.0%	33.0%	3.6%
Xcel Energy Inc. (NYSE-XEL)	5.5	6.0	4.0	11.0%	38.0%	4.2%
Mean	6.2	5.5	4.1	11.4%	37.2%	4.2%
Median	6.0	5.5	4.0	10.5%	38.0%	4.2%
Average of Median Figures =		5.2			Median =	4.2%

\* 'Est'd. '13-'15 to '19-'21' is the estimated growth rate from the base period 2013 to 2015 until the future period 2019 to 2021.

Data Source: Value Line Investment Survey.

## Exhibit JRW--10

**Gulf Power Company**  
**DCF Equity Cost Growth Rate Measures**  
**Analysts Projected EPS Growth Rate Estimates**

**Panel A**  
**Electric Proxy Group**

Company	Yahoo	Reuters	Zacks	Mean
ALLETE, Inc. (NYSE-ALE)	5.0%	5.0%	5.5%	5.2%
Alliant Energy Corporation (NYSE-LNT)	6.0%	6.0%	6.1%	6.0%
Ameren Corporation (NYSE-AEE)	5.7%	5.7%	6.5%	5.9%
American Electric Power Co. (NYSE-AEP)	1.9%	1.9%	5.4%	3.1%
Avista Corporation (NYSE-AVA)	5.7%	NA	5.3%	5.5%
Black Hills Corporation (NYSE-BKH)	7.0%	7.0%	6.0%	6.7%
Consolidated Edison, Inc. (NYSE-ED)	2.1%	2.1%	3.1%	2.4%
CMS Energy Corporation (NYSE-CMS)	7.3%	7.3%	6.0%	6.8%
Dominion Resources, Inc. (NYSE-D)	6.0%	6.0%	5.7%	5.9%
DTE Energy Company (NYSE-DTE)	5.6%	5.6%	5.8%	5.7%
Duke Energy Corporation (NYSE-DUK)	1.7%	1.7%	5.0%	2.8%
Edison International (NYSE-EIX)	2.1%	2.1%	6.1%	3.4%
El Paso Electric Company (NYSE-EE)	7.0%	NA	4.4%	5.7%
Entergy Corporation (NYSE-ETR)	-8.3%	-8.3%	-1.4%	-6.0%
Eversource Energy (NYSE-ES)	6.3%	6.3%	6.3%	6.3%
FirstEnergy Corporation (ASE-FE)	-5.3%	-5.3%	-0.4%	-3.6%
IDACORP, Inc. (NYSE-IDA)	4.1%	4.1%	4.4%	4.2%
MGE Energy, Inc. (NYSE-MGEE)	4.0%	NA	NA	4.0%
NorthWestern Corporation (NYSE-NWE)	4.5%	4.5%	5.0%	4.7%
OGE Energy Corp. (NYSE-OGE)	4.0%	4.0%	5.2%	4.4%
Otter Tail Corporation (NDQ-OTTR)	6.0%	NA	NA	6.0%
PG&E Corporation (NYSE-PCG)	5.8%	5.8%	4.3%	5.3%
Pinnacle West Capital Corp. (NYSE-PNW)	4.6%	4.6%	4.7%	4.6%
PNM Resources, Inc. (NYSE-PNM)	6.9%	6.9%	6.8%	6.8%
Portland General Electric Company (NYSE-POR)	6.7%	6.7%	6.3%	6.6%
PPL Corporation (NYSE-PPL)	2.4%	2.4%	3.5%	2.8%
SCANA Corporation (NYSE-SCG)	6.0%	6.0%	5.5%	5.8%
Southern Company (NYSE-SO)	3.3%	3.8%	4.1%	3.7%
WEC Energy Group (NYSE-WEC)	6.9%	6.8%	6.2%	6.6%
Xcel Energy Inc. (NYSE-XEL)	5.7%	5.3%	5.4%	5.5%
	4.3%	4.0%	4.7%	4.4%
	5.6%	5.0%	5.3%	5.4%

Data Sources: www.reuters.com, www.zacks.com, http://quote.yahoo.com, December 9, 2016.

**Panel B**  
**Vander Weide Proxy Group**

Company	Yahoo	Reuters	Zacks	Mean
ALLETE, Inc. (NYSE-ALE)	5.0%	5.0%	5.5%	5.2%
Alliant Energy Corporation (NYSE-LNT)	6.0%	6.0%	6.1%	6.0%
Ameren Corporation (NYSE-AEE)	5.7%	5.7%	6.5%	5.9%
American Electric Power Co. (NYSE-AEP)	1.9%	1.9%	5.4%	3.1%
Black Hills Corporation (NYSE-BKH)	7.0%	7.0%	6.0%	6.7%
CenterPoint Energy (NYSE-CNP)	6.1%	6.1%	5.0%	5.7%
CMS Energy Corporation (NYSE-CMS)	7.3%	7.3%	6.0%	6.8%
Dominion Resources, Inc. (NYSE-D)	6.0%	6.0%	5.7%	5.9%
DTE Energy Company (NYSE-DTE)	5.6%	5.6%	5.8%	5.7%
Duke Energy Corporation (NYSE-DUK)	1.7%	1.7%	5.0%	2.8%
Eversource Energy (NYSE-ES)	6.3%	6.3%	6.3%	6.3%
NorthWestern Corporation (NYSE-NWE)	4.5%	4.5%	5.0%	4.7%
PG&E Corporation (NYSE-PCG)	5.8%	5.8%	4.3%	5.3%
Pinnacle West Capital Corp. (NYSE-PNW)	4.6%	4.6%	4.7%	4.6%
PNM Resources, Inc. (NYSE-PNM)	6.9%	6.9%	6.8%	6.8%
Portland General Electric Company (NYSE-POR)	6.7%	6.7%	6.3%	6.6%
PPL Corporation (NYSE-PPL)	2.4%	2.4%	3.5%	2.8%
SCANA Corporation (NYSE-SCG)	6.0%	6.0%	5.5%	5.8%
SEMPRA Energy (NYSE-SRE)	6.5%	7.7%	6.9%	7.0%
Southern Company (NYSE-SO)	3.3%	3.8%	4.1%	3.7%
Vectren Corporation (NYSE-VVC)	4.6%	5.0%	5.3%	5.0%
WEC Energy Group (NYSE-WEC)	6.9%	6.8%	6.2%	6.6%
Xcel Energy Inc. (NYSE-XEL)	5.7%	5.3%	5.4%	5.5%
	4.3%	4.0%	4.7%	5.4%
	5.6%	5.0%	5.3%	5.7%

Data Sources: www.reuters.com, www.zacks.com, http://quote.yahoo.com, December 9, 2016.

Exhibit JRW--10

Gulf Power Company  
 DCF Growth Rate Indicators

Electric and Vander Weide Proxy Groups

Growth Rate Indicator	Electric Proxy Group	Vander Weide Proxy Group
Historic <i>Value Line</i> Growth in EPS, DPS, and BVPS	4.2%	4.2%
Projected <i>Value Line</i> Growth in EPS, DPS, and BVPS	4.9%	5.2%
Sustainable Growth ROE * Retention Rate	3.7%	4.2%
Projected EPS Growth from Yahoo, Zacks, and Reuters - Mean/Median	4.4%/5.4%	5.4%/5.7%

**Exhibit JRW--11**

**Gulf Power Company  
Capital Asset Pricing Model**

**Panel A  
Electric Proxy Group**

<b>Risk-Free Interest Rate</b>	<b>4.00%</b>
<b>Beta*</b>	<b>0.70</b>
<b><u>Ex Ante Equity Risk Premium**</u></b>	<b><u>5.50%</u></b>
<b>CAPM Cost of Equity</b>	<b>7.9%</b>

\* See page 3 of Exhibit JRW--11

\*\* See pages 5 and 6 of Exhibit JRW--11

**Panel B  
Vander Weide Proxy Group**

<b>Risk-Free Interest Rate</b>	<b>4.00%</b>
<b>Beta*</b>	<b>0.70</b>
<b><u>Ex Ante Equity Risk Premium**</u></b>	<b><u>5.50%</u></b>
<b>CAPM Cost of Equity</b>	<b>7.9%</b>

\* See page 3 of Exhibit JRW--11

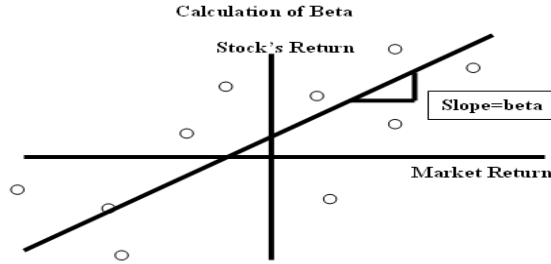
\*\* See pages 5 and 6 of Exhibit JRW--11

Exhibit JRW--11

Thirty-Year U.S. Treasury Yields  
2011-2016



Source: Federal Reserve Bank of St. Louis, FRED Database.



Panel A  
 Electric Proxy Group

Company Name	Beta
ALLETE, Inc. (NYSE-ALE)	0.75
Alliant Energy Corporation (NYSE-LNT)	0.75
Ameren Corporation (NYSE-AEE)	0.70
American Electric Power Co. (NYSE-AEP)	0.65
Avista Corporation (NYSE-AVA)	0.70
Black Hills Corporation (NYSE-BKH)	0.90
CMS Energy Corporation (NYSE-CMS)	0.65
Consolidated Edison, Inc. (NYSE-ED)	0.55
Dominion Resources, Inc. (NYSE-D)	0.70
DTE Energy Company (NYSE-DTE)	0.70
Duke Energy Corporation (NYSE-DUK)	0.60
Edison International (NYSE-EIX)	0.65
El Paso Electric Company (NYSE-EE)	0.70
Energy Corporation (NYSE-ETR)	0.65
Eversource Energy (NYSE-ES)	0.70
FirstEnergy Corporation (ASE-FE)	0.65
IDACORP, Inc. (NYSE-IDA)	0.75
MGE Energy, Inc. (NYSE-MGEE)	0.70
NorthWestern Corporation (NYSE-NWE)	0.70
OGE Energy Corp. (NYSE-OGE)	0.90
Otter Tail Corporation (NDQ-OTTR)	0.85
PG&E Corporation (NYSE-PCG)	0.65
Pinnacle West Capital Corp. (NYSE-PNW)	0.70
PNM Resources, Inc. (NYSE-PNM)	0.75
Portland General Electric Company (NYSE-POR)	0.70
PPL Corporation (NYSE-PPL)	0.70
SCANA Corporation (NYSE-SCG)	0.70
Southern Company (NYSE-SO)	0.55
WEC Energy Group (NYSE-WEC)	0.65
Xcel Energy Inc. (NYSE-XEL)	0.60
Mean	0.70
Median	0.70

Data Source: Value Line Investment Survey, 2016.

Panel B  
 Vander Weide Proxy Group

Company Name	Beta
ALLETE, Inc. (NYSE-ALE)	0.75
Alliant Energy Corporation (NYSE-LNT)	0.75
Ameren Corporation (NYSE-AEE)	0.70
American Electric Power Co. (NYSE-AEP)	0.65
Black Hills Corporation (NYSE-BKH)	0.90
CenterPoint Energy (NYSE-CNP)	0.80
CMS Energy Corporation (NYSE-CMS)	0.65
Dominion Resources, Inc. (NYSE-D)	0.70
DTE Energy Company (NYSE-DTE)	0.70
Duke Energy Corporation (NYSE-DUK)	0.60
Eversource Energy (NYSE-ES)	0.70
NorthWestern Corporation (NYSE-NWE)	0.70
PG&E Corporation (NYSE-PCG)	0.65
Pinnacle West Capital Corp. (NYSE-PNW)	0.70
PNM Resources, Inc. (NYSE-PNM)	0.75
Portland General Electric Company (NYSE-POR)	0.70
PPL Corporation (NYSE-PPL)	0.70
SCANA Corporation (NYSE-SCG)	0.70
SEMPRA Energy (NYSE-SRE)	0.80
Southern Company (NYSE-SO)	0.55
Vectren Corporation (NYSE-VVC)	0.75
WEC Energy Group (NYSE-WEC)	0.65
Xcel Energy Inc. (NYSE-XEL)	0.60
Mean	0.70
Median	0.70

Data Source: Value Line Investment Survey, 2016.



**Exhibit JRW--11  
 Risk Premium Approaches**

	<b>Historical Ex Post Returns</b>	<b>Surveys</b>	<b>Expected Return Models and Market Data</b>
<b>Means of Assessing The Market Risk Premium</b>	Historical Average Stock Minus Bond Returns	Surveys of CFOs, Financial Forecasters, Companies, Analysts on Expected Returns and Market Risk Premiums	Use Market Prices and Market Fundamentals (such as Growth Rates) to Compute Expected Returns and Market Risk Premiums
<b>Problems/Debated Issues</b>	Time Variation in Required Returns, Measurement and Time Period Issues, and Biases such as Market and Company Survivorship Bias	Questions Regarding Survey Histories, Responses, and Representativeness  Surveys may be Subject to Biases, such as Extrapolation	Assumptions Regarding Expectations, Especially Growth

Source: Adapted from Antti Ilmanen, "Expected Returns on Stocks and Bonds," *Journal of Portfolio Management*, (Winter 2003).

Exhibit JRW-11  
 Capital Asset Pricing Model  
 Equity Risk Premium

Category	Study Authors	Publication Date	Time Period Of Study	Methodology	Return Measure	Range		Midpoint of Range	Mean	Median	
						Low	High				
<b>Historical Risk Premium</b>											
	Ibbotson	2016	1928-2015	Historical Stock Returns - Bond Returns	Arithmetic				6.00%		
					Geometric				4.40%		
	Damodaran	2015	1928-2014	Historical Stock Returns - Bond Returns	Arithmetic				6.25%		
					Geometric				4.60%		
	Dimson, Marsh, Staunton	2015	1900-2014	Historical Stock Returns - Bond Returns	Arithmetic				4.40%		
					Geometric				4.50%		
	Bate	2008	1900-2007	Historical Stock Returns - Bond Returns	Arithmetic				7.00%		
					Geometric				5.50%		
	Shiller	2006	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				6.10%		
					Geometric				4.60%		
	Siegel	2005	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				5.50%		
					Geometric				4.60%		
	Dimson, Marsh, and Staunton	2006	1900-2005	Historical Stock Returns - Bond Returns	Arithmetic				5.50%		
					Geometric				4.77%		
	Goyal & Welch	2006	1872-2004	Historical Stock Returns - Bond Returns							
	Median									5.14%	
<b>Ex Ante Models (Puzzle Research)</b>											
	Claus Thomas	2001	1985-1998	Abnormal Earnings Model					3.00%		
	Arnott and Bernstein	2002	1810-2001	Fundamentals - Div Yld + Growth					2.40%		
	Constantinides	2002	1872-2000	Historical Returns & Fundamentals - P/D & P/E					6.90%		
	Cornell	1999	1926-1997	Historical Returns & Fundamental GDP/Earnings		3.50%	5.50%	4.50%	4.50%		
	Easton, Taylor, et al	2002	1981-1998	Residual Income Model					5.30%		
	Fama French	2002	1951-2000	Fundamental DCF with EPS and DPS Growth		2.55%	4.32%		3.44%		
	Harris & Marston	2001	1982-1998	Fundamental DCF with Analysts' EPS Growth					7.14%		
	Best & Byrne	2001									
	McKinsey	2002	1962-2002	Fundamental (P/E, D/P, & Earnings Growth)		3.50%	4.00%		3.75%		
	Siegel	2005	1802-2001	Historical Earnings Yield	Geometric				2.50%		
	Grabowski	2006	1926-2005	Historical and Projected		3.50%	6.00%	4.75%	4.75%		
	Maheu & McCurdy	2006	1885-2003	Historical Excess Returns, Structural Breaks,		4.02%	5.10%	4.56%	4.56%		
	Bostock	2004	1960-2002	Bond Yields, Credit Risk, and Income Volatility		3.90%	1.30%	2.60%	2.60%		
	Bakshi & Chen	2005	1982-1998	Fundamentals - Interest Rates					7.31%		
	Donaldson, Kamstra, & Kramer	2006	1952-2004	Fundamental, Dividend yld, Returns, & Volatility		3.00%	4.00%	3.50%	3.50%		
	Campbell	2008	1982-2007	Historical & Projections (D/P & Earnings Growth)		4.10%	5.40%		4.75%		
	Best & Byrne	2001	Projection	Fundamentals - Div Yld + Growth					2.00%		
	Fernandez	2007	Projection	Required Equity Risk Premium					4.00%		
	DeLong & Magin	2008	Projection	Earnings Yield - TIPS					3.22%		
	Siegel - Rethink ERP	2011	Projection	Real Stock Returns and Components					5.50%		
	Duff & Phelps	2016	Projection	Normalized with 4.0% Long-Term Treasury Yield					5.50%		
	Mschchowski - VL - 2014	2014	Projection	Fundamentals - Expected Return Minus 10-Year Treasury Rate					5.50%		
	American Appraisal Quarterly ERP	2015	Projection	Fundamental Economic and Market Factors					6.00%		
	Damodaran	2016	Projection	Fundamentals - Implied from FCF to Equity Model					5.42%		
	<b>Social Security</b>										
	Office of Chief Actuary		1900-1995								
	John Campbell	2001	1860-2000	Historical & Projections (D/P & Earnings Growth)	Arithmetic	3.00%	4.00%	3.50%	3.50%		
			Projected for 75 Years		Geometric	1.50%	2.50%	2.00%	2.00%		
	Peter Diamond	2001	Projected for 75 Years	Fundamentals (D/P, GDP Growth)		3.00%	4.80%	3.90%	3.90%		
	John Shoven	2001	Projected for 75 Years	Fundamentals (D/P, P/E, GDP Growth)		3.00%	3.50%	3.25%	3.25%		
	Median									4.00%	
<b>Surveys</b>											
	New York Fed	2015	Five-Year	Survey of Wall Street Firms					5.70%		
	Survey of Financial Forecasters	2016	10-Year Projection	About 20 Financial Forecasters					1.90%		
	Duke - CFO Magazine Survey	2016	10-Year Projection	Approximately 500 CFOs					4.25%		
	Welch - Academics	2008	30-Year Projection	Random Academics		5.00%	5.74%	5.37%	5.37%		
	Fernandez - Academics, Analysts, and Compan	2016	Long-Term	Survey of Academics, Analysts, and Companies					5.30%		
	Median									5.30%	
<b>Building Block</b>											
	Ibbotson and Chen	2015	Projection	Historical Supply Model (D/P & Earnings Growth)	Arithmetic			6.22%	5.21%		
					Geometric			4.20%			
	Chen - Rethink ERP	2010	20-Year Projection	Combination Supply Model (Historic and Projection)	Geometric				4.00%		
	Ilmanen - Rethink ERP	2010	Projection	Current Supply Model (D/P & Earnings Growth)	Geometric				3.00%		
	Grinold, Kroner, Siegel - Rethink ERP	2011	Projection	Current Supply Model (D/P & Earnings Growth)	Arithmetic			4.63%	4.12%		
					Geometric			3.60%			
	Woolridge		2015	Current Supply Model (D/P & Earnings Growth)					4.50%		
	Median									4.12%	
<b>Mean</b>										<b>4.64%</b>	
<b>Median</b>										<b>4.63%</b>	



Exhibit JRW--12

Gulf Power Company

Gulf Power's Proposed Capitalization and Senior Capital Cost Rates - Investor Provided Capital

<b>Capital</b>	<b>Capitalization Amounts</b>	<b>Capitalization Ratios</b>	<b>Cost Rate</b>	<b>Weighted Cost Rate</b>
<b>Short-Term Debt</b>	<b>\$ 28,504</b>	<b>1.56%</b>	<b>3.02%</b>	<b>0.05%</b>
<b>Long-Term Debt</b>	<b>\$ 732,273</b>	<b>40.13%</b>	<b>4.40%</b>	<b>1.77%</b>
<b>Preferred Stock</b>	<b>\$ 94,609</b>	<b>5.19%</b>	<b>6.15%</b>	<b>0.32%</b>
<b>Common Equity</b>	<b>\$ 969,275</b>	<b>53.12%</b>	<b>11.00%</b>	<b>5.84%</b>
<b>Totals</b>	<b>\$ 1,824,661</b>	<b>100.00%</b>		<b>7.98%</b>

Gulf Power Company

Panel A

Summary of Dr. Vander Weide's Equity Cost Rate Approaches and Results

Approach	Electric Utilities
DCF	9.70%
Ex Ante Risk Premium	10.90%
Ex Post Risk Premium	10.60%
CAPM - Historical	10.10%
CAPM - DCF Based	10.80%
Average ROE Result	10.40%
Leverage Adjustment	0.60%
ROE Recommendation	11.00%

Panel B

Summary of Dr. Vander Weide's DCF Results

	Electric Utilities
Average Adjusted Dividend Yield	3.64%
Growth**	5.69%
DCF Result	9.33%
+ Quarterly and Flotation Cost Adjustments*	0.37%
DCF Result	9.70%

\* Adjustments for quarterly payments and flotation costs  
\*\* Expected EPS Growth from IBES

Panel C

Summary of Dr. Vander Weide's Ex Ante Risk Premium Results

	Electric Utilities
Projected 'A' Rated PU Yield	6.20%
Ex Ante Risk Premium*	4.70%
Equity Cost Rate	10.90%

Panel D

Summary of Dr. Vander Weide's Historical Risk Premium Results

	Electric Utilities
Projected 'A' Rated PU Yield	6.20%
Historic Risk Premium*	4.20%
Equity Cost Rate	10.40%
+ Flotation Cost Adjustment	0.20%
Adjusted Risk Premium Result	10.60%

\* Midpoint of 3.9% and 4.5%

Panel E

Summary of Dr. Vander Weide's Historical CAPM Results

	Electric Utilities
<b>Historical CAPM I Result</b>	
Risk-Free Rate	4.20%
Beta	0.75
Equity Risk Premium	6.90%
CAPM I Result	9.40%
+ Flotation Cost Adjustment	0.20%
Adjusted CAPM Result	9.60%
<b>Historical CAPM II Result</b>	
Risk-Free Rate	4.20%
Historical Adjusted Beta	0.90
Equity Risk Premium	6.90%
CAPM II Result	10.40%
+ Flotation Cost Adjustment	0.20%
Adjusted CAPM Result	10.60%
Average of CAPM I and II Results	10.10%

Panel F

Summary of Dr. Vander Weide's Expected CAPM Results

	Utility Proxy Group
<b>Expected CAPM I Result</b>	
Risk-Free Rate	4.20%
Beta	0.75
Equity Risk Premium	7.70%
CAPM Result	10.00%
+ Flotation Cost Adjustment	0.20%
Adjusted CAPM Result	10.20%
<b>Expected CAPM II Result</b>	
Risk-Free Rate	4.20%
Historical Adjusted Beta	0.90
Equity Risk Premium	7.70%
CAPM Result	11.20%
+ Flotation Cost Adjustment	0.20%
Adjusted CAPM Result	11.40%
Average of CAPM I and II Results	10.80%

**Growth Rates**  
**GDP, S&P 500 Price, EPS, and DPS**

	<b>GDP</b>	<b>S&amp;P 500</b>	<b>Earnings</b>	<b>Dividends</b>	
1960	535.1	58.11	3.10	1.98	
1961	547.6	71.55	3.37	2.04	
1962	586.9	63.10	3.67	2.15	
1963	619.3	75.02	4.13	2.35	
1964	662.9	84.75	4.76	2.58	
1965	710.7	92.43	5.30	2.83	
1966	781.9	80.33	5.41	2.88	
1967	838.2	96.47	5.46	2.98	
1968	899.3	103.86	5.72	3.04	
1969	982.3	92.06	6.10	3.24	
1970	1049.1	92.15	5.51	3.19	
1971	1119.3	102.09	5.57	3.16	
1972	1219.5	118.05	6.17	3.19	
1973	1356.0	97.55	7.96	3.61	
1974	1486.2	68.56	9.35	3.72	
1975	1610.6	90.19	7.71	3.73	
1976	1790.3	107.46	9.75	4.22	
1977	2028.4	95.10	10.87	4.86	
1978	2278.2	96.11	11.64	5.18	
1979	2570.0	107.94	14.55	5.97	
1980	2796.8	135.76	14.99	6.44	
1981	3138.4	122.55	15.18	6.83	
1982	3313.9	140.64	13.82	6.93	
1983	3541.1	164.93	13.29	7.12	
1984	3952.8	167.24	16.84	7.83	
1985	4270.4	211.28	15.68	8.20	
1986	4536.1	242.17	14.43	8.19	
1987	4781.9	247.08	16.04	9.17	
1988	5155.1	277.72	24.12	10.22	
1989	5570.0	353.40	24.32	11.73	
1990	5914.6	330.22	22.65	12.35	
1991	6110.1	417.09	19.30	12.97	
1992	6434.7	435.71	20.87	12.64	
1993	6794.9	466.45	26.90	12.69	
1994	7197.8	459.27	31.75	13.36	
1995	7583.4	615.93	37.70	14.17	
1996	7978.3	740.74	40.63	14.89	
1997	8483.2	970.43	44.09	15.52	
1998	8954.8	1229.23	44.27	16.20	
1999	9510.5	1469.25	51.68	16.71	
2000	10148.2	1320.28	56.13	16.27	
2001	10564.6	1148.09	38.85	15.74	
2002	10876.9	879.82	46.04	16.08	
2003	11332.4	1111.91	54.69	17.88	
2004	12088.6	1211.92	67.68	19.41	
2005	12888.9	1248.29	76.45	22.38	
2006	13684.7	1418.30	87.72	25.05	
2007	14322.9	1468.36	82.54	27.73	
2008	14752.4	903.25	65.39	28.05	
2009	14414.6	1115.10	59.65	22.31	
2010	14798.5	1257.64	83.66	23.12	
2011	15379.2	1257.60	97.05	26.02	<b>Average</b>
2012	16027.2	1426.19	102.47	30.44	
2013	16498.1	1848.36	107.45	36.28	
2014	17183.5	2058.90	113.01	39.44	
2015	17803.4	2043.94	106.32	43.16	
<b>Growth Rate</b>	<b>6.58</b>	<b>6.69</b>	<b>6.64</b>	<b>5.76</b>	<b>6.42</b>

Data Sources: GDPA - <http://research.stlouisfed.org/fred2/series/GDPA/downloaddata>  
S&P 500, EPS and DPS - <http://pages.stern.nyu.edu/~adamodar/>

**Panel A**  
**Historic GDP Growth Rates**

<b>10-Year Average</b>		<b>3.28%</b>
<b>20-Year Average</b>		<b>4.36%</b>
<b>30-Year Average</b>		<b>4.87%</b>
<b>40-Year Average</b>		<b>6.19%</b>
<b>50-Year Average</b>		<b>6.65%</b>

Calculated using GDP data on Page 1 of Exhibit JRW--14

**Panel B**  
**Projected GDP Growth Rates**

	<b>Projected Nominal GDP Time Frame Growth Rate</b>	
<b>Congressional Budget Office</b>	<b>2016-2026</b>	<b>4.1%</b>
<b>Survey of Financial Forecasters</b>	<b>Ten Year</b>	<b>4.5%</b>
<b>Social Security Administration</b>	<b>2016-2090</b>	<b>4.4%</b>
<b>Energy Information Administration</b>	<b>2015-2040</b>	<b>4.3%</b>

**Sources:**

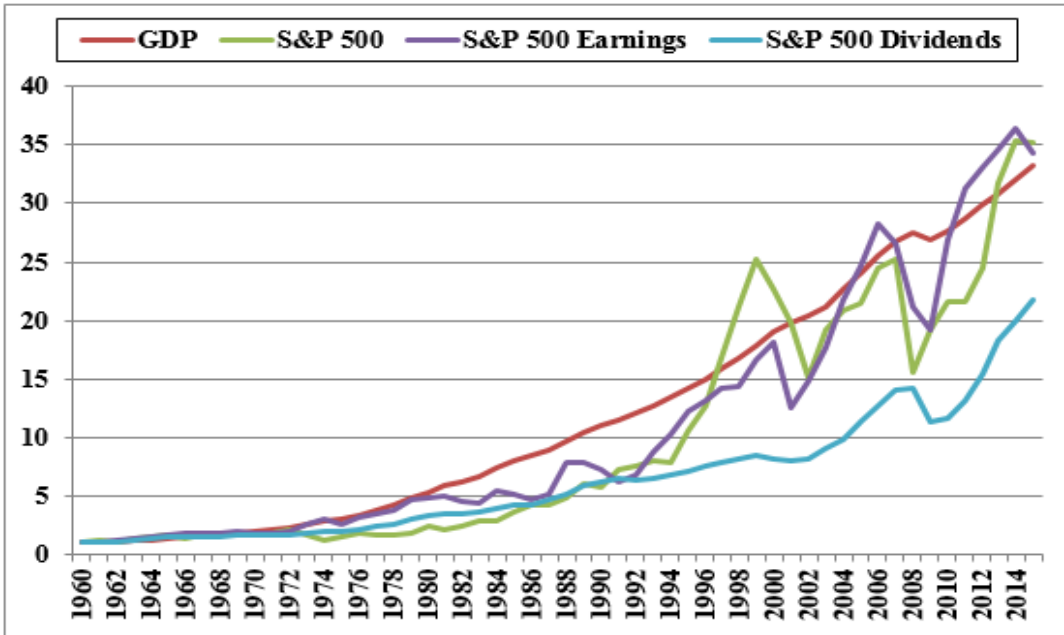
[www.cbo.gov/publication/51129](http://www.cbo.gov/publication/51129)

[http://www.eia.gov/forecasts/aeo/tables\\_ref.cfm](http://www.eia.gov/forecasts/aeo/tables_ref.cfm) Table 20

<http://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters>

[http://www.ssa.gov/oact/tr/2016/X1\\_trLOT.html](http://www.ssa.gov/oact/tr/2016/X1_trLOT.html)

Long-Term Growth of GDP, S&P 500, S&P 500 EPS, and S&P 500 DPS



	GDP	S&P 500	S&P 500 EPS	S&P 500 DPS
Growth Rates	6.58%	6.69%	6.64%	5.76%