BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

IN THE MATTER OF THE APPLICATION OF)
OKLAHOMA GAS AND ELECTRIC COMPANY)
FOR AN ORDER OF THE COMMISSION) CAUSE NO. PUD 201700496
AUTHORIZING APPLICANT TO MODIFY ITS)
RATES, CHARGES, AND TARIFFS FOR RETAIL)
ELECTRIC SERVICE IN OKLAHOMA)

RESPONSIVE TESTIMONY AND EXHIBITS

OF

DAVID C. PARCELL

ON BEHALF OF

OKLAHOMA INDUSTRIAL ENERGY CONSUMERS

AND

OKLAHOMA ENERGY RESULTS

May 2, 2018

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I.   INTRODUCTION

Q.   PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A.   My name is David C. Parcell. I am a Principal and Senior Economist of Technical Associates, Inc. My business address is Suite 130, 1503 Santa Rosa Road, Richmond, Virginia 23229.

Q.   PLEASE BRIEFLY DESCRIBE YOUR BACKGROUND AND EXPERIENCE.

A.   I hold B.A. (1969) and M.A. (1970) degrees in economics from Virginia Polytechnic Institute and State University (Virginia Tech) and a M.B.A. (1985) from Virginia Commonwealth University. I have been a consulting economist with Technical Associates since 1970. In connection with this, I have previously filed cost of capital testimony in over 550 public utility ratemaking proceedings before some 50 regulatory agencies in the United States and Canada, including the Oklahoma Corporation Commission ("Commission"). Much of this testimony has been on behalf of commission staffs. Attachment 1 provides a more complete description of my education and relevant work experience.

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

A.   I have been retained by Oklahoma Industrial Energy Consumers ("OIEC") and Oklahoma Energy Results ("OER") to evaluate the cost of capital ("COC") aspects of the current filing of Oklahoma Gas & Electric Company ("OG&E" or "Company"). In connection with this, I have performed independent studies and am making recommendations as to

1   subsidiary of OGE Energy, Inc. ("OGE Energy" or "Parent"), I have also evaluated OGE
2   Energy in my analyses.
3
4 Q. **HAVE YOU PREPARED AN EXHIBIT IN SUPPORT OF YOUR TESTIMONY?**
5 A. Yes, I have prepared one exhibit, labeled Exhibit DCP-1, identified as Schedule 1
6   through Schedule 15. This exhibit was prepared by me. The information contained in
7   this exhibit is correct to the best of my knowledge and belief.
8
9 II. **RECOMMENDATIONS AND SUMMARY**
10
11 Q. **WHAT ARE YOUR RECOMMENDATION IN THIS PROCEEDING?**
12 A. My overall cost of capital recommendations for OG&E are shown on Schedule 1 and are
13   summarized as follows:

Item	Percent	Cost	Weighted Cost
Long-Term Debt	50.00%	5.32%	2.66%
Common Equity	50.00%	8.90-9.50%	4.45-4.75%
Total	100.00%		7.11-7.41%
			7.26% with 9.20% ROE

14
15   OG&E's application requests a COC of 7.763 percent and a cost of equity ("ROE") of
16   9.90 percent.
17
18 Q. **PLEASE SUMMARIZE YOUR ANALYSES AND CONCLUSIONS.**
19 A. This proceeding is concerned with OG&E's regulated electric utility operations in
20   Oklahoma. My analyses concern the Company's COC. The first step in performing
21   these analyses is to develop the appropriate capital structure. OG&E proposes use of
22   capital structure with 46.66 percent long-term debt and 53.34 percent common equity,
23   which is the Company's September 30, 2017 test year capital structure.[1] I do not use this
24   capital structure, which contains an excessive level of common equity relative to other
25   electric utilities. Instead, I propose use of a hypothetical capital structure with 50.00
26   percent common equity and 50.00 percent long-term debt, as developed in my testimony.
27   I note that, in OG&E's most recent rate proceeding (Cause No. 201500273 in 2016) I

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[1]   Company Filing, W/P F-1.

2

1 recommended that the Commission direct OG&E to bring its capital structure more in

2 line with that employed by other electric utilities. In its decision in that proceeding, the

3 Commission indicated that it was concerned with the Company's equity ratio and

4 directed the Company to "evaluate adjusting its equity to debt ratio to maximize the

5 benefits of lower cost debt, similar to that of other utilities."[2] OG&E has not shown any

6 such "evaluation" in its filing and related testimony. I have made such an evaluation and

7 conclude that OG&E's current capital structure contains an excessive level of common

8 equity and, therefore, a more appropriate capital structure for the Company would be to

9 impute equal amounts of debt and equity, which are more in line with that of other public

10 utilities.

11 The second step in a cost of capital calculation is to determine the embedded cost

12 rate of debt. OG&E proposes to use a cost rate of 5.32 percent for long-term debt, the

13 rate as of September 30, 2017.[3] I use this cost rate in my analyses.

14 The third step in the cost of capital calculation is to estimate the ROE. I employ

15 three recognized methodologies to estimate OG&E's ROE, each of which I apply to two

16 proxy groups of electric utilities. These three methodologies and my findings are:

17

	Conclusions	
Methodology	Mid-Point	Range
Discounted Cash Flow ("DCF")	8.90%	8.8-9.0%
Capital Asset Pricing Model ("CAPM")	7.15%	7.0-7.3%
Comparable Earnings ("CE")	9.50%	9.0-10.0%

18

19 Based upon these findings, I conclude that OG&E's ROE is within a range of 8.90

20 percent to 9.50 percent (9.20 percent mid-point), which is based upon the mid-point of

21 my DCF results and mid-point of my CE result models.[4]

22 Combining these three steps results in an overall COC of 7.11 percent to 7.41

23 percent (which incorporates an 8.90 percent to 9.50 percent ROE). My specific COC

24 recommendation is the mid-point of this range, or 7.26 percent (9.20 percent ROE).

25

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[2] Order No. 662059, pages 5 and 6.
[3] Company Filing, W/P F-1.
[4] As I indicate in a later section, my cost of equity recommendation does not directly incorporate the CAPM results, which I believe to be somewhat low at this time, relative to the DCF and CE results.

1   **III.**   <u>**ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES**</u>

2

3   **Q.**   **WHAT ARE THE PRIMARY ECONOMIC AND LEGAL PRINCIPLES THAT**

4   **ESTABLISH THE STANDARDS FOR DETERMINING A FAIR RATE OF**

5   **RETURN FOR A REGULATED UTILITY?**

6   **A.**   Public utility rates are normally established in a manner designed to allow the recovery of

7   their costs, including capital costs. This is frequently referred to as "cost of service"

8   ratemaking. Rates for regulated public utilities traditionally have been primarily

9   established using the "rate base – rate of return" concept. Under this method, utilities are

10   allowed to recover a level of operating expenses, taxes, and depreciation deemed

11   reasonable for rate-setting purposes, and are granted an opportunity to earn a fair rate of

12   return on the assets utilized (i.e., rate base) to provide service to their customers.

13   The rate base is derived from the asset side of the utility's balance sheet as a

14   dollar amount and the rate of return is developed form the liabilities/owners' equity side

15   of the balance sheet as a percentage. Thus, the revenue impact of the cost of capital is

16   derived by multiplying the rate base, including income taxes, by rate of return.

17   The rate of return is developed from the cost of capital, which is estimated by

18   weighting the capital structure components (i.e. debt, preferred stock, and common

19   equity) by their percentages in the capital structure and multiplying these values by their

20   cost rates. This is also known as the weighted cost of capital.

21   Technically, "fair rate of return" is a legal and accounting concept that refers to an

22   *ex post* (after the fact) earned return on an asset base, while the cost of capital is an

23   economic and financial concept which refers to an *ex ante* (before the fact) expected, or

24   required, return on a capital base. In regulatory proceedings, however, the two terms are

25   often used interchangeably, and I have equated the two concepts in my testimony.

26   From an economic standpoint, a fair rate of return is normally interpreted to mean

27   that an efficient and economically managed utility will be able to maintain its financial

28   integrity, attract capital, and establish comparable returns for similar risk investments.

29   These concepts are derived from economic and financial theory and are generally

30   implemented using financial models and economic concepts.

1   Although I am not a lawyer and I do not offer a legal opinion, my testimony is

2   based on my understanding that two United States Supreme Court decisions provide the

3   controlling standards for a fair rate of return. The first decision is *Bluefield Water Works*

4   *and Improvement Co. v. Public Serv. Comm'n of West Virginia*, 262 U.S. 679 (1923). In

5   this decision, the Court stated:

6   The annual rate that will constitute just compensation depends upon many
7   circumstances and must be determined by the exercise of fair and
8   enlightened judgment, having regard to all relevant facts. A public utility
9   is entitled to such rates as will permit it to earn a return on the value of the
10   property which it employs for the convenience of the public equal to that
11   generally being made at the same time and in the same general part of the
12   country on investments in other business undertakings which are attended
13   by corresponding risks and uncertainties; but it has no constitutional right
14   to profits such as are realized or anticipated in highly profitable enterprises
15   or speculative ventures. The return should be reasonably sufficient to
16   assure confidence in the financial soundness of the utility, and should be
17   adequate, under efficient and economical management, to maintain and
18   support its credit and enable it to raise the money necessary for the proper
19   discharge of its public duties. A rate of return may be reasonable at one
20   time, and become too high or too low by changes affecting opportunities
21   for investment, the money market, and business conditions generally.

22   It is generally understood that the *Bluefield* decision established the following

23   standards for a fair rate of return: comparable earnings, financial integrity, and capital

24   attraction. It also noted that required returns change over time, and there is an underlying

25   assumption that the utility be operated efficiently.

26   The second decision is *Federal Power Comm'n v. Hope Natural Gas Co.*, 320

27   U.S. 591 (1942). In that decision, the Court stated:

28   The rate-making process under the [Natural Gas] Act, i.e., the fixing of
29   'just and reasonable' rates, involves a balancing of the investor and
30   consumer interests . . . From the investor or company point of view it is
31   important that there be enough revenue not only for operating expenses
32   but also for the capital costs of the business. These include service on the
33   debt and dividends on the stock. By this standard the return to the equity
34   owner should be commensurate with returns on investments in other
35   enterprises having corresponding risks. That return, moreover, should be
36   sufficient to assure confidence in the financial integrity of the enterprise,
37   so as to maintain its credit and to attract capital.

38   The three economic and financial parameters in the *Bluefield* and *Hope* decisions

39   – comparable earnings, financial integrity, and capital attraction – reflect the economic

5

1   criteria encompassed in the "opportunity cost" principle of economics. The opportunity

2   cost principle provides that a utility and its investors should be afforded an opportunity

3   (not a guarantee) to earn a return commensurate with returns they could expect to achieve

4   on investments of similar risk. The opportunity cost principle is consistent with the

5   fundamental premise on which regulation rests, namely, that it is intended to act as a

6   surrogate for competition.

7

8   Q.   **HOW CAN THE *BLUEFIELD* AND *HOPE* PARAMETERS BE EMPLOYED TO**

9   **ESTIMATE THE COST OF CAPITAL FOR A UTILITY?**

10   A.   Neither the courts nor economic/financial theory has developed exact and mechanical

11   procedures for precisely determining the cost of capital. This is the case because the cost

12   of capital is an opportunity cost and is prospective-looking, which dictates that it must be

13   estimated. However, there are several useful models that can be employed to assist in

14   estimating the ROE, which is the capital structure item that is the most difficult to

15   determine. These include the DCF, CAPM, CE and risk premium ("RP") methods. I

16   have not directly employed a RP model in my analyses although, as discussed later, my

17   CAPM analysis is a form of the RP methodology. Each of these methodologies will be

18   described in more detail later in my testimony.

19

20   IV.   **GENERAL ECONOMIC CONDITIONS**

21

22   Q.   **ARE ECONOMIC AND FINANCIAL CONDITIONS IMPORTANT IN**

23   **DETERMINING THE COSTS OF CAPITAL FOR A PUBLIC UTILITY?**

24   A.   Yes. The costs of capital for both fixed-cost (debt and preferred stock) components and

25   common equity are determined in part by current and prospective economic and financial

26   conditions. At any given time, each of the following factors has an influence on the costs

27   of capital:

28   •   The level of economic activity (*i.e.*, growth rate of the economy);

29   •   The stage of the business cycle (*i.e.*, recession, expansion, or transition);

1   •   The level of inflation;

2   •   The level and trend of interest rates; and,

3   •   Current and expected economic conditions.

4   My understanding is that this position is consistent with the *Bluefield* decision,

5   which noted "[a] rate of return may be reasonable at one time and become too high or too

6   low by changes affecting opportunities for investment, the money market, and business

7   conditions generally."[5]

8

9   Q.   **WHAT INDICATORS OF ECONOMIC AND FINANCIAL ACTIVITY DID YOU**

10   **EVALUATE IN YOUR ANALYSES?**

11   A.   I examined several sets of economic statistics from 1975 to the present. I chose this time

12   period because it permits the evaluation of economic conditions over four full business

13   cycles plus the current cycle allowing for an assessment of changes in long-term trends.

14   Consideration of economic/financial conditions over a relatively long period of time

15   allows me to assess how such conditions have impacted the level and trends of the costs

16   of capital. This period also approximates the beginning and continuation of active rate

17   case activities by public utilities that generally began in the mid-1970s.

18   A business cycle is commonly defined as a complete period of expansion

19   (recovery and growth) and contraction (recession). A full business cycle is a useful and

20   convenient period over which to measure levels and trends in long-term capital costs

21   because it incorporates the cyclical (*i.e.*, stage of business cycle) influences and, thus,

22   permits a comparison of structural (or long-term) trends.

23

24   Q.   **PLEASE DESCRIBE THE TIMEFRAMES OF THE FOUR PRIOR BUSINESS**

25   **CYCLES AND THE CURRENT CYCLE.**

26   A.   The four prior complete cycles and current cycle cover the following periods:

27

28

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[5]   *Bluefield*, 262 U.S. at 693.

Business Cycle	Expansion Cycle	Contraction Period
1975-1982	Mar. 1975-July 1981	Aug. 1981-Oct. 1982
1982-1991	Nov. 1982-July 1990	Aug. 1990-Mar. 1991
1991-2001	Mar. 1991-Mar. 2001	Apr. 2001-Nov. 2001
2001-2009	Nov. 2001-Nov. 2007	Dec. 2007-June 2009
Current	July 2009 -	

Source: The National Bureau of Economic Research, "U.S. Business Cycle Expansions and Contractions."[6]

1

2   **Q.   DO YOU HAVE ANY GENERAL OBSERVATIONS CONCERNING THE**
3   **RECENT TRENDS IN ECONOMIC CONDITIONS AND THEIR IMPACT ON**
4   **CAPITAL COSTS OVER THIS BROAD PERIOD?**

5   A.   Yes, I do. From the early 1980s until the end of 2007, the United States economy
6   enjoyed general prosperity and stability. This period was characterized by longer
7   economic expansions, relatively tame contractions, low and declining inflation, and
8   declining interest rates and other capital costs.

9   However, in 2008 and 2009 the economy declined significantly, initially as a
10   result of the 2007 collapse of the "sub-prime" mortgage market and the related liquidity
11   crisis in the financial sector of the economy. Subsequently, this financial crisis
12   intensified with a more broad-based decline initially based on a substantial increase in
13   petroleum prices and a dramatic decline in the U.S. financial sector of the economy.

14   This decline has been described as the worst financial crisis since the Great
15   Depression and has been referred to as the "Great Recession." Beginning in 2008, the
16   U.S. and other governments implemented unprecedented policies to attempt to correct or
17   minimize the scope and effects of this recession. Some of these policies are still in effect.

18

19 **Q.   PLEASE DESCRIBE RECENT AND CURRENT ECONOMIC AND FINANCIAL**
20 **CONDITIONS AND THEIR IMPACT ON THE COSTS OF CAPITAL.**

21 A.   One impact of the Great Recession has been a reduction in actual and expected
22   investment returns and a corresponding reduction in capital costs. This decline is
23   evidenced by a decline in both short-term and long-term interest rates and the
24   expectations of investors and is reflected in ROE model results (such as DCF, CAPM and

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[6]   http://www.nber.org/cycles/cyclesmain.html.

1   CE). Regulatory agencies throughout the U.S. have recognized the decline in capital

2   costs by authorizing lower ROEs for regulated utilities in each of the last several years.[7]

3   Schedule 2 shows several sets of relevant economic and financial statistics for the

4   cited time periods. Page 1 contains general macroeconomic statistics, page 2 shows

5   interest rates, and page 3 contains equity market statistics.

6   Page 1 shows that in 2007 the economy stalled and subsequently entered a

7   significant decline, as indicated by the lower growth rate in real (i.e., adjusted for

8   inflation) Gross Domestic Product ("GDP"), lower levels of industrial production, and an

9   increase in the unemployment rate. This recession lasted until mid-2009, making it a

10   longer-than-normal recession, as well as a much deeper recession. Since then, economic

11   growth has been somewhat erratic and the economy has grown more slowly than in prior

12   expansions.

13   Page 1 also shows the rate of inflation. As reflected in the Consumer Price Index

14   ("CPI"), inflation rose significantly during the 1975-1982 business cycle and reached

15   double-digit levels in 1979-1980. The rate of inflation has declined substantially since

16   1981. Since 2008, the CPI has been 3 percent or lower, with 2014 and 2015 growth at 1

17   percent and 2016 and 2017 growth at 2.1 percent. It is thus apparent that the rate of

18   inflation has generally been declining over the past several business cycles. Recent and

19   current levels of inflation are at the lowest levels of the past 35 years, which is reflective

20   of lower capital costs.[8]

21

22 Q. **WHAT HAVE BEEN THE TRENDS IN INTEREST RATES OVER THE FOUR**

23   **PRIOR BUSINESS CYCLES AND WHAT IS THE CURRENT TREND?**

24 A. Page 2 shows several series of interest rates. Both short-term and long-term rates rose

25   sharply to record levels in 1975-1981 when the inflation rate was high. Interest rates

26   have declined substantially in conjunction with the corresponding declines in inflation

27   since the early 1980's.

---

[7]   Regulatory Research Associates, "Regulatory Focus." January 30, 2018.
[8]   The rate of inflation is one component of interest rate expectations of investors, who generally expect to receive a return in excess of the rate of inflation. Thus, a lower rate of inflation has a downward impact on interest rates and other capital costs.

1   From 2008 to late 2015, the Federal Reserve System ("Federal Reserve")

2 maintained the Federal Funds rate (*i.e.*, short-term interest rate) at 0.25 percent, an all-

3 time low. The Federal Reserve has subsequently raised the Federal Funds rate on six

4 occasions between December of 2015 and March of 2018.[9] The Federal Reserve also

5 purchased U.S. Treasury securities to stimulate the economy.[10]

6   As seen on page 2, since 2013 both U.S. and corporate bond yields have declined

7 to their lowest levels in the past four business cycles and in more than 35 years. Even

8 with the "tapering" and eventual ending of the Federal Reserve's Quantitative Easing

9 program, as well as the Federal Reserve's raising of the Federal Funds rate, interest rates

10 have remained low. The rates on U.S. Treasury securities have increased since the

11 beginning of 2018. Despite this, both government and utility long-term lending rates

12 remain near historically low levels, again reflective of lower capital costs. Utility bond

13 rates have not materially increased in recent months, as the 4.13 percent yield for A-rated

14 utility debt (i.e., OG&E's rating) in March of 2018 is similar to the levels of a year ago.

15

16 **Q.** **WHAT DOES SCHEDULE 2 SHOW FOR TRENDS OF COMMON SHARE**

17   **PRICES?**

18 A. Page 3 shows several series of common stock prices and ratios. These indicate that stock

19 prices were essentially stagnant during the high inflation/high interest rate environment

20 of the late 1970s and early 1980s. The 1983-1991 business cycle and the more recent

21 cycles witnessed a significant upward trend in stock prices. The beginning of the recent

22 financial crisis saw stock prices decline precipitously as stock prices in 2008 and early

23 2009 were down significantly from peak 2007 levels, reflecting the financial/economic

24 crisis. Beginning in the second quarter of 2009, prices recovered substantially and

25 ultimately reached and exceeded the levels achieved prior to the "crash." On the other

26 hand, recent equity markets have been somewhat volatile, including in the first quarter of

27 2018.

---

[9] The Fed Funds increases took place in December 2015, December 2016, March 2017, June 2017, December 2017, and March 2018.

[10] This is referred to as Quantitative Easing which was comprised of three "rounds". In "round" 3, known as QE3, the Federal Reserve initially purchased some $85 billion of U.S. Treasury Securities per month in order to stimulate the economy. The Federal Reserve eventually "tapered" its purchase of U.S. Treasury securities through October 2014, at which time Quantitative Easing ended.

1   **Q.**   **WHAT CONCLUSIONS DO YOU DRAW FROM YOUR DISCUSSION OF**
2   **ECONOMIC AND FINANCIAL CONDITIONS?**

3   **A.**   Recent economic and financial circumstances have differed from any that have prevailed

4   since at least the 1930s. Concurrent with the Great Recession, there was a decline in

5   capital costs and returns which significantly reduced the value of most retirement

6   accounts, investment portfolios and other assets. One significant aspect of this has been a

7   decline in investor expectations of returns[11] even with the return of stock prices to levels

8   achieved prior to the "crash."[12] This is evident by: (1) lower interest rates on bank

9   deposits; (2) lower interest rates on U.S. Treasury and utility bonds; and (3) lower

10   authorized ROEs by regulatory commissions. Finally, as noted above, utility bond

11   interest rates are currently at levels well below those prevailing prior to the financial

12   crisis of late 2008 to early 2009 and are near the lowest levels in the past 35 years. Even

13   with the increase in long-term U.S. Treasury rates in early 2018, utility bond yields are

14   similar to the levels prevailing at the beginning of 2017.

15

16   **Q.**   **HOW DO THESE ECONOMIC/FINANCIAL CONDITIONS IMPACT THE**
17   **DETERMINATION OF A ROE FOR REGULATED UTILITIES?**

18   **A.**   The costs of capital for regulated utilities have declined in recent years. For example, the

19   current interest costs that utilities pay on new debt remain near the low point of the last

20   several decades. In addition, the results of the traditional ROE models (*i.e.*, DCF, CAPM

21   and CE) are lower than was the case prior to the Great Recession. In light of this, it is not

22   surprising that the average ROEs authorized by state regulatory agencies have declined

23   and continued to remain relatively low through 2017, as follows: [13]

24

25

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27

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[11]   *See, e.g.*, Kiplinger's Personal Finance, "Investors Brace for Smaller Gains, Focus on Long-Term," August 30, 2015.

[12]   *See e.g.*, Vanguard News & Perspectives. "Stabilization, Not Stagnation: Expect Modest Returns," March 30, 2017, www.personal.vanguard.com/us/insights/artical/infographic-stabilization-032017.

[13]   Regulatory Research Associates, "Regulatory Focus", January 30, 2018, General Rate Cases.

	Electric		Natural Gas	
	Average	Median	Average	Median
2007	10.32%	10.23%	10.22%	10.20%
2008	10.37%	10.30%	10.39%	10.45%
2009	10.52%	10.50%	10.22%	10.26%
2010	10.29%	10.26%	10.15%	10.10%
2011	10.19%	10.14%	9.91%	10.05%
2012	10.02%	10.00%	9.93%	10.00%
2013	9.82%	9.82%	9.68%	9.72%
2014	9.76%	9.75%	9.78%	9.78%
2015	9.60%	9.53%	9.60%	9.68%
2016	9.60%	9.60%	9.53%	9.50%
2017	9.68%	9.60%	9.72%	9.60%

V. OG&E'S OPERATIONS AND RISKS

Q. PLEASE BRIEFLY DESCRIBE OG&E.

A. OG&E is a regulated public utility that generates, transmits, distributes and sells electric energy to some 840,000 customers in Oklahoma and western Arkansas. OG&E's service area contains 267 communities and contiguous rural and suburban areas, and covers some 30,000 square miles, including Oklahoma City and Fort Smith Arkansas. Approximately 91 percent of OG&E's electric operating revenues are generated from customers in Oklahoma.[14]

OG&E was founded in 1902 and is the largest electric utility in Oklahoma. The Company merged with Enogex in 1986. In 1997, OG&E reorganized as a holding company – OGE Energy Corp. – with OG&E and Enogex being subsidiary operating companies.[15]

Q. WHAT IS THE NATURE OF OGE ENERGY?

A. As noted above, OGE Energy was organized in 1997 with two operating subsidiaries, OG&E and Enogex. The later entity was engaged in natural gas gathering, processing, transportation, storage and marketing. Enogex also operated a natural gas pipeline system. In 2013, Enogex was "deconsolidated" and merged with a portion of CenterPoint Energy's operations to form a limited partnership and was renamed Enable

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[14] OG&E 2017 Form 10-K, page 2.
[15] OG&E website.

12

1   Midstream Partners, LP ("Enable"). In 2014 Enable completed an initial public offering

2   of common units and became a publicly traded Master Limited Partnership.[16]   OGE

3   Energy holds a 25.7 percent limited partner interest and 50 percent general partner

4   interest in Enable.[17]

5   OGE Energy currently operates and reports the results of its operations through

6   two business segments. The electric utility segment is conducted through OG&E and the

7   natural gas midstream operations segment represents OGE Energy's investment in Enable

8   and through wholly owned subsidiaries.[18]

9

10   **Q.   HAS OGE ENERGY'S NATURAL GAS MIDSTREAM SEGMENT BEEN**

11   **SUCCESSFUL IN RECENT YEARS?**

12   A.   It is apparent that Enable's financial performance since its inception has not been

13   consistently favorable.   This has accordingly negatively impacted OGE Energy's

14   performance, as is indicated by the following comments by Value Line:

15

16   September 15, 2015

17

18   **Untimely OGE Stock has lost about 25% of its value in 2015.** This
19   reflects the decline in Enable's near-term prospects.[19]

20

21

22   December 18, 2015

23

24   (OGE's) investment in **Enable Midstream Partners**, a mid-stream gas
25   master limited partnership in which it has a 26.3% stake, **has not turned**
26   **out as well as OGE had expected** due to the sharp drop in commodity
27   prices since mid-2014. Enable still provided $140 million in distributions
28   for OGE this year, but distribution income has come at a token pace in
29   recent quarters.   **This is the main reason why OGE stock has**
30   **performed so poorly this year, having declined about 30% in value**
31   **since the start of 2015.   We have lowered the company's Financial**
32   **Strength rating and the stock's Safety rank a notch each, to A and 2**
33   **(Above Average), respectively.[20]**
34   **[Emphasis added]**

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[16]   OGE Energy 2017 Form 10-K, page 2.
[17]   OG&E Presentation to Wells Fargo Pipeline, MLP and Utility Symposium, December 7, 2017.
[18]   OGE Energy 2017 Form 10-K, page 2.
[19]   Value Line Investment Survey, OGE Energy, September 18, 2015.
[20]   Value Line Investment Survey, OGE Energy, December 18, 2015.

1
2
3   June 17, 2016
4
5   **OGE stock has fared much better in recent months.** It was the worst
6   performer among electric utility issues in 2015. **The biggest problem**
7   **was a steep decline in the value of its 26.3% stake in Enable**
8   **Midstream Partners (NYSE:ENBL), a natural gas master limited**
9   **partnership that has been hurt by a reduction in oil and gas**
10   **exploration and production activity.** The poor performance continued
11   into early 2016, but since the price of Enable has more than doubled from
12   its all-time low, OGE stock has rebounded, too. Its price has risen 19%
13   since our March report.[21]
14   **[Emphasis added]**
15
16   These Value Line reports demonstrate that OGE Energy's investment in Enable has
17   produced volatile results and that OGE Energy's stock has been negatively impacted by
18   its investment in Enable over significant portions of the past several years. In addition, its
19   Value Line metrics (i.e., Financial Strength and Safety Rank) have been negatively
20   impacted by its Enable investment.
21   In addition to Value Line's descriptions of Enable via its discussions of OGE
22   Energy, the publication has directly commented on Enable's risks as follows:
23
24   **These shares**, however, **are quite risky**, given their Below Average (4) rank for
25   Safety and subpar Price Stability Score. This is par for the course in the industry,
26   given the exposure to commodity prices.[22]
27   **[Emphasis added]**
28
29 Q. **WHAT ARE THE CURRENT SECURITY RATINGS OF OG&E AND OGE**
30   **ENERGY?**
31 A. The current ratings of OG&E and OGE Energy are shown below:
32

---

[21]   Value Line Investment Survey, OGE Energy, June 17, 2016.
[22]   Value Line Investment Survey, Enable Midstream Partners, March 2, 2018.

14

	OG&E	OGE Energy
Moody's	A1	A3
Standard & Poor's	A-	A-
Fitch	A+	A-

Source: OGE Energy, 2017 Form 10-K, page 70.

It is apparent that the ratings of two of the three rating agencies are higher (i.e., less risky) for OG&E than for OGE Energy. It is noteworthy, however, that Standard & Poor's, unlike Moody's and Fitch, has historically assigned the same or near-same ratings for a utility subsidiary and its respective holding company, with the holding company ratings being assigned to the utility subsidiary, or one "notch" lower. Such is the case for OG&E and OGE Energy.[23]

The higher security ratings of OG&E indicate that OG&E is perceived to have lower risk than does OGE Energy.

Q. **HAVE THERE BEEN ANY CHANGES IN OG&E'S SECURITY RATINGS IN RECENT YEARS?**

A. Yes, there have been changes in OG&E's ratings. As is shown on Schedule 3, since 2011 OG&E's Moody's ratings have increased from A2 to A1 while S&P's ratings have increased from BBB+ to A-.

One aspect of the difference in OG&E's and OGE Energy's ratings appears to be the result of the negative impact of Enable on OGE Energy's ratings. Schedule 3 also shows the ratings of Enable (and of Enogex prior to the creation of Enable) and indicates that this entity has consistently had ratings well below those of OGE Energy.

Q. **HOW DO OG&E'S SECURITY RATINGS COMPARE TO THOSE OF OTHER ELECTRIC UTILITIES?**

A. OG&E has generally superior ratings relative to other electric utilities. Schedule 4 shows the current ratings of the two groups of proxy companies developed in a later section of my testimony, as well as the ratings of the electric utility subsidiaries of the proxy

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[23] Standard & Poor's September 15, 2017 Research Report on OG&E stated "The outlook on Oklahoma City, Okla.-based Oklahoma Gas & Electric Co. (OG&E) reflects the outlook of its parent OGE Energy Corp.

	Rating	Parcell Group	Morin Group
	A1	0	2
	A2	3	5
	A3	3	11
	Baa1	2	6
	Baa2	3	6
	Ba1	0	1

companies.[24]   The table below compares OG&E's A1 Issuer rating with those of the proxy groups' electric utility subsidiaries:

This indicates that only **two** of the proxy companies' electric utility subsidiaries have Moody's issuer ratings as high as OG&E's A1 rating. This is clear evidence of a lower level of perceived risk for OG&E, relative to the proxy companies.

Q. OG&E WITNESS MERRILL'S DIRECT TESTIMONY CITES MOODY'S PLACING OG&E'S RATINGS ON "NEGATIVE" WATCH. DO YOU HAVE ANY RESPONSE TO THIS?

A. Yes, I do. On June 29, 2017 Moody's changed both OG&E's and OGE Energy's "Outlooks" from "Stable" to "Negative."[25]   Moody's provides three "Outlook" designations for each company's rating – positive, stable and negative. The negative outlook simply designates where within the rating category the subject company resides. It is noteworthy that OG&E has not been downgraded by Moody's, or by any other rating agency. OG&E does not claim in its testimony filed in this case that it has been downgraded by any of the rating agencies.

It is also noteworthy that OG&E's Moody's rating – A1 – is the top "notch" of the single-A rating category. Thus, even if OG&E were to be downgraded by Moody's, for whatever reason, it would likely be to A2, the middle single-A category. This, of course, is still a solid single-A rating. Even an A2 rating exceeds the ratings of the vast majority of the proxy groups' electric subsidiaries.

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[24]   Moody's ratings are shown in this schedule since this rating agency gives more consideration to the utility subsidiaries, as opposed to focusing on the consolidated parent company as is the case for Standard & Poor's.

[25]   Moody's Investors Service, "**Rating Action**: Moody's Changes OGE and OG&E Outlooks to Negative," Global Credit Research, June 29, 2017. (Provided by OG&E in response to Data Request OIEC 2-2).

1		
2	Q.	**DO YOU HAVE ANY RESPONSE TO OG&E'S CLAIM THAT THE COMPANY**
3		**HAS BEEN PLACED ON "NEGATIVE CREDIT WATCH" BY STANDARD &**
4		**POOR'S?**
5	A.	Yes, I do. Standard & Poor's March 5, 2018 cites the following factors in its "Rationale"
6		to place OG&E on negative credit watch:[26]
7		
8		OGE's funds from operations (FFO) to debt to be very close to S&P's
9		"downgrade trigger of 23%",
10		Revised capital spending plan,
11		Effects of U.S. corporate tax reform.
12		
13		Standard & Poor's also cited its "view of the company's management of
14		regulatory risk in Oklahoma.
15		Finally, Standard & Poor's also stated "We could also lower our ratings if OGE
16		increases its general partnership ownership in Enable beyond the current level."
17		Clearly, it is not the "regulatory risk" of OG&E, in terms of being regulated by
18		this Commission, that is the primary driver in the Company's negative credit watch. The
19		revised capital spending plan and effects of U.S. corporate tax reform are first cited by
20		Standard & Poor's. The "regulatory risk" is cited in the "In addition" section of the
21		"Rationale".
22		Further, as cited previously, the exposure of OGE Energy's ownership in Enable
23		has been a concern to both investors and rating agencies.
24		Finally, as noted above, Standard & Poor's is the rating agency that places more
25		emphasis on the parent company in its rating assessments than does Moody's and Fitch.
26		
27	Q.	**WHAT IS YOUR ASSESSMENT OF THE STANDARD & POOR'S REFERENCE**
28		**TO THE COMPANY'S "REVISED CAPITAL EXPENDITURES ESTIMATES"**
29		**AS A PRIMARY FACTOR IN ASSESSING THE NEGATIVE CREDIT WATCH?**

---

[26] Standard & Poor's, Ratings Direct, "Research Update: OGE Energy Corp. And Subsidiary Outlooks Revised to Negative on Weaker Financial Measures; Ratings Affirmed," March 5, 2018.

1 A. It is apparent that Standard & Poor's regards OG&E's and OGE Energy's capital expenditure estimates, as well as the revisions of these estimates, as a negative factor for the companies. It thus appears that this concern relates to OG&E management's decisions with regard to the levels and trends of capital expenditures, and related needs for capital attraction.

However, this is not to say that the regulated operations of OG&E are not positive attributes for OG&E's and OGE Energy's ratings. The March 5, 2018 Standard & Poor's "Research Update" indicates as follows:

> Our **business risk assessment for OGE** reflects the **strength and stability of a vertically integrated regulated utility, OG&E**, which provides electricity to about 830,000 customers in Oklahoma **and has an excellent business risk profile**. It also **reflects OGE's investment in** the midstream energy joint venture Enable Midstream Partners, L.P. (**Enable), which in our opinion, carries more business risk** and has a satisfactory business risk profile. **We view OGE's business risk at the high end of the strong category, in part because the regulated utility operations are low risk, it operates within a reasonably supportive cost recovery jurisdiction, and it benefits from healthy economic growth in its service territory**. The company's rate base is split between Oklahoma (80%), the Federal Energy Regulatory Commission (FERC) (13%), and Arkansas (7%). OG&E contributes over 80% to OGE's consolidated earnings, distributions, and cash flow.
>
> We **assess OGE's financial risk using more moderate benchmarks** compared to that of a typical corporate issuer, **reflecting the company's mostly lower-risk, rate-regulated utility operations and average management of regulatory risk**.
> **[Emphasis added]**

30 Q. **IT APPEARS THAT A CENTRAL THEME OF OG&E'S DIRECT TESTIMONY FOCUSES ON ITS PERCEPTION OF THE IMPORTANCE OF THE AUTHORIZED ROE FOR UTILITIES IN GENERAL AND OG&E IN PARTICULAR.[27] DO YOU HAVE ANY RESPONSE TO THESE CLAIMS?**

34 A. Yes, I do. It is apparent that OG&E's emphasis on the importance of ROE is focused unduly on the interests of its shareholders to the detriment of its ratepayers' interests.

It is noteworthy that OG&E's currently-authorized ROE of 9.5 percent is consistent with the most-recently authorized ROE of other electric utilities. As I

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[27] See Direct Testimony of Stephen E. Merrill, pages 3-7.

1   indicated previously, the average and median authorized ROEs throughout the U.S. have

2   been in the mid-nine percent range since 2015.

3

4

5 **Q.** **OG&E WITNESS MERRILL MAINTAINS THAT "A REASONABLE**

6   **AUTHORIZED ROE IS A KEY FACTOR IN KEEPING OUR COST OF**

7   **CAPITAL FROM ESCALATING." WHAT IS YOUR RESPONSE TO THIS**

8   **ASSERTION?**

9 **A.** Mr. Merrill seems to be implying that OG&E's currently-authorized ROE is not

10   "reasonable" and the Company is consequently in some sort of danger that its cost of

11   capital will "escalate."[28] I have previously indicated that OG&E has above-average

12   security ratings, relative to other electric utilities. In addition, as shown below, it is

13   apparent that its cost of debt has declined in recent years. Finally, it is apparent that

14   OG&E has successfully raised the capital necessary to finance its capital expenditures in

15   recent years, as evidenced by the fact that the Company has issued some $1.3 billion of

16   new long-term debt since 2013.[29] As a result, there is no evidence of any "escalation" of

17   the Company's cost of capital. OG&E, like other utilities, has enjoyed a declining cost of

18   capital in recent years.

19

20 **Q.** **CAN YOU PROVIDE ANY INDICATIONS THAT OG&E'S COST OF CAPITAL**

21   **HAS DECLINED IN RECENT YEARS?**

22 **A.** Yes, I can. One prominent example of this is a decline in the Company's total cost of

23   long-term debt during its recent rate filings. These can be summarized as follows:

Cause No.	Test Year	Debt Cost	ROE Request	OCC ROE
20110087	Dec. 2010	6.32%	11.00%	10.20%
20150073	June 2015	5.62%	10.25%	9.50%
201700496	Sept. 2017	5.32%	9.90%	Pending

24

25 This indicates that OG&E's total cost of long-term debt has declined by 100 basis points

26 since its 2011 rate proceeding. This is a significant reduction in the Company's debt cost

27 rate.

---

[28]   Direct Testimony of Stephen E. Merrill, page 4, lines 7-8.

[29]   Response to OIEC-7-7 Attachment.

1		OG&E's cost of equity has correspondingly declined over this same period, as has
2		been appropriately recognized by the Commission, as well as by OG&E's ROE requests.
3		
4	Q.	**IN A PRIOR SECTION OF YOUR TESTIMONY, YOU SHOWED THE**
5		**AVERAGE AND MEDIAN AUTHORIZED ROEs FOR ELECTRIC UTILITIES**
6		**IN RECENT YEARS, WHICH APPEAR TO INDICATE THAT THE DECLINE**
7		**IN ROEs HAS MODERATED. IS THIS A PROPER ASSESSMENT OF THE**
8		**TREND IN ROEs?**
9	A.	No, this does not tell the whole story of the trend in authorized ROEs. Another relevant
10		consideration is how the recently-authorized ROEs compare to the previously-authorized
11		ROE for the various electric utilities that have had rate decisions in recent years. I have
12		shown this comparison on Schedule 5, which reflects the electric utility proceedings in
13		2016 and 2017 where an authorized ROE was identified. This schedule also identifies
14		the previously-authorized ROE if it was determined in 2012 or after. As this schedule
15		indicates, there were 56 proceedings that meet these criteria. Of these 56, only five
16		reflected an increased ROE in 2016 or 2017, 14 reflected no change in ROE, and 37
17		reflected a decrease in the ROE. Clearly, the vast majority of authorized ROEs
18		represented a decline from the previously authorized ROE over this period. Furthermore,
19		the average ROE declined by 0.19 percent and the median ROE declined by 0.15 percent.
20		
21	Q.	**OG&E WITNESS MERRILL ALSO CLAIMS THAT INVESTORS ARE**
22		**CONCERNED ABOUT THE DIRECTION OF ROEs AND REGULATION IN**
23		**OKLAHOMA.[30] WHAT IS YOUR RESPONSE TO THIS ASSERTION?**
24	A.	I have previously indicated that OG&E's currently-authorized ROE is consistent with
25		that of other electric utilities. It is also apparent that the Commission is generally
26		regarded as favorable, as noted above by Standard & Poor's.
27		
28	Q.	**CAN YOU CITE ANY FAVORABLE ANALYSTS' REPORTS ON OGE**
29		**ENERGY?**

---

[30]   Direct Testimony of Stephen E. Merrill, page 5, lines 20-31 and page 6, lines 1-2.

1　A.　Yes, I can. It is noteworthy that OG&E witness Merrill only focuses on what he

2　　　perceives as negative attitudes toward the Company. However, this does not fully and

3　　　accurately represent the investment community's view of the Company. As an example

4　　　of this, the Company's response to OIEC-7-4 cited the following:

5　　　　　Bank of America Merrill Lynch upgraded to OGE to Neutral in January 20198

6　　　　　and then to Buy in February 2018

7　　　　　Goldman Sachs upgraded OGE to Buy in January 2018

8

9　Q.　**HAVE YOU PERFORMED A COMPARISON OF OG&E'S AND OGE**

10　　**ENERGY'S PERCEIVED RISK OVER THE PAST SEVERAL YEARS?**

11　A.　Yes, I have. The table below compares several risk measures of OG&E, as well as OGE

12　　　Energy, from the period of the Company's last three rate proceedings (including the

13　　　current proceeding):[31]

Indicator	2012	2016	2018
Moody's Bond Rating (OG&E)	A2	A1	A1
Fitch Bond Rating (OG&E)	A+	A+	A+
S&P Bond Rating (OG&E)	BBB+	A-	A-
S&P Stock Ranking (OGE Energy)	A-	A-	A-
Value Line Safety (OGE Energy)	2	2	2
Value Line Financial Strength (OGE Energy)	A	A	A

14

15　　　It is apparent from these indicators that the perceived risk of OG&E has not

16　　　increased over the past several years.

17

18　Q.　**DO YOU HAVE ANY RESPONSE TO OG&E'S ASSERTION THAT**

19　　**REGULATORY RISK IN OKLAHOMA IS HIGH?**

20　A.　Yes, I do. I note, first of all, that the Oklahoma Corporation Commission is generally

21　　　regarded as an "average" regulatory climate. Value Line, for example, gives the

22　　　Commission an average regulatory climate designation.[32]

23

---

[31] Sources: Bond ratings, response to OIEC-7-7 Attachment; S&P Stock Ranking, S&P Stock Guide; Safety and Financial Strength, Value Line Investment Survey, December 18, 2015 and March 16, 2018.

[32] Value Line Investment Survey, April 27, 2018, Electric Utility (West) Industry; March 16, 2018 OGE Energy Corp.

1	Q.	**OG&E WITNESS MERRILL FURTHER CITES OG&E'S PRICE EARNINGS**
2		**RATIO AS 'EVIDENCE' THAT ITS COST OF EQUITY HAS INCREASED.[33] IS**
3		**HE CORRECT?**
4	A.	No, he is not correct. Since OG&E is a subsidiary of OGE Energy, it does not have
5		publicly-traded stock. As a result, OG&E does not have a Price Earnings (P/E) ratio. It
6		is OGE Energy that has a P/E ratio. As I indicated previously, OGE Energy's stock price
7		has been negatively impacted by its investment in Enable in recent years, which has an
8		obvious negative impact on OGE Energy's P/E. Mr. Merrill, who is the Chief Financial
9		Officer of both OG&E and OGE Energy, does not acknowledge the impact of Enable.
10		As a result, his claim is misleading and incomplete.
11		
12	Q.	**ARE THERE ANY OTHER FACTORS THAT IMPACT OG&E'S RISKS AND**
13		**THUS ITS REQUIRED ROE?**
14	A.	Yes. OG&E has a comprehensive "suite" of regulatory mechanisms, in the form of riders
15		and tariffs, that permit the Company to recover costs and investments without going
16		through the traditional rate proceeding process.
17		
18	Q.	**WHAT ARE THE PRIMARY REGULATORY MECHANISMS THAT OG&E**
19		**EMPLOYS?**
20	A.	OG&E's response to OIEC 2-8 indicates that the Company has the following regulatory
21		mechanisms, along with the corresponding test period revenues recovered by each
22		mechanism:
23		

Mechanism	Revenues
Rider for Fuel Cost Adjustment	$646,393,648
Annual Public Utility Assessment Fee	$2,316,326
Load Reduction Rider	($4,184,207)
Cogeneration Credit Rider	($11,059,181)
Demand Program Rider	$67,536,909
Storm Cost Recovery Rider	$11,999,222
Renewable Energy Program Rider	$408,523
Southwest Power Pool Cost Tracker	$50,743,924

24

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[33] Direct Testimony of Stephen E. Merrill, page 6, lines 15-26.

1		Collectively, these regulatory mechanisms permitted OG&E to recover over $750 million
2		of expenses. This amounts to approximately 43 percent of the Company's test period
3		expenses.[34]
4		
5	Q.	**DO THESE MECHANISMS REDUCE THE RISK OF OG&E?**
6	A.	Yes, they do. Those mechanisms, on both an independent and collective basis, have the
7		effect of transferring a portion of OG&E's risk from its shareholders to its ratepayers.
8		This is the case since the risk of fully recovering certain expenses is reduced or
9		eliminated.
10		
11	Q.	**ARE REGULATORY MECHANISMS A RELATIVELY NEW ASPECT OF**
12		**PUBLIC UTILITY REGULATION?**
13	A.	No, they are not. A brief history of regulatory mechanisms was provided in a September
14		12, 2017 report by Regulatory Research Associates, titled "Adjustment Clauses – a State-
15		By-State Overview." This report stated (note that the term "Adjustment Clauses" was
16		used in the report, which is a type of regulatory mechanism as follows):
17		

18 **A defining characteristic of an adjustment clause is that it effectively**
19 **shifts the risk associated with the recovery of the expense in question**
20 **from shareholders to customers**, because if the clause operates as
21 designed, the company is able to change its rates to recover its costs on a
22 current basis, without any negative effect on the bottom line and without
23 the expense and delay that accompanies a rate case filing.
24 . . .
25 The electric and natural gas utilities' use of adjustment clauses to recover
26 variations in certain costs outside of the traditional rate case process had
27 its origins in the 1973 Arab oil embargo, when fuel prices skyrocketed
28 leaving the utilities with no way to recover the increased costs in a timely
29 manner.
30 . . .
31 The result was the creation of the fuel adjustment clause (FAC),
32 essentially a single-issue rate making process, whereby a utility is
33 permitted to implement periodic adjustments (e.g., monthly, quarterly,
34 semi-annually, annually) associated with changes in its cost of fuel.

---

[34] OG&E total company test period operating expenses were $1.937 billion (per Schedule H-1 of Company filing). The approximate Oklahoma retail portion of this was approximately $1.743 billion (i.e., 90% of $1.937 billion). Thus, the $750 million recovered through regulatory mechanisms was approximately 43 percent (i.e., $750 million divided by $1.743 billion).

1 . . .
2   Over the ensuing years, the use of adjustment clauses has expanded
3   greatly. Adjustment clauses are generally reserved for expenses that are
4   outside the control of the utility or are required by law or rule.
5   **[Emphasis added]**
6

7 **Q.** **HAVE THE RATING AGENCIES COMMENTED ON THE RISK-REDUCING**
8 **NATURE OF REGULATORY MECHANISMS?**
9 **A.** Yes, they have. For example, a report by Moody's Investors Service, dated June 13,
10 2010 and titled "Cost Recovery Provisions Key to Investor Owned Utility Ratings and
11 Credit Quality," cited the risk-reducing nature of regulatory mechanisms. In this report,
12 Moody's noted:

13
14   Some regulators believe that mechanisms like automatic adjustment
15   clauses materially reduce the business and operating risk of a utility,
16   providing justification for a relatively low allowed return on equity. We
17   believe this is one of several reasons why both allowed and requested
18   ROEs have trended downward over the last two decades.
19
20   **Moody's views automatic adjustment clauses**, the most common of
21   which is for fuel and purchased power, the largest component of utility
22   operating expenses, **as supportive of utility credit quality and**
23   **important in reducing a utility's cash flow volatility, liquidity**
24   **requirements, and credit risk.**
25   **[Emphasis added]**
26

27 Moody's, in fact, upgraded the bulk of the entire U.S. investor-owned utility industry
28 (including OG&E) in early 2014, largely due to regulators' increasing use of regulatory
29 mechanisms and the resulting improvement of utilities' finances. Moody's noted the
30 following in a February 3, 2014, Sector Comment titled "US Utility Sector Upgrades
31 Driven by Stable and Transparent Regulatory Frameworks":

32
33   We recently upgraded most US investor-owned utilities and many of their
34   holding companies due to our view that the US regulatory environment
35   has improved over the past several years. Most of the companies placed
36   on review for upgrade in November 2013 were upgraded in late January
37   2014, and most by one notch.
38   . . .

US regulated utilities appear financially secure, thanks to their suite of transparent and timely cost and investment recovery mechanisms. When compared with other regulatory environments in developed countries, the overall regulatory environment for US utilities has steadily improved over the past few years and is expected to remain supportive and constructive for at least the next 3-5 years.

Supportive regulatory frameworks

Over the past few years, the US regulatory environment has been very supportive of utilities. We think this is partly a function of regulators acknowledging that their utility infrastructure needs a material amount of ongoing investment for maintenance, refurbishment and renovation purposes.

. . .

Stable and predictable financial profile

A transparent suite of timely recovery mechanisms helps utilities generate stable and predictable revenues and cash flows, which can support a material amount of leverage.

Q. **HAS MOODY'S FURTHER COMMENTED ON THE IMPACT OF REGULATORY MECHANISMS AND REDUCED RISK/LOWER AUTHORIZED RETURN ON EQUITY FOR UTILITIES?**

A. Yes. In a March 10, 2015, Sector In-Depth report titled "Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles", Moody's stated:

The credit profiles of US regulated utilities will remain intact over the next few years despite **our expectation that regulators will continue to trim the sector's profitability by lowering its authorized returns on equity (ROE). Persistently low interest rates and a comprehensive suite of cost recovery mechanisms ensure a lower business risk profile for utilities**, prompting regulators to scrutinize their profitability, which is defined as the ratio of net income to book equity.
[Emphasis added]

Q. **HOW SHOULD THESE MECHANISMS BE TREATED FROM A RISK-REDUCING AND COST OF EQUITY PERSPECTIVE?**

1   A.   It is important to recognize these mechanisms in determining the cost of equity for a

2   utility, such as OG&E. Moody's, for example, states this in the reports cited above.

3   At the very least, the existence of OG&E's various existing mechanisms should

4   be recognized in the ROE determination. It should also be noted that these mechanisms

5   help reduce regulatory lag. In addition to reducing risk, reduced regulatory lag ensures

6   that utilities and their investors get their money back more quickly. I therefore

7   recommend that OG&E's ROE be set at no higher than the mid-point of the ROE range

8   for the proxy utilities.

9

10   VI.   **CAPITAL STRUCTURE AND COST OF DEBT**

11

12   Q.   **WHAT IS THE IMPORTANCE OF DETERMINING A PROPER CAPITAL**

13   **STRUCTURE IN A REGULATORY FRAMEWORK?**

14   A.   A utility's capital structure is important because the concept of rate base – rate of return

15   regulation requires the capital structure to be utilized in estimating the total cost of

16   capital. Within this framework, it is proper to ascertain whether the utility's capital

17   structure is appropriate relative to its level of business risk and relative to other utilities.

18   As discussed in Section III of my testimony, the purpose of determining the

19   proper capital structure for a utility is to ascertain its capital costs. The rate base – rate of

20   return concept recognizes the assets employed in providing utility services and provides

21   for a return on these assets by identifying the liabilities and common equity (and their

22   cost rates) used to finance the assets. The rate base is derived from the asset side of the

23   balance sheet and the cost of capital is derived from the liabilities/owners' equity side of

24   the balance sheet. The inherent assumption in making this determination is that the dollar

25   values of the capital structure and the rate base are approximately equal and the former is

26   utilized to finance the latter.

27   The common equity ratio (i.e. the percentage of common equity in the capital

28   structure) is the capital structure item which normally receives the most attention. This is

29   the case because common equity: (1) usually commands the highest cost rate; (2)

30   generates associated income tax liabilities; and (3) causes the most controversy since its

31   cost cannot be precisely determined.

1

2   Q.   **WHAT ARE THE HISTORIC CAPITAL STRUCTURE RATIOS OF OG&E AND**

3   **OGE ENERGY?**

4   A.   As to this question, I have first examined the historic (2013-2017) capital structure ratios

5   of OG&E and OGE Energy. As shown on page 1 of Schedule 6, OG&E's common

6   equity ratios have been:

7

	Including S-T Debt	Excluding S-T Debt
2013	54.2%	55.2%
2014	53.1%	53.1%
2015	54.3%	54.3%
2016	55.8%	56.2%
2017	53.5%	53.5%

8

9   A compilation of these ratios indicates that OG&E's common equity ratios have

10   been about 53 percent to 56 percent over the past five years.

11   Correspondingly, OGE Energy's common equity ratios, shown on page 2 of

12   Schedule 6, have been:

13

	Including S-T Debt	Excluding S-T Debt
2013	51.7%	55.9%
2014	53.2%	54.1%
2015	54.8%	54.8%
2016	54.6%	56.7%
2017	54.9%	56.2%

14

15   This indicates that OGE Energy, on a consolidated basis, has maintained a capital

16   structure with similar equity to those of OG&E since the creation of Enable.

17

18   Q.   **HOW DO THESE CAPITAL STRUCTURES COMPARE TO THOSE OF**

19   **INVESTOR-OWNED ELECTRIC UTILITIES?**

20   A.   Schedule 7 shows the common equity ratios (excluding short-term debt in capitalization)

21   for the groups of proxy electric utilities used in developing my ROE models and related

22   conclusions. These are:

23

	Holding Cos.	Utility Subs
Average	48.7%	51.5%
Median	49.1%	50.9%

1 This is an indication of a lower level of financial risk for OG&E and OGE Energy

2 relative to electric utilities in general. These are also lower than those of OG&E's

3 common equity ratios.

4

5 **Q.** **WHAT HAVE BEEN THE AVERAGE COMMON EQUITY RATIOS ADOPTED**

6 **BY U.S. STATE REGULATORY AGENCIES IN RECENT YEARS?**

7 A. Over the past several years, the average common equity ratios cited in U.S. state

8 regulatory electric rate proceedings have been:[35]

2012	50.69%
2013	49.25%
2014	50.28%
2015	49.54%
2016	48.91%
2017	48.74%

16 These are also lower than those of OG&E's common equity ratios. It is apparent that the

17 recently-authorized common equity ratios of electric utilities have averaged 50 percent or

18 less over this period.

19

20 **Q.** **YOU HAVE PREVIOUSLY INDICATED THAT OG&E HAS SINGLE-A**

21 **SECURITY RATINGS. HAVE YOU EXAMINED THE AVERAGE**

22 **AUTHORIZED CAPITAL STRUCTURE FOR A-RATED UTILITIES?**

23 A. Yes, I have. Schedule 8 shows the authorized capital structure ratios for A-rated electric

24 utilities that have had rate case decisions in 2016 and 2017. Over this period, the average

25 common equity ratio was 49.95 percent and the median equity ratio was 50.00 percent.

26

27 **Q.** **WHAT CAPITAL STRUCTURE IS OG&E REQUESTING IN THIS**

28 **PROCEEDING?**

29 A. OG&E is proposing the use of a capital structure with 46.66 percent debt and 53.34

30 percent common equity. This reflects the test year capital structure of OG&E.

---

[35] Regulatory Research Associates, "Regulatory Focus", January 30, 2018.

1

2   **Q.**   **DO YOU AGREE THAT THIS IS A PROPER CAPITAL STRUCTURE TO USE**

3   **FOR DETERMINING OG&E'S COST OF CAPITAL?**

4   **A.**   No, I do not.   Even though the proposed capital structure reflects the test period capital

5   structure used by the Company, I disagree with use of these percentages at this time. As I

6   indicated previously, recent equity ratios of the proxy companies, as well as electric

7   utilities involved in rate proceedings, are 50 percent or below.

8

9   **Q.**   **HAVE YOU PREVIOUSLY EXPRESSED CONCERN TO THE COMMISSION**

10   **AS TO OG&E'S COMMON EQUITY RATIO?**

11   **A.**   Yes, I have. In OG&E's last rate proceeding (Cause No. PUD 201500273 in 2016) I

12   filed testimony on behalf of OIEC in which I made the following recommendation:[36]

13

14   "I recommend that OG&E bring its equity ratio in line with the average

15   common equity ratios authorized by state regulatory commissions for

16   other electric utilities by its next base rate proceeding. If the Company

17   fails to do so, a balanced hypothetical capital structure should be imposed

18   by this Commission in the Company's next base rate proceeding. A future

19   equity ratio of no more than 50 percent is an appropriate ratio. I

20   recommend a lower common equity ratio for the following reasons:

21   •   OG&E has an excessive level of common equity;

22   •   OG&E is engaged in a relatively large capital expenditures

23   program, including environmental compliance;

24   •   OG&E has the financial capability of issuing a relatively

25   higher percentage of debt;

26   •   Interest rates are near historic low levels; and,

27   •   A higher level of debt financing would still allow OG&E to

28   remain similar to its electric utility industry peers. A 50

29   percent equity ratio would be consistent with the 49 percent

30   equity ratio estimated for OGE for 2018-2020, as noted

31   above."

32

33   I note that each of these reasons are still applicable for OG&E.

34   In that proceeding, Commission Staff witness David Garrett made a similar

35   recommendation.[37]

36

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[36]   Direct Testimony of David C. Parcell in Cause No. PUD 201500273, pages 19-20.
[37]   Testimony Summary of David Garrett, in Cause No. PUD 201500273, page 6.

1	Q.	DID THE COMMISSION COMMENT ON THESE RECOMMENDATIONS IN
2		ITS FINAL ORDER OF THAT PROCEEDING?

1   Q.   **DID THE COMMISSION COMMENT ON THESE RECOMMENDATIONS IN**
2   **ITS FINAL ORDER OF THAT PROCEEDING?**

3   A.   Yes, it did. In Order No. 662059 in OG&E's last rate proceeding (Cause No. PUD
4   201500273) the Commission stated the following (pages 5 and 6):

6   The Commission accepts the ALJ's recommendation to allow the actual
7   capital structure of OG&E. (ALJ Report, pp. 32 & 33). This would allow
8   the current capital structure of 53.31 percent equity and 46.69 percent
9   debt. Also, the Commission accepts the ALJ's recommended cost of debt
10   at 5.62 percent. (ALJ Report, pp. 31 & 33).

12   Despite accepting the recommendation of the ALJ, **the Commission is**
13   **concerned with OG&E's current equity to debt ratio, which is not in**
14   **line with averages of other utilities. OG&E should further evaluate**
15   **adjusting its equity to debt ratio to maximize the benefits of lower cost**
16   **debt, similar to that of other utilities, by its next rate proceeding.** The
17   Commission will be closely reviewing OG&E's weighted average cost of
18   capital in a future base rate proceeding and is not opposed to considering
19   utilizing a hypothetical capital structure for OG&E if sufficiently
20   persuaded based upon the evidence presented in that case.
21   **[Emphasis added]**

23   Yet, here we are in OG&E's next rate proceeding and the Company is proposing a nearly
24   identical capital structure, with 53.34 percent equity and 46.66 percent debt. No
25   acknowledgements are made by any of OG&E's witnesses concerning the Commission's
26   language and directive.

27   OG&E sponsored direct testimony by the following two financial-related
28   executives of the Company – Stephen E. Merrill (Chief Financial Officer) and Donald R.
29   Rowlett (Managing Director of Regulatory Affairs). While both of these witnesses
30   discuss COC and ROE in a general sense, neither even mentions the capital structure
31   from the perspective of the capital structure proposed by the Company or from the
32   perspective of the Commission's directives in the last case.

34   Q.   **DID OIEC ASK ANY DISCOVERY OF OG&E CONCERNING ITS LACK OF**
35   **RESPONSE TO THE COMMISSION ORDER?**

36   A.   Yes. OIEC submitted discovery questions to OG&E regarding the capital structure issue.
37   These were:

1		OIEC 2-7
2		OIEC 2-13
3		OIEC 2-14

4

5   Each of these discovery questions referenced the Commission's Order in the prior case

6   and asked the Company how it was responding to the Commission's comments and

7   directive on capital structure.   The answers received were non-specific and simply

8   referred to Dr. Morin's testimony (i.e., the ROE expert).

9

10   Mr. Merrill stated, in response to OIEC 2-13:

11   Mr. Merrill has reviewed and considered the Commission's Final Order
12   No. 662059 in Cause No. PUD 201500273, pages 5-6, regarding the level
13   of equity in the Company's capital structure and he feels that OG&E's
14   current capital structure is fair and reasonable as supported by Company
15   witness Dr. Roger Morin.
16

17   Mr. Merrill stated, in response to OIEC 2-14:

18   The Company's capital structure is discussed in the direct testimony of
19   Company witness Dr. Roger Morin starting on page 51, line 1.
20

21   This seems non-responsive by the Company management to a direct concern

22   expressed by the Commission in a Final Order. The OG&E management witnesses do

23   not even address the capital structure issue and, in discovery, simply refer to the

24   Company ROE witness.

25   Dr. Morin does address OG&E's capital structure on pages 51-57. At no place in

26   his testimony, however, does he acknowledge the Commission's concern in the prior

27   case. He attempts to provide support for the proposed capital structure only generically.

28

29 Q. **WHAT CAPITAL STRUCTURE DO YOU PROPOSE TO USE IN THIS**

30   **PROCEEDING?**

31 A. I recommend use of a hypothetical capital structure with the following percentages:

32   Long-term Debt   50.00%

33   Common Equity   50.00%

1	Q.	**WHY ARE YOU PROPOSING THIS CAPITAL STRUCTURE?**
2	A.	My proposed capital structure is more representative of the electric utility industry than is
3		OG&E's proposed capital structure. I also note that the recent and projected average
4		common equity ratios for the two proxy groups are also about 50 percent equity and 50
5		percent debt. In addition, the recently-authorized capital structures for electric utilities in
6		orders have been about 50 percent equity and 50 percent debt.
7		
8	Q.	**PLEASE EXPLAIN WHY IS NOT PROPER FOR A UTILITY SUCH AS OG&E**
9		**TO HAVE AN EQUITY RATIO THAT IS TOO HIGH.**
10	A.	As is indicated elsewhere in my Direct Testimony, the ROE is the highest cost rate of the
11		various capital structure components. In addition, the ROE is an after-tax rate (unlike
12		the cost of debt) so the already-higher ROE has to be enhanced in dollar terms for the
13		assumption of the statutory tax rate. As a result, the higher the common equity
14		component in the capital structure, the higher the COC and ultimately the revenue
15		requirement recovered in rates paid by customers.
16		As I have also indicated, OG&E is proposing an equity component that exceeds
17		that of the proxy companies, as well as that of the average common equity ratios
18		authorized in recent years for electric utilities nationwide. These are all reasons why
19		OG&E's proposed common equity ratio is excessive to ratepayers and should not be
20		approved.
21		
22	Q.	**WHAT IS THE COST RATE OF DEBT IN THE COMPANY'S APPLICATION?**
23	A.	OG&E's filing requests a cost of long term debt of 5.32 percent. This reflects the
24		September 30, 2017, cost rate for OG&E. I use this cost rate in my analyses.
25		
26	Q.	**CAN THE COST OF EQUITY BE DETERMINED WITH THE SAME DEGREE**
27		**OF PRECISION AS THE COST OF DEBT?**
28	A.	No. The cost rates of debt are largely determined by known interest payments, issue
29		prices, and related expenses. The ROE, on the other hand, cannot be precisely quantified,
30		primarily because this cost is an opportunity cost. As mentioned previously, there are

1 several models that can be employed to estimate the ROE. Three of the primary methods

2 – DCF, CAPM, and CE – are developed in the following sections of my testimony.

3

4 VII. **SELECTION OF PROXY GROUPS**

5

6 Q. **HOW HAVE YOU ESTIMATED THE COST OF EQUITY FOR OG&E?**

7 A. OG&E is a subsidiary of OGE Energy and is not publicly-traded, meaning that it is not

8 possible to directly apply ROE models to this entity. OGE Energy is a publicly-traded

9 company. Consequently, it is possible to directly apply ROE models to OGE Energy.

10 However, in cost of capital analyses, it is appropriate and customary to analyze a group

11 of comparison, or "proxy," companies as a substitute for OG&E to determine its ROE.

12 I have therefore selected such a group of publicly-traded electric and combination

13 electric/gas utilities for comparison to OG&E. Schedule 9 shows certain operational risk

14 characteristics of this group.

15 These criteria are as follows:

16 (1) Market cap of $1 billion to $10 billion;

17 (2) Common equity ratio of 40% or greater;

18 (3) Value Line Safety rank of 1 or 2;

19 (4) Standard & Poor's ("S&P") stock ranking of A or B;

20 (5) S&P and/or Moody's bond ratings of BBB or A;

21 (6) Currently pays dividends; and

22 (7) Not currently involved in a major merger or acquisition.

23

24 In addition, I have conducted studies of the ROE for most of the electric group

25 that was selected by OG&E witness Dr. Roger Morin. I exclude three companies I

26 exclude Emera and Fortis since each of those companies are based in Canada and their

27 operations are largely impacted by their Canadian operations which are subject to a

28 different regulatory regime. Neither Emera nor Fortis have First Call EPS projections in

29 Yahoo Finance. Emera, in addition, is not a component of Value Line's electric utility

1   groups, but rather is in Value Line's "Power Industry."[38] Second, I exclude Westar

2   Corp., since this entity is currently being merged with Great Plains Energy and thus does

3   not appear to satisfy Dr. Morin's selection criteria.

4

5 Q. **PLEASE EXPLAIN WHY YOU ARE USING TWO PROXY GROUPS IN YOUR**

6   **ROE ANALYSES.**

7 A.   It has long been my practice to develop my own independently determined proxy group

8   and to also conduct cost of equity analyses on the utility witness' proxy group. My

9   conclusions and recommendations, in turn, are based upon my review of the results of

10   both proxy groups.

11

12 VIII. **DISCOUNTED CASH FLOW ANALYSIS**

13

14 Q. **WHAT IS THE THEORY AND METHODOLOGICAL BASIS OF THE DCF**

15   **MODEL?**

16 A.   The DCF model is one of the oldest and most commonly-used models for estimating the

17   ROE for public utilities[39]. The DCF model is based on the "dividend discount model" of

18   financial theory, which maintains that the value (price) of any security or commodity is

19   the discounted present value of all future cash flows.

20   The DCF model is based upon two fundamental principles. First, DCF is based

21   on the postulate that investors value an asset on the basis of the future cash flows (i.e.,

22   dividends and ultimate sales in the case of common stocks) they expect to receive from

23   owning the asset. The second DCF principle is that investors value a dollar received in

24   the future less than a dollar received today (i.e., the "time value of money"). Within this

25   context, the current price of a company's stock is equal to the present value equivalent of

26   the expected dividends and the proceeds from eventually selling the stock. The discount

27   rate that equates the future anticipated dividends and future anticipated selling price with

28   the current market price is the cost of common equity.

---

[38]   Value Line, March 28, 2018. This group primarily includes unregulated companies involved in power
generation.
[39]   In fact, certain regulatory commissions, such as the Federal Energy Regulatory Commission, primarily rely
on the DCF model to set costs of equity for public utilities.

1   The DCF model is based upon the concept that the value of a share of stock is the

2   discounted present worth of all the dividends to be received on that share. The equation

3   is:

$$P = \frac{C_1}{(1 + K_1)} + \frac{C_2}{(1 + K_2)^2} + \cdots + \frac{C_n}{(1 + K_n)^n}$$

4

5   where: P = current value or price

6   C_1 = cash flow in period 1, etc.

7   K_1 = discount rate in period 1, etc.

8   n = infinity

9   This relationship can be simplified if dividends are assumed to grow at a constant rate of

10   g. As a result, the equation above can be reduced to:

11

$$P = \frac{D}{(K-g)}$$

12   which, when solved for K results in:

13

$$K = \frac{D}{P} + g$$

14   where: P = current price

15   D = current dividend rate

16   K = discount rate (cost of capital)

17   g = constant rate of expected growth

18

19   This formula essentially recognizes that the return expected or required by

20   investors is comprised of two factors: the dividend yield (current income) and expected

21   growth in dividends (future income).

22

23   **Q.**   **PLEASE EXPLAIN HOW YOU EMPLOY THE DCF MODEL.**

24   A.   I use the constant growth DCF model. In doing so, I combine the current dividend yield

25   for each of the proxy utility stocks described in the previous section with several

26   indicators of expected dividend growth.

27

28   **Q.**   **HOW DID YOU DERIVE THE DIVIDEND YIELD COMPONENT OF THE DCF**

29   **EQUATION?**

1   A.   Several methods can be used to calculate the dividend yield component. These methods
2   generally differ in the manner in which the dividend rate is employed (i.e., current versus
3   future dividends or annual versus quarterly compounding variant). I use a version of the
4   quarterly compounding variant, which is expressed as follows:

$$Yield = \frac{D_0(1 + 0.5g)}{P_0}$$

6   This dividend yield component recognizes the timing of dividend payments and dividend
7   increases.

8   The P_0 in my yield calculation is the average of the high and low stock price for
9   each proxy company for the most recent three-month period (January-March 2018). The
10   D_0 is the current annualized dividend rate for each proxy company.

11

12   Q.   **HOW DO YOU ESTIMATE THE DIVIDEND GROWTH COMPONENT OF THE**
13   **DCF EQUATION?**

14   A.   The DCF model's dividend growth rate component is usually the most crucial and
15   controversial element involved in using this methodology. The objective of estimating
16   the dividend growth component is to reflect the growth expected by investors that is
17   embodied in the price (and yield) of a company's stock. As such, it is important to
18   recognize that individual investors have different expectations and consider alternative
19   indicators in deriving their expectations. This is evidenced by the fact that every
20   investment decision resulting in the purchase of a particular stock is matched by another
21   investment decision to sell that stock.

22   A wide array of indicators exists for estimating investors' growth expectations.
23   As a result, it is evident that investors do not always use one single indicator of growth.
24   It therefore is necessary to consider alternative dividend growth indicators in deriving the
25   growth component of the DCF model. I have considered five indicators of growth in my
26   DCF analyses. These are:
27   1.   Years 2013-2017 (5-year average) earnings retention, or fundamental growth (per
28   Value Line);
29   2.   Five-year average of historic growth in earnings per share (EPS), dividends per
30   share (DPS), and book value per share (BVPS) (per Value Line);

36

1   3.   Years 2018, 2019 and 2021-2023 projections of earnings retention growth (per
2   Value Line);
3   4.   Years 2015-2017 to 2021-2023 projections of EPS, DPS, and BVPS (per Value
4   Line); and
5   5.   Five-year projections of EPS growth (per First Call).
6
7   I believe this combination of growth indicators is a representative and appropriate
8   set with which to begin the process of estimating investor expectations of dividend
9   growth for the groups of proxy companies. I also believe that these growth indicators
10   reflect the types of information that investors consider in making their investment
11   decisions. As I indicated previously, investors have an array of information available to
12   them, all of which would be expected to have some impact on their decision-making
13   process.
14
15   **Q.   PLEASE DESCRIBE YOUR DCF CALCULATIONS.**
16   A.   Schedule 10 presents my DCF analysis. Page 1 shows the calculation of the "raw" (i.e.,
17   prior to adjustment for growth) dividend yield for each proxy company. Pages 2 and 3
18   show the growth rates for the group of proxy companies. Page 4 shows the DCF
19   calculations, which are presented on several bases: mean, median, low and high values.
20   These results can be summarized as follows:

	Mean	Median	Mean Low[40]	Mean High[41]	Median Low[42]	Median High[43]
Parcell Proxy Group	8.0%	7.7%	6.9%	9.0%	7.1%	8.8%
Morin Proxy Group	8.3%	8.3%	7.5%	8.9%	7.2%	8.9%

21
22   I note that the individual DCF calculations shown on Schedule 10 should not be
23   interpreted to reflect the expected cost of capital for individual companies in the proxy
24   groups; rather, the individual values shown should be interpreted as alternative
25   information considered by investors.

---

[40]   Using the lowest mean growth rate.
[41]   Using only the highest mean growth rate.
[42]   Using the lowest median growth rate.
[43]   Using the highest median growth rate.

1

2   **Q.**   **WHAT DO YOU CONCLUDE FROM YOUR DCF ANALYSES?**

3   A.   The DCF rates resulting from the analysis of the proxy groups fall into a wide range

4   between 6.9 percent and 9.0 percent. The highest DCF rates are 8.8 percent to 9.0

5   percent.

6   I believe a range of 8.8 percent to 9.0 percent represents the current DCF-derived

7   ROE for the proxy groups at this time. This range includes the highest DCF rates and

8   exceeds the low and mean and median DCF rates. I recommend a DCF ROE of 8.90

9   percent for OG&E, which focuses on the average of highest DCF rates (i.e., range of 8.8

10   percent to 9.0 percent) and exceeds the low and mean and median DCF rates.

11   I observe that the constant growth DCF model currently produces cost of equity

12   results that are lower than has been the case in recent years. This is, in part, a reflection

13   of the decline in capital costs (e.g., in terms of interest rates). I believe that the constant-

14   growth DCF model remains relevant and informative. It is also my personal experience

15   that this model is used the most by cost of capital witnesses of all the available ROE

16   models. Nevertheless, in order to be conservative, I have focused only on the highest of

17   the DCF results in making my recommendations. As such, I have not given consideration

18   to the lower calculated DCF results.

19

20   **IX.**   **CAPITAL ASSET PRICING MODEL ANALYSIS**

21

22   **Q.**   **PLEASE DESCRIBE THE THEORY AND METHODOLOGICAL BASIS OF**

23   **THE CAPM.**

24   A.   The CAPM describes the relationship between a security's investment risk and its market

25   rate of return. This relationship identifies the rate of return which investors expect a

26   security to earn so that its market return is comparable with the market returns earned by

27   other securities that have similar risk.

28   The relationship is specified by the Security Market Line (SML). As indicated in

29   the figure below, the SML indicates the relationship between each security's or

30   portfolio's "beta" and its resulting expected return. The SML sets forth the "betas" and

1 corresponding expected returns of all securities and portfolios of securities that are

2 available in the capital market at a given moment in time.

3

**Figure 6.1
Security Market Line**

Expected
Return

SML

Risk (beta)

4

5
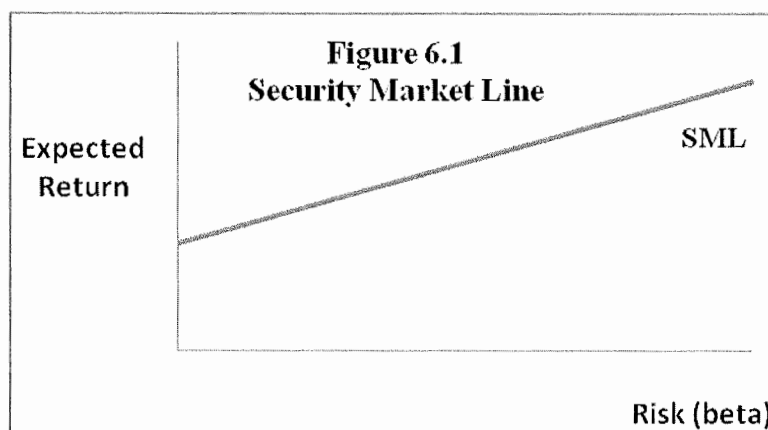
6 Beta is an indicator of investment risk. It is a measure of the expected amount of

7 change in a security's price that results from a change in the overall market's security

8 prices. As such, beta indicates the security's variability of return relative to the return

9 variability of the overall capital market.

10 Variability of market returns is a measure of risk and is caused by two general

11 factors. First, changes in economic, social, and political conditions affect the risk

12 structure and market prices of all securities. Changes in these factors consequently cause

13 the market return to vary. This is referred to as market risk or systematic risk. Second,

14 each company and industry have unique business and financial attributes, which also

15 cause returns and prices to vary. This is known as firm-specific risk or unsystematic (or

16 non-systematic) risk.

17 Investors can, through diversification of their security holdings, substantially

18 reduce or eliminate the return variation caused by the second general factor (i.e., the

19 unique business and financial attributes). However, the return variance or risk caused by

20 the first factor (changes in economic, social, and political conditions) cannot be

21 eliminated because changes in these factors impact all securities to some degree.

22 Consequently, in a diversified portfolio of securities, it is the risk associated with

23 the first factor that commands the return premium to attract investor capital. Beta, a

24 measure of a security's return variability relative to the return variability of the market as

1		a whole, is an indicator of the risk associated with the first factor. The SML specifies the
2		relationship between the non-diversifiable or systematic risk and the return premium
3		required to be comparable with other securities of similar risk. This relationship is
4		known as CAPM.
5		
6	Q.	**HOW IS THE CAPM DERIVED?**
7	A.	The general form of the CAPM is:

$$K = R_f + \beta(R_m - R_f)$$

where: K = cost of equity

R_f = risk free rate

R_m = return on market

β = beta

R_m-R_f = market risk premium

The CAPM is a variant of the risk premium ("RP") method. I believe the CAPM is generally superior to the simple RP method because the CAPM specifically recognizes the risk of a particular company or industry (i.e., beta), whereas the simple RP method assumes the same cost of equity for all companies exhibiting similar bond ratings or other characteristics.

Q. **WHAT DO YOU USE FOR THE RISK-FREE RATE?**

A. The first input of the CAPM is the risk-free rate (R_f). The risk-free rate reflects the level of return that can be achieved without accepting any risk.

In CAPM applications, the risk-free rate is generally recognized by use of U.S. Treasury securities. Two general types of U.S. Treasury securities are often utilized as the R_f component, short-term U.S. Treasury bills and long-term U.S. Treasury bonds.

I have performed CAPM calculations using the three-month average yield (January-March 2018) for 20-year U.S. Treasury bonds. I use the yields on long-term Treasury bonds since this matches the long-term perspective of ROE analyses. Over this three-month period, these bonds had an average yield of 2.91 percent.

| | | Q. | WHAT IS BETA AND WHAT BETAS DO YOU EMPLOY IN YOUR CAPM? |

1   Q.   **WHAT IS BETA AND WHAT BETAS DO YOU EMPLOY IN YOUR CAPM?**

2   A.   Beta is a measure of the relative volatility (and thus risk) of a particular stock in relation

3   to the overall market. Betas less than 1.0 are considered less risky than the market,

4   whereas betas greater than 1.0 are riskier. Utility stocks traditionally have had betas

5   below 1.0. I utilize the most recent Value Line betas for each company in my proxy

6   group.

7

8   Q.   **HOW DO YOU ESTIMATE THE MARKET RISK PREMIUM COMPONENT?**

9   A.   The market risk premium component (R_m-R_f) represents the investor-expected premium

10   of common stocks over the risk-free rate, or long-term government bonds. For the

11   purpose of estimating the market risk premium, I considered alternative measures of

12   returns of the S&P 500 (a broad-based group of large U.S. companies) and 20-year U.S.

13   Treasury bonds (i.e., the same timeframe as employed in the Duff & Phelps source[44] used

14   to develop risk premiums).

15   First, I compared the actual annual returns on equity of the S&P 500 with the

16   actual annual yields of U.S. Treasury bonds. Schedule 11 shows the earned returns on

17   equity for the S&P 500 group for the period 1978-2016 (all available years reported by

18   S&P). This schedule also indicates the annual yields on 20-year U.S. Treasury bonds and

19   the annual differentials (i.e., risk premiums) between the S&P 500 and U.S. Treasury 20-

20   year bonds. Based upon these returns, I conclude that the risk premium from this

21   analysis is 7.0 percent.

22   I next considered the total returns (i.e., dividends/interest plus capital

23   gains/losses) for the S&P 500 group as well as for long-term government bonds, as

24   tabulated by Duff & Phelps, using both arithmetic and geometric means. I considered the

25   total returns for the entire 1926-2016 period, which are as follows:

26

	S&P 500	L-T Gov't Bonds	Risk Premium
Arithmetic	12.0%	6.0%	6.0%
Geometric	10.0%	5.5%	4.5%

27

[44] 2017 SBBI Yearbook, Stocks, Bonds, Bills and Inflation. U.S. Capital Markets Performance by Asset Class 1926-2016, Duff and Phelps.

1   I conclude from this analysis that the expected risk premium is about 5.8 percent (i.e., the

2   average of all three risk premiums: 7.0 percent from Schedule 11; 6.0 percent arithmetic

3   and 4.5 percent geometric from Duff & Phelps). I believe that a combination of

4   arithmetic and geometric means is appropriate since investors have access to both types

5   of means[45] and presumably, both types are reflected in investment decisions and thus,

6   stock prices and the cost of equity.

7

8   Q.   PLEASE DEFINE THE CONCEPTS OF ARITHMETIC MEAN AND

9   GEOMETRIC MEAN AND DESCRIBE WHY BOTH ARE RELEVANT TO

10   INVESTORS.

11   A.   The arithmetic mean is the average of period (e.g., annual) changes in a statistic, such as

12   investor returns. The geometric mean is a compound return of a period. The table below

13   describes each for a sample period:

14

Period	Value	Return
1	$10	
2	$11	10% ($1 return on $10 base)
3	$12	9% ($1 return on $11 base)
4	$11	-8% (-$1 loss on $12 base)
5	$12	9% ($1 return on $11 base)

15

16   In this example, the arithmetic return is the average of the annual "Return"

17   figures, which is 5 percent (i.e., 10% +9% - 8% + 9% divided by 4). The arithmetic

18   return thus gives consideration to the return level for each period.

19   The geometric return is the compound return over the four-year period, in which

20   the value increased from $10 to $12, which is 20 percent over a four-year period, or 4.66

21   percent. The geometric mean thus is concerned with the total return over the period

22   without consideration of individual period averages.

23   Arithmetic returns are always higher than geometric returns. This is the case

24   since the individual period returns in an arithmetic sense are not "compounded" which

25   requires them to be higher. Both types of returns are relevant to investors and both are

---

[45]   For example, Value Line uses compound (i.e., geometric) growth rates in its projection. In addition,
mutual funds report growth rates on a compound basis.

1		reported to investors. Investors are concerned with period returns, but over a given	
2		period of time it is the geometric return that indicates their actual gain or loss. As a	
3		result, I consider both in my analyses of the risk premium component.	
4			

5   Q.   **WHAT ARE YOUR CAPM RESULTS?**

6   A.   Schedule 12 shows my CAPM calculations. The results are:

7

	Mean	Median
Parcell Proxy Group	7.3%	7.0%
Morin Proxy Group	7.1%	7.0%

8

9   Q.   **WHAT IS YOUR CONCLUSION CONCERNING THE CAPM COST OF**
10   **EQUITY?**

11 A.   The CAPM results collectively indicate a ROE of 7.0 percent to 7.3 percent (7.15 percent
12   mid-point) for the groups of proxy utilities. I conclude that an appropriate CAPM ROE
13   estimation for OG&E is 7.15 percent.

14

15 X.   **COMPARABLE EARNINGS ANALYSIS**

16

17 Q.   **PLEASE DESCRIBE THE BASIS OF THE CE METHODOLOGY.**

18 A.   This method is based upon the economic concept of "opportunity cost." As noted
19   previously the cost of capital is an opportunity cost: the prospective return available to
20   investors from alternative investments of similar risk. If, in the opinion of those who
21   save and commit capital, the prospective return from a given investment is not equal to
22   that available from other investments of similar risk, the available capital will tend to be
23   shifted to the alternative investments. Through this mechanism, opportunity-cost-driven
24   pricing signals direct capital to its most productive uses; thus, a free enterprise system
25   promotes an efficient allocation of scarce resources.

26   The established legal standards are consistent with the opportunity cost principle.
27   The two Supreme Court cases most frequently cited (*Bluefield* and *Hope*) hold that: the
28   return to the equity owners be sufficient to maintain the credit of the enterprise and
29   confidence in its financial integrity; to permit the enterprise to attract required additional

1   capital on reasonable terms; and, to provide the enterprise and its investors with an

2   earnings opportunity commensurate with the returns available on investments in other

3   enterprises having corresponding risks.

4   These three interrelated criteria constitute a succinct statement of the opportunity

5   cost principle. An expected return on equity equal to that which can be realized on

6   alternative investments of corresponding risk will, in turn, be sufficient to assure

7   confidence in the financial integrity of the enterprise, to maintain its credit, and to permit

8   it to attract new capital on reasonable terms.

9   The comparable earnings method is designed to measure the returns expected to

10   be earned on the original cost book value of similar risk enterprises. This method

11   provides a direct measure of the fair return, since it translates into practice the

12   competitive principle upon which regulation rests. Thus, it provides a direct measure of

13   the fair return, since it translates into practice the competitive principle upon which

14   regulation rests.

15   The CE method normally examines the experienced and/or projected return on

16   book common equity. The logic for examining returns on book equity follows from the

17   use of original cost rate base regulation for public utilities, which uses a utility's book

18   common equity to determine the cost of capital. This COC is, in turn, used as the fair

19   rate of return which is then applied (multiplied) to the book value of rate base to establish

20   the dollar level of capital costs to be recovered by the utility. This technique is thus

21   consistent with the rate base – rate of return methodology used to set utility rates.

22

23   Q.   **HOW DO YOU APPLY THE CE METHODOLOGY IN YOUR ANALYSIS OF**

24   **OG&E'S ROE?**

25   A.   I apply the CE methodology by examining realized returns on equity (ROEs) for the

26   groups of proxy companies, as well as unregulated companies, and evaluating investor

27   acceptance of these returns by reference to the resulting market-to-book ratios ("M/Bs").

28   By use of this method, it is possible to assess the degree to which a given level of return

29   equates to the cost of capital. It is generally recognized for utilities that an M/B of

30   greater than one (i.e., 100 percent) reflects a situation where a company is able to attract

31   new equity capital without dilution (i.e., above book value). As a result, one objective of

44

1		a fair ROE is the maintenance of stock prices at or above book value. It is also apparent
2		that a utility M/B significantly above 1.0 protects existing shareholders from "dilution"
3		that occurs when new shares of equity are sold for a price less than book value.
4		I further note that my CE analysis is based upon market data (through the use of
5		M/Bs) and is thus essentially a market test. As a result, my CE analysis is not subject to
6		the criticisms occasionally made by some who maintain that past earned ROEs do not
7		necessarily represent the cost of capital. In addition, my CE analysis also uses
8		prospective returns and thus is not strictly backward looking.

10 **Q. IS YOUR CE ANALYSIS BASED UPON AN ASSUMPTION THAT ROEs ARE**
11 **THE ONLY FACTOR INFLUENCING STOCK PRICES AND M/BS?**

12 A. No, it is not. I do not assume that earned ROEs are the sole determinant of M/Bs.
13 Rather, I demonstrate that M/Bs are important to public utilities and they correspondingly
14 reflect investors' assessment of the value of utility stocks relative to their respective book
15 value, which is the basis on which their rates are established by regulatory commissions.

17 **Q. WHAT TIME PERIODS DO YOU EXAMINE IN YOUR CE ANALYSIS?**

18 A. My CE analysis considers the experienced ROEs of the proxy groups of utilities for the
19 period 2002-2017 (i.e., the last sixteen years). The CE analysis requires that I examine a
20 relatively long period of time in order to determine trends in earnings over at least a full
21 business cycle. Further, in estimating a fair level of return for a future period, it is
22 important to examine earnings over a diverse period of time in order to avoid any undue
23 influence from unusual or abnormal conditions that may occur in a single year or shorter
24 period. Therefore, in forming my judgment of the current ROE, I focused on two
25 periods: 2009-2017 (the current business cycle) and 2002-2008 (the most recent past
26 business cycle). I have also considered projected ROEs for 2018, 2019 and 2021-2023
27 (i.e., the time periods estimated by Value Line).

29 **Q. PLEASE DESCRIBE YOUR CE ANALYSIS.**

1   A.   Schedule 13 and Schedule 14 contain summaries of experienced ROEs and M/Bs for

2   three groups of companies, while Schedule 15 presents a risk comparison of utilities

3   versus unregulated firms.

4   Schedule 13 shows the achieved ROEs and M/Bs for the groups of proxy utilities.

5   These can be summarized as follows:

6

	Parcell Proxy Group	Morin Proxy Group
Historic ROE		
Mean	9.4-9.5%	10.2-11.3%
Median	9.3%	9.8-11.5%
Historic M/B		
Mean	153-156%	160-174%
Median	151-153%	153-165%
Prospective ROE		
Mean	9.4-10.0%	10.1-11.2%
Median	9.5-10.5%	9.8-10.5%

7

8   These results indicate that historic ROEs of 9.3 percent to 11.5 percent have been

9   adequate to produce M/Bs of 151 percent to 174 percent for the groups of utilities.

10   Furthermore, projected ROEs for 2018, 2019 and 2021-2023 are within a range of 9.4

11   percent to 11.2 percent for the utility groups. These relate to 2017 M/Bs of 190 percent

12   or greater.   It is apparent that both the ROEs and M/Bs of the Morin proxy group exceed

13   those of my proxy group. This is further demonstration of the direct relationship between

14   ROE and M/B.

15

16   Q.   **DO YOU ALSO REVIEW THE EARNINGS OF UNREGULATED FIRMS?**

17   A.   Yes. As an alternative, I also examine the S&P's 500 Composite group. This is a well

18   recognized group of firms that is widely utilized in the investment community and is

19   indicative of the competitive sector of the economy. Schedule 14 presents the earned

20   ROEs and M/Bs for the S&P 500 group over the past fifteen years (i.e., 2002-2016). As

21   this schedule indicates, over the two business cycle periods, this group's average ROEs

22   ranged from 12.4 percent to 13.3 percent, with average M/Bs ranging between 233

23   percent and 275 percent.

24

1	Q.	HOW CAN THE ABOVE INFORMATION BE USED TO ESTIMATE OG&E'S
2		COST OF EQUITY?

1   Q.   **HOW CAN THE ABOVE INFORMATION BE USED TO ESTIMATE OG&E'S**
2   **COST OF EQUITY?**

3   A.   The recent and prospective ROEs of the proxy utilities and S&P 500 groups can be

4   viewed as an indication of the level of return realized and expected in the regulated and

5   competitive sectors of the economy. In order to apply these returns to the cost of equity

6   for the proxy utilities, however, it is necessary to compare the risk levels of the electric

7   utilities and the competitive companies. I do this in Schedule 15, which compares several

8   risk indicators for the S&P 500 group and the electric utility groups. The information in

9   this schedule indicates that the S&P 500 group is riskier than the electric utility proxy

10   groups.

11

12   Q.   **WHAT ROE IS INDICATED BY YOUR CE ANALYSIS?**

13   A.   Based on recent and prospective ROEs and M/Bs, my CE analysis indicates that the ROE

14   for the proxy utilities is no more than 9.0 percent to 10.0 percent (9.5 percent mid-point).

15   Recent ROEs of 9.3 percent to 11.5 percent have resulted in M/Bs more than 150 percent.

16   Prospective ROEs of 9.4 percent to 11.2 percent have been accompanied by M/Bs over

17   190 percent. As a result, it is apparent that authorized returns below this level would

18   continue to result in M/Bs of well above 100 percent. As I indicated earlier, the fact that

19   M/Bs substantially exceed 100 percent indicates that historic and prospective ROEs of

20   9.5 percent reflect earning levels that are well above the actual earned ROE for those

21   regulated companies. I also note that a company whose stock sells above book value can

22   attract capital in a way that enhances the book value of existing stockholders, thus

23   creating a favorable environment for financial integrity. My specific CE

24   recommendation is the mid-point of this range, or 9.5 percent.

25

26   XI.   **RETURN ON EQUITY RECOMMENDATION**

27

28   Q.   **PLEASE SUMMARIZE THE RESULTS OF YOUR THREE ROE ANALYSES.**

29   A.   My three ROE analyses produced the following:

30

31

	Recommendation
DCF	8.90%
CAPM	7.15%
CE	9.50%

1   These results indicate an overall broad range of 7.15 percent to 9.50 percent. I

2   recommend a ROE range of 8.90 percent to 9.50 percent for OG&E. This range includes

3   my DCF result (8.90 percent), and my CE result (9.50 percent). Specifically, I

4   recommend a ROE of 9.20 percent for OG&E, the mid-point of this range.

5

6   **Q.   IT APPEARS THAT YOUR CAPM RESULTS ARE LESS THAN YOUR DCF**

7   **AND CE RESULTS. DO YOU DIRECTLY CONSIDER THE CAPM RESULTS**

8   **IN DETERMINING THE ROE FOR OG&E?**

9   A.   Not at this time. I have conducted CAPM studies in my cost of equity analyses for many

10   years. It is apparent that the CAPM results are currently significantly less than the DCF

11   and CE results. There are two reasons for the lower CAPM results. First, risk premiums

12   are lower currently than was the case in prior years. This is the result of lower equity

13   returns that have been experienced beginning with the Great Recession and continuing

14   over the past several years. This is also reflective of a decline in investor expectations of

15   equity returns and risk premiums. Second, the level of interest rates on U.S. Treasury

16   bonds (i.e., the risk-free rate) has been lower in recent years. This is partially the result

17   of the actions of the Federal Reserve to stimulate the economy. This also impacts

18   investor expectations of returns in a negative fashion.

19   I note that, initially, investors may have believed that the decline in U.S. Treasury

20   yields was a temporary factor that would soon be replaced by a rise in interest rates.

21   However, this has not been the case as interest rates have remained low and continued to

22   decline for most of the past seven-plus years. As a result, it cannot be maintained that

23   low interest rates (and low CAPM results) are temporary and do not reflect investor

24   expectations. Consequently, the CAPM results should be considered as one factor in

25   determining the ROE for OG&E. Even though I do not factor the CAPM results directly

26   into my cost of equity recommendation, I do believe these lower results are indicative of

27   the recent and continuing decline in utility costs of capital, including ROE.

28

| 1 | **XII.** | **TOTAL COST OF CAPITAL** |

2

3	**Q.**	**WHAT IS THE TOTAL COST OF CAPITAL FOR OG&E?**
4	A.	Schedule 1 reflects the COC for OG&E using my proposed capital structure and
5		embedded cost of debt, as well as my ROE recommendations. The resulting total COC is
6		a range of 7.11 percent to 7.41 percent. I recommend a COC of 7.26 percent for OG&E,
7		which incorporates a ROE of 9.20 percent.

8

| 9 | **XIII.** | **COMMENTS ON THE COMPANY'S TESTIMONY** |

10

11	**Q.**	**WHAT COC HAS OG&E REQUESTED IN ITS APPLICATION?**
12	A.	The Company's filing requests a total COC of 7.763 percent, which incorporates a ROE
13		of 9.90 percent. The 9.90 percent requested ROE is set forth in the testimony of OG&E
14		witness Dr. Roger A. Morin.
15		Dr. Morin's ROE estimates are summarized below:[46]

16

Study	ROE
Integrated Utilities Value Line Growth	9.3%
Integrated Utilities Analysts Growth	9.3%
Traditional CAPM	9.6%
Empirical CAPM	10.1%
Historical Risk Premium Electric	10.7%
Allowed Risk Premium	10.5%
Average	**9.9%**
Median	**9.9%**
Truncated Mean	**9.9%**

17

18	**Q.**	**DO YOU HAVE ANY DISAGREEMENTS WITH DR. MORIN'S ROE**
19		**CONCLUSIONS?**
20	A.	Yes, I do. Each of his ROE methodologies over-states, to some degree, the required ROE
21		for OG&E. In addition, as I noted previously, I disagree with the inclusion of three of the
22		companies in his proxy group.

23

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[46] Direct Testimony of Roger A. Morin, page 50, Table 6.

1 Q. **WHAT IS YOUR UNDERSTANDING OF DR. MORIN'S DCF ANALYSES?**

2

3

4 A. Dr. Morin performs two sets of DCF analyses for his proxy group of electric utilities,

5 using data as of November 2017.[47] In these analyses, he uses "spot" dividend yield for

6 each company. For the growth rates, he used two indicators of growth – 5-year EPS

7 growth projections and Value Line projections of EPS growth.

8 The major problem with Dr. Morin's DCF analyses is the fact that he has used

9 only one indicator of growth – projections of EPS growth. As I indicated in my DCF

10 analysis, it is proper to use alternative measures of growth.

11 Dr. Morin's DCF analyses implicitly assume that investors rely exclusively on

12 EPS projections in making investment decisions. This is a very dubious assumption and

13 Dr. Morin has offered no evidence that it is correct. I note, for example, that Value Line

14 – one of the sources of his growth rate estimates – contains many statistics, both of a

15 historic and projected nature, for the benefit of investors who subscribe to this publication

16 and presumably make investment decisions based at least in part from the information

17 contained in Value Line. Yet, Dr. Morin would have us believe that Value Line

18 subscribers and investors focus exclusively on one single number from this publication.

19 I note in this regard that the DCF model is a "cash flow" model. The cash flow to

20 investors in a DCF framework is from dividends. Dr. Morin's DCF model, in contrast,

21 does not even consider dividend growth rates. As a result, his DCF growth rates do not

22 properly reflect the "cash" aspect of the Discounted "Cash" flow model.

23

24 Q. **PLEASE BRIEFLY DESCRIBE THE CONCEPT OF FLOTATION COSTS IN**

25 **THE DETERMINATION OF THE ROE FOR A UTILITY.**

26 A. The concept of a flotation cost adjustment reflects a claim sometimes made that the ROE

27 results, as developed by ROE models such as DCF CAPM and RP, need to be adjusted

28 upward to reflect any costs associated with the issuance of new common equity shares.

29 The underlying assumptions for a flotation cost adjustment is that such costs actually

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[47] Morin, Exhs. RAM-4 and RAM-5.

1		exist and that recognition of these perceived costs are not reflected in market-based
2		models, such as those noted above.
3		
4	Q.	DR. MORIN CITES THE NEED TO CONSIDER A FLOTATION COST
5		ADJUSTMENT TO EACH OF HIS ROE MODEL RESULTS. IS THIS PROPER?
6	A.	No, it is not. There has been no demonstration that OGE Energy has or intends to issue
7		new common equity for the purpose of infusing equity into OG&E. As noted previously
8		OG&E has a higher equity ratio than other electric utilities, which indicates that there is
9		less need to further increase OG&E's equity. In addition, should OGE Energy issue new
10		shares of common stock, the existence of its stock well above book value indicates that
11		existing shareholders will have their book value enhanced. Thus, there is no need for any
12		further return associated with flotation costs, to the extent they exist.
13		I note that Dr. Morin's DCF results, exclusive of his flotation adjustment, are 9.15
14		percent for the DCF with analysts' EPS forecasts and 9.09 percent for the DCF results
15		with Value Line's EPS forecasts.[48] Both of these results are consistent with my ROE
16		recommendation for OG&E.
17		
18	Q.	WHAT IS YOUR UNDERSTANDING OF DR. MORIN'S CAPM ANALYSES?
19	A.	Dr. Morin performs CAPM analyses for his proxy group of electric utilities (0.71 average
20		beta). He combines this 0.71 beta with a 4.4 percent "forecast" cost of long-term (30-
21		year) U.S. Treasury bonds and a 7.0 percent risk premium to get the following CAPM
22		results[49]:
23		
24		$$K = RF + \beta(RP) + flot. = 4.4\% + 0.71(7.0\%) + 0.2\% = 9.6\%$$
25		
26	Q.	DO YOU AGREE WITH THIS CAPM ANALYSIS?
27	A.	No, I do not.
28		

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[48] Direct Testimony of Roger A. Morin, pages 26 and 27.
[49] Direct Testimony of Roger A. Morin, page 38, lines 6-10.

1	Q.	**WITH WHICH COMPONENTS OF HIS CAPM ANALYSIS DO YOU**
2		**DISAGREE?**
3	A.	I disagree with the use of forecasted interest rates; the risk premium component; and his
4		flotation cost adjustment (discussed above).
5		
6	Q.	**WHY IS IT NOT PROPER TO USE PROJECTED INTEREST RATES AS THE**
7		**RISK-FREE RATE?**
8	A.	It is proper to use the current (i.e., actual) yield as the risk-free rate in a CAPM context.
9		This is the case since the current yield is known and measurable and reflects investors'
10		collective assessment of all known capital market conditions. Prospective interest rates,
11		in contrast, are not measurable and not achievable. For example, if the current yield on
12		20-year U.S. Treasury bonds is about 3.0 percent, this reflects the rate that investors can
13		actually receive on their investment. Investors cannot receive a prospective yield on their
14		investments since such a yield is not actual but rather speculative.
15		Use of the current risk-free rate in a CAPM context is similar to using the current
16		yield in a DCF context. Analysts do not use prospective stock prices as the basis for the
17		dividend yield in a DCF analysis, as use of prospective stock prices is speculative. Use of
18		current stock prices is appropriate, as are used by Dr. Morin. Likewise, current levels of
19		interest rates reflect all current information (i.e., the efficient market hypothesis) and
20		should be used as the risk-free rate in the CAPM. In addition, actual yields, not projected
21		yields, are used by Dr. Morin in the development of his proposed risk premium.
22		
23	Q.	**DID OG&E'S ROE WITNESS IN THE COMPANY'S LAST RATE**
24		**PROCEEDING ALSO USE FORECASTED INTEREST RATES IN HIS**
25		**ANALYSES AND CONCLUSIONS/RECOMMENDATIONS?**
26	A.	Yes. In Cause No. 201500273, OG&E's ROE witness was Robert B. Hevert. In his
27		CAPM and "Bond Yield Plus Risk Premium" methodologies, Mr. Hevert proposed use of
28		the following projected yields of 30-year U.S. Treasury bonds:[50]
29		Near-Term Projected Yield 3.48%
30		Long-Term Projected Yield 4.90%

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[50] Direct Testimony of Robert B. Hevert in Cause No. 201500273, page 34.

1

2   Q.   **HOW DO THESE PROJECTIONS OF 30-YEAR U.S. TREASURY BONDS, AS**

3   **USED BY OG&E'S ROE WITNESS IN 2016, COMPARE TO THE ACTUAL**

4   **YIELDS SINCE THAT TIME?**

5   A.   These projected yields, as employed by OG&E witness Hevert in his ROE

6   recommendation for the Company, greatly exceed the actual yields since Mr. Hevert

7   recommended their use. The table below shows the actual yields on 30-year U.S.

8   Treasury bonds since 2015:

	OG&E- Hevert	Annual	High Month	Low Month
2015	3.48-4.90%	2.84%	3.11%	2.46%
2016	3.48-4.90%	2.59%	3.11%	2.23%
2017	3.48-4.90%	2.89%	3.08%	2.77%
2018 (3 months)	3.48-4.90%	3.03%	3.13%	2.88%

9

10   These actual yields all exceed the projected yields proposed by OG&E witness Hevert in

11   the last proceeding. Had the Commission accepted Mr. Hevert's use of projected interest

12   rates in making its authorized ROE for the Company, it would have resulted in an

13   excessive ROE for the Company.

14

15 Q.   **WHAT IS YOUR DISAGREEMENT WITH DR. MORIN'S MARKET RISK**

16   **PREMIUM COMPONENT?**

17 A.   Dr. Morin's 7.0 percent risk premium is partially derived from the 1926-2016 Duff &

18   Phelps (formerly Morningstar/Ibbotson) study (cited previously) showing a 7.0 percent

19   differential between the total return component of common stocks and the "income

20   component" of U.S. Treasury bonds.[51]

21   I disagree with the proposed use of this study since Dr. Morin improperly used

22   "income returns" from the Duff & Phelps study rather than "total returns." What Dr.

23   Morin did was compare the differential between total returns for common stocks (i.e.,

24   dividends and capital gains) and only income returns for Treasury bonds. As such, he has

25   ignored the capital gains component of the Treasury bonds return. As I indicated in my

26   earlier testimony, the differential between total returns of common stocks and U.S.

---

[51]   Direct Testimony of Roger A. Morin, pages 32-33.

1		Treasury bonds is 6.0 percent (a figure Dr. Morin acknowledges on page 32). In
2		addition, Dr. Morin's use of the Duff & Phelps study only used half of the reported data
3		(arithmetic means) and ignored the other half of the reported data (geometric means). I
4		discussed this issue earlier in my testimony.

5

6 Q. **WHAT IS YOUR DISAGREEMENT WITH DR. MORIN'S MARKET RISK**
7   **PREMIUM COMPONENT?**

8 A. Dr. Morin's 7.0 percent risk premium is partially derived from the 1926-2016 Duff &
9   Phelps (formerly Morningstar/Ibbotson) study (cited previously) showing a 7.0 percent
10   differential between the total return component of common stocks and the "income
11   component" of U.S. Treasury bonds.[52]

12   I disagree with this study since Dr. Morin improperly used "income returns" from
13   the Duff & Phelps study rather than "total returns." What Dr. Morin did was compare the
14   differential between <u>total returns</u> for common stocks (i.e., dividends and capital gains)
15   and <u>only income returns</u> for Treasury bonds. As such, he has ignored the capital gains
16   component of the Treasury bonds return. As I indicated in my earlier testimony, the
17   differential between total returns of common stocks and U.S. Treasury bonds is 6.0
18   percent (a figure Dr. Morin acknowledges on page 32). In addition, Dr. Morin's use of
19   the Duff & Phelps study only used half of the reported data (arithmetic means) and
20   ignored the other half of the reported data (geometric means). I discussed this issue
21   earlier in my testimony.

22

23 Q. **PLEASE DESCRIBE DR. MORIN'S "EMPIRICAL" CAPM ANALYSIS.**

24 A. Dr. Morin also employs what he describes as an "empirical" CAPM analysis. This form
25   of the CAPM assumes that beta for an industry understates the industry's volatility;
26   therefore, risk is understated. As a result, it is necessary to substitute the overall market's
27   beta (i.e., 1.0) for one-fourth of the industry's actual beta. Dr. Morin assumes that the
28   appropriate beta in a CAPM analysis is a combination of the actual industry beta with a
29   75 percent weight and a beta of 1 with a 25 percent weight.

---

[52] Direct Testimony of Roger A. Morin, pages 32-33.

1   The use of an empirical CAPM overstates the cost of equity for companies with

2   betas below that of the market. What the empirical CAPM actually does is inflate the

3   CAPM cost for the selected company or industry on one-fourth of its equity and assumes

4   that one-fourth of the company has the risk of the overall market. This essentially creates

5   a hypothetical beta and CAPM result which is not appropriate for OG&E or for other

6   utilities.

7

8   Q. **PLEASE DESCRIBE YOUR UNDERSTANDING OF DR. MORIN'S RISK**

9   **PREMIUM ANALYSES.**

10 A.   Dr. Morin performs two sets of risk premium analyses which involve the estimation of an

11   equity risk premium over the forecasted (as of late 2017) 4.4 percent long-term

12   government bond yield developed in his CAPM analyses.[53]

13 Q. **PLEASE DESCRIBE DR. MORIN'S HISTORIC RISK PREMIUM FOR THE**

14   **ELECTRIC UTILITY INDUSTRY.**

15 A.   Dr. Morin's historic risk premium for the electric utility industry involves an examination

16   of the total returns of long-term government bonds (capital gains/losses plus interest) and

17   the S&P Electric Utilities Index (capital gains/losses plus dividend yield) over the period

18   1930-2016. The average historical difference between the electric utility returns and the

19   utility bond income returns was 6.1 percent. His historic risk premium for the electric

20   utility industry simply added the 4.4 percent forecast long-term government bond yield to

21   the 6.1 percent historic risk premium plus 0.2 percent flotation adjustment to get a 10.7

22   percent result.[54]

23

24 Q. **DO YOU AGREE WITH THIS METHODOLOGY FOR ESTIMATING THE**

25   **COST OF EQUITY FOR OG&E?**

26 A.   No, I do not. Dr. Morin's historic risk premium of 6.1 percent is simply an examination

27   of historical events going back to 1930. He has made no demonstration that economic

28   and financial conditions in 2018 are similar to those over the past eighty-eight years. The

---

[53]   Direct Testimony of Roger A. Morin, page 31.
[54]   Direct Testimony of Roger A. Morin, pages 41-42.

1	use of such a methodology implicitly assumes that the events of each of these years can
2	have the same influences at the current time.
3	In addition, the risk premiums developed by Dr. Morin are generally dominated
4	by the influence of capital gains in many years. I do not believe it is proper to assign
5	OG&E's cost of equity based directly upon a methodology which is dominated by stock
6	market changes and bond market changes.
7	In addition, Dr. Morin uses forecasted interest rates. As I indicated previously,
8	this is improper.
9	Finally, Dr. Morin adds a flotation cost adjustment to his ROE estimate. I have
10	previously addressed this concept.
11	
12	**Q.** **PLEASE DESCRIBE DR. MORIN'S ANALYSIS OF ALLOWED RISK**
13	**PREMIUMS FOR THE ELECTRIC UTILITY INDUSTRY.**
14	A. In this phase of his risk premium testimony, Dr. Morin compares the differential between
15	allowed ROEs for electric utilities and long-term U.S. Treasury bonds over the 1986-
16	2016 period. The average spread over this period was 5.51 percent, but Dr. Morin does
17	not utilize this differential as his risk premium. Instead, he performs regression analyses
18	to track the risk premium in terms of rising and falling interest rates. He then concludes
19	that a 6.12 percent risk premium is appropriate in conjunction with a 4.4 percent U.S.
20	Treasury bond yield.[55] This adjustment is not consistent with Dr. Morin's historic risk
21	premium analyses where he simply took the average risk premium over the entire 1930-
22	2016 period and applied it to the projected level of U.S. Treasury bond yields.
23	I also note that there has been a downward trend in allowed ROEs for electric
24	utilities in recent years. According to the source of Dr. Morin's allowed risk premium
25	analysis, (Regulatory Focus, published by Standard & Poor's, previously SNL/RRA, as
26	cited earlier in my testimony), the annual average and median ROE awards[56] have been:
27	

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[55]   Direct Testimony of Roger A. Morin, page 44.
[56]   General Rate Cases.

1

Year	Average	Median
2007	10.32%	10.23%
2008	10.37%	10.30%
2009	10.52%	10.50%
2010	10.29%	10.26%
2011	10.19%	10.14%
2012	10.02%	10.00%
2013	9.82%	9.82%
2014	9.76%	9.75%
2015	9.60%	9.53%
2016	9.60%	9.60%
2017	9.68%	9.60%

2

3   It is noteworthy that the average authorized ROEs since 2012 have not been as large as

4   Dr. Morin's 9.9 percent ROE in this case.

5

6 **Q.**   **DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

7 A.   Yes, it does.

8

BACKGROUND AND EXPERIENCE PROFILE
DAVID C. PARCELL, MBA, CRRA
PRESIDENT/SENIOR ECONOMIST

EDUCATION

1985	M.B.A., Virginia Commonwealth University
1970	M.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech)
1969	B.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech)

POSITIONS

Present	Principal, Technical Associates, Inc.
2007-2016	President, Technical Associates, Inc.
1995-2007	Executive Vice President and Senior Economist, Technical Associates, Inc.
1993-1995	Vice President and Senior Economist, C. W. Amos of Virginia
1972-1993	Vice President and Senior Economist, Technical Associates, Inc.
1969-1972	Research Economist, Technical Associates, Inc.
1968-1969	Research Associate, Department of Economics, Virginia Polytechnic Institute and State University

ACADEMIC HONORS

Omicron Delta Epsilon - Honor Society in Economics
Beta Gamma Sigma - National Scholastic Honor Society of Business Administration
Alpha Iota Delta - National Decision Sciences Honorary Society
Phi Kappa Phi - Scholastic Honor Society

PROFESSIONAL DESIGNATIONS

Certified Rate of Return Analyst - Founding Member

RELEVANT EXPERIENCE

<u>Financial Economics</u> -- Advised and assisted many Virginia banks and savings and loan associations on organizational and regulatory matters. Testified approximately 25 times before the Virginia State Corporation Commission and the Regional Administrator of National Banks on matters related to branching and organization for banks, savings and loan associations, and consumer finance companies. Advised financial institutions on interest rate structure and loan maturity. Testified before Virginia State Corporation Commission on maximum rates for consumer finance companies.

Testified before several committees and subcommittees of Virginia General Assembly on numerous banking matters.

Clients have included First National Bank of Rocky Mount, Patrick Henry National Bank, Peoples Bank of Danville, Blue Ridge Bank, Bank of Essex, and Signet Bank.

Published articles in law reviews and other periodicals on structure and regulation of banking/financial services industry.

Utility Economics -- Performed numerous financial studies of regulated public utilities. Testified in over 550 cases before some fifty state and federal regulatory agencies.

Prepared numerous rate of return studies incorporating cost of equity determination based on DCF, CAPM, comparable earnings and other models. Developed procedures for identifying differential risk characteristics by nuclear construction and other factors.

Conducted studies with respect to cost of service and indexing for determining utility rates, the development of annual review procedures for regulatory control of utilities, fuel and power plant cost recovery adjustment clauses, power supply agreements among affiliates, utility franchise fees, and use of short-term debt in capital structure.

Presented expert testimony before federal regulatory agencies Federal Energy Regulatory Commission, Federal Power Commission, and National Energy Board (Canada), state regulatory agencies in Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, Ohio, Oklahoma, Ontario (Canada), Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, West Virginia, Washington, Wisconsin, U.S. Virgin Islands, and Yukon Territory (Canada).

Published articles in law reviews and other periodicals on the theory and purpose of regulation and other regulatory subjects.

Clients served include state regulatory agencies in Alaska, Arizona, Delaware, Georgia, Mississippi, Missouri, New Hampshire, North Carolina, Ontario (Canada), South Carolina, U.S. Virgin Islands, Virginia and Washington; consumer advocates and attorneys general in Alabama, Arizona, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maryland, Nevada, New Jersey, New Mexico, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, and West Virginia; federal agencies including Defense Communications Agency, the Department of Energy, Department of the Navy, and General Services Administration; and various organizations such as Bath Iron Works, Illinois Citizens' Utility Board, Illinois Governor's Office of Consumer Services, Illinois Small Business Utility

Advocate, Wisconsin's Environmental Decade, Wisconsin's Citizens Utility Board, Old Dominion Electric Cooperative, and industrial customers.

Insurance Economics -- Conducted analyses of the relationship between the investment income earned by insurance companies on their portfolios and the premiums charged for insurance. Analyzed impact of diversification on financial strength of Blue Cross/Blue Shield Plans in Virginia.

Conducted studies of profitability and cost of capital for property/casualty insurance industry. Evaluated risk of and required return on surplus for various lines of insurance business.

Presented expert testimony before Virginia State Corporation Commission concerning cost of capital and expected gains from investment portfolio. Testified before insurance bureaus of Maine, Massachusetts, New Jersey, North Carolina, Rhode Island, South Carolina and Vermont concerning cost of equity for insurance companies.

Prepared cost of capital and investment income return analyses for numerous insurance companies concerning several lines of insurance business. Analyses used by Virginia Bureau of Insurance for purposes of setting rates.

Special Studies -- Conducted analyses which evaluated the financial and economic implications of legislative and administrative changes. Subject matter of analyses include returnable bottles, retail beer sales, wine sales regulations, taxi-cab taxation, and bank regulation. Testified before several Virginia General Assembly subcommittees.

Testified before Virginia ABC Commission concerning economic impact of mixed beverage license.
Clients include Virginia Beer Wholesalers, Wine Institute, Virginia Retail Merchants Association, and Virginia Taxicab Association.

Franchise, Merger & Anti-Trust Economics -- Conducted studies on competitive impact on market structures due to joint ventures, mergers, franchising and other business restructuring. Analyzed the costs and benefits to parties involved in mergers. Testified in federal courts and before banking and other regulatory bodies concerning the structure and performance of markets, as well as on the impact of restrictive practices.

Clients served include Dominion Bankshares, asphalt contractors, and law firms.

Transportation Economics -- Conducted cost of capital studies to assess profitability of oil pipelines, trucks, taxicabs and railroads. Analyses have been presented before the Federal Energy Regulatory Commission and Alaska Pipeline Commission in rate proceedings. Served as a consultant to the Rail Services Planning Office on the reorganization of rail services in the U.S.
Economic Loss Analyses -- Testified in federal courts, state courts, and other adjudicative forums

regarding the economic loss sustained through personal and business injury whether due to bodily harm, discrimination, non-performance, or anticompetitive practices. Testified on economic loss to a commercial bank resulting from publication of adverse information concerning solvency. Testimony has been presented on behalf of private individuals and business firms.

MEMBERSHIPS

American Economic Association
Virginia Association of Economists
Richmond Society of Financial Analysts
Financial Analysts Federation
Society of Utility and Regulatory Financial Analysts
      Board of Directors   1992-2000
      Secretary/Treasurer   1994-1998
      President   1998-2000

RESEARCH ACTIVITY

Books and Major Research Reports

"Stock Price As An Indicator of Performance," Master of Arts Thesis, Virginia Tech, 1970

"Revision of the Property and Casualty Insurance Ratemaking Process Under Prior Approval in the Commonwealth of Virginia," prepared for the Bureau of Insurance of the Virginia State Corporation Commission, with Charles Schotta and Michael J. Ileo, 1971

"An analysis of the Virginia Consumer Finance Industry to Determine the Need for Restructuring the Rate and Size Ceilings on Small Loans in Virginia and the Process by which They are Governed," prepared for the Virginia Consumer Finance Association, with Michael J. Ileo, 1973

State Banks and the State Corporation Commission: A Historical Review, Technical Associates, Inc., 1974

"A Study of the Implications of the Sale of Wine by the Virginia Department of Alcoholic Beverage Control", prepared for the Virginia Wine Wholesalers Association, Virginia Retail Merchants Association, Virginia Food Dealers Association, Virginia Association of Chain Drugstores, Southland Corporation, and the Wine Institute, 1983.

"Performance and Diversification of the Blue Cross/Blue Shield Plans in Virginia: An Operational Review", prepared for the Bureau of Insurance of the Virginia State Corporation Commission, with Michael J. Ileo and Alexander F. Skirpan, 1988.

The Cost of Capital - A Practitioners' Guide, Society of Utility and Regulatory Financial Analysts, 2010 (previous editions in 1991, 1992, 1993, 1994, 1995 and 1997).

Papers Presented and Articles Published

"The Differential Effect of Bank Structure on the Transmission of Open Market Operations," Western Economic Association Meeting, with Charles Schotta, 1971

"The Economic Objectives of Regulation: The Trend in Virginia," (with Michael J. Ileo), William and Mary Law Review, Vol. 14, No. 2, 1973

"Evolution of the Virginia Banking Structure, 1962-1974: The Effects of the Buck-Holland Bill", (with Michael J. Ileo), William and Mary Law Review, Vol. 16, No. 3, 1975

"Banking Structure and Statewide Branching: The Potential for Virginia", William and Mary Law Review, Vol. 18, No. 1, 1976

"Bank Expansion and Electronic Banking: Virginia Banking Structure Changes Past, Present, and Future," William and Mary Business Review," Vol. 1, No. 2, 1976

"Electronic Banking - Wave of the Future?" (with James R. Marchand), Journal of Management and Business Consulting, Vol. 1, No. 1, 1976

"The Pricing of Electricity" (with James R. Marchand), Journal of Management and Business Consulting, Vol. 1, No. 2, 1976

"The Public Interest - Bank and Savings and Loan Expansion in Virginia" (with Richard D. Rogers), University of Richmond Law Review, Vol. 11, No. 3, 1977

"When Is It In the 'Public Interest' to Authorize a New Bank?", University of Richmond Law Review, Vol. 13, No. 3, 1979

"Banking Deregulation and Its Implications on the Virginia Banking Structure," William

and Mary Business Review, Vol. 5, No. 1, 1983

"The Impact of Reciprocal Interstate Banking Statutes on The Performance of Virginia Bank Stocks", with William B. Harrison, Virginia Social Science Journal, Vol. 23, 1988

"The Financial Performance of New Banks in Virginia", Virginia Social Science Journal, Vol. 24, 1989

"Identifying and Managing Community Bank Performance After Deregulation", with William B. Harrison, Journal of Managerial Issues, Vol. II, No. 2, Summer 1990

"The Flotation Cost Adjustment To Utility Cost of Common Equity - Theory, Measurement and Implementation," presented at Twenty-Fifth Financial Forum, National Society of Rate of Return Analysts, Philadelphia, Pennsylvania, April 28, 1993.

Biography of Myon Edison Bristow, Dictionary of Virginia Biography, Volume 2, 2001.

OKLAHOMA GAS & ELECTRIC COMPANY
TOTAL COST OF CAPITAL

Capital Item	Percent 1/		Cost Rate			Weighted Cost	
Long-Term Debt	50.00%		5.32% 2/			2.66%	
Common Equity	50.00%	8.90%	**9.20%**	9.50%	4.45%	4.60%	4.75%
Total Capital	100.00%				7.11%		7.41%
						7.26%	
						(With 9.20% ROE)	

1/ Hypothetical capital structure, as recommended by Mr. Parcell.

2/ As contained in Company filing, Section F, W/P F-3.

ECONOMIC INDICATORS

Period	Real GDP * Growth	Industrial Production Growth	Unemploy- ment Rate	Consumer Price Index
		1975 - 1982 Cycle		
1975	-0.2%	-8.9%	8.5%	7.0%
1976	5.4%	7.9%	7.7%	4.8%
1977	4.6%	7.6%	7.1%	6.8%
1978	5.6%	5.5%	6.1%	9.0%
1979	3.2%	3.0%	5.8%	13.3%
1980	-0.2%	-2.6%	7.1%	12.4%
1981	2.6%	1.3%	7.6%	8.9%
1982	-1.9%	-5.2%	9.7%	3.8%
		1983 - 1991 Cycle		
1983	4.6%	2.7%	9.6%	3.8%
1984	7.3%	8.9%	7.5%	3.9%
1985	4.2%	1.2%	7.2%	3.8%
1986	3.5%	1.0%	7.0%	1.1%
1987	3.5%	5.2%	6.2%	4.4%
1988	4.2%	5.2%	5.5%	4.4%
1989	3.7%	0.9%	5.3%	4.6%
1990	1.9%	1.0%	5.6%	6.1%
1991	-0.1%	-1.5%	6.8%	3.1%
		1992 - 2001 Cycle		
1992	3.6%	2.9%	7.5%	2.9%
1993	2.7%	3.3%	6.9%	2.7%
1994	4.0%	5.2%	6.1%	2.7%
1995	2.7%	4.7%	5.6%	2.5%
1996	3.8%	4.5%	5.4%	3.3%
1997	4.5%	7.2%	4.9%	1.7%
1998	4.5%	5.8%	4.5%	1.6%
1999	4.7%	4.4%	4.2%	2.7%
2000	4.1%	3.9%	4.0%	3.4%
2001	1.0%	-3.1%	4.7%	1.6%
		2002 - 2009		
2002	1.8%	0.3%	5.8%	2.4%
2003	2.8%	1.2%	6.0%	1.9%
2004	3.8%	2.6%	5.5%	3.3%
2005	3.3%	3.3%	5.1%	3.4%
2006	2.7%	2.2%	4.6%	2.5%
2007	1.8%	2.5%	4.6%	4.1%
2008	-0.3%	-3.5%	5.8%	0.1%
2009	-2.8%	-11.5%	9.3%	2.7%
		Current Cycle		
2010	2.5%	5.5%	9.6%	1.5%
2011	1.6%	3.1%	8.9%	3.0%
2012	2.2%	3.0%	8.1%	1.7%
2013	1.7%	2.0%	7.4%	1.5%
2014	2.6%	3.1%	6.2%	0.8%
2015	2.9%	-1.0%	5.3%	0.7%
2016	1.5%	-1.9%	4.9%	2.1%
2017	2.3%	1.6%	4.4%	2.1%
2018				
Q1			4.1%	

* GDP = Gross Domestic Product.

Note that certain series of data are periodically revised.

Sources: Council of Economic Advisors, Economic Indiators, various issues,
certain earlier year data from sources used by this publication.

INTEREST RATES

Period	Prime Rate	U.S. Treasury T Bills 3 Months	U.S. Treasury T Bonds 10 Year	Utility Bonds Aa	Utility Bonds A	Utility Bonds Baa
			1975 - 1982 Cycle			
1975	7.86%	5.84%	7.99%	9.44%	10.09%	10.96%
1976	6.84%	4.99%	7.61%	8.92%	9.29%	9.82%
1977	6.83%	5.27%	7.42%	8.43%	8.61%	9.06%
1978	9.06%	7.22%	8.41%	9.10%	9.29%	9.62%
1979	12.67%	10.04%	9.44%	10.22%	10.49%	10.96%
1980	15.27%	11.51%	11.46%	13.00%	13.34%	13.95%
1981	18.89%	14.03%	13.93%	15.30%	15.95%	16.60%
1982	14.86%	10.69%	13.00%	14.79%	15.86%	16.45%
			1983 - 1991 Cycle			
1983	10.79%	8.63%	11.10%	12.83%	13.66%	14.20%
1984	12.04%	9.58%	12.44%	13.66%	14.03%	14.53%
1985	9.93%	7.48%	10.62%	12.06%	12.47%	12.96%
1986	8.33%	5.98%	7.68%	9.30%	9.58%	10.00%
1987	8.21%	5.82%	8.39%	9.77%	10.10%	10.53%
1988	9.32%	6.69%	8.85%	10.26%	10.49%	11.00%
1989	10.87%	8.12%	8.49%	9.56%	9.77%	9.97%
1990	10.01%	7.51%	8.55%	9.65%	9.86%	10.06%
1991	8.46%	5.42%	7.86%	9.09%	9.36%	9.55%
			1992 - 2001 Cycle			
1992	6.25%	3.45%	7.01%	8.55%	8.69%	8.86%
1993	6.00%	3.02%	5.87%	7.44%	7.59%	7.91%
1994	7.15%	4.29%	7.09%	8.21%	8.31%	8.63%
1995	8.83%	5.51%	6.57%	7.77%	7.89%	8.29%
1996	8.27%	5.02%	6.44%	7.57%	7.75%	8.16%
1997	8.44%	5.07%	6.35%	7.54%	7.60%	7.95%
1998	8.35%	4.81%	5.26%	6.91%	7.04%	7.26%
1999	8.00%	4.66%	5.65%	7.51%	7.62%	7.88%
2000	9.23%	5.85%	6.03%	8.06%	8.24%	8.36%
2001	6.91%	3.44%	5.02%	7.59%	7.78%	8.02%
			2002 - 2009			
2002	4.67%	1.62%	4.61%	7.19%	7.37%	8.02%
2003	4.12%	1.02%	4.01%	6.40%	6.58%	6.84%
2004	4.34%	1.38%	4.27%	6.04%	6.16%	6.40%
2005	6.19%	3.16%	4.29%	5.44%	5.65%	5.93%
2006	7.96%	4.73%	4.80%	5.84%	6.07%	6.32%
2007	8.05%	4.41%	4.63%	5.94%	6.07%	6.33%
2008	5.09%	1.48%	3.66%	6.18%	6.53%	7.25%
2009	3.25%	0.16%	3.26%	5.75%	6.04%	7.06%
			Current Cycle			
2010	3.25%	0.14%	3.22%	5.24%	5.46%	5.96%
2011	3.25%	0.06%	2.78%	4.78%	5.04%	5.57%
2012	3.25%	0.09%	1.80%	3.83%	4.13%	4.86%
2013	3.25%	0.06%	2.35%	4.24%	4.47%	4.98%
2014	3.25%	0.03%	2.54%	4.19%	4.28%	4.80%
2015	3.26%	0.06%	2.14%	4.00%	4.12%	5.03%
2016	3.51%	0.33%	1.84%	3.73%	3.93%	4.69%
2017	4.10%	0.94%	2.33%	3.82%	4.00%	4.38%
2018						
Jan	4.50%	1.43%	2.58%	3.69%	3.86%	4.18%
Feb	4.50%	1.53%	2.86%	3.94%	4.09%	4.42%
Mar	4.75%	1.70%	2.84%	3.97%	4.13%	4.52%

Sources: Council of Economic Advisors, Economic Indiators, various issues, Mergent Bond Record.

STOCK PRICE INDICATORS

Period	S&P Composite	NASDAQ Composite	Dow Jones Industrials	S&P D/P	S&P E/P
1975 - 1982 Cycle					
1975			802.49	4.31%	9.15%
1976			974.92	3.77%	8.90%
1977			894.63	4.62%	10.79%
1978			820.23	5.28%	12.03%
1979			844.40	5.47%	13.46%
1980			891.41	5.26%	12.86%
1981			932.92	5.20%	11.96%
1982			844.36	5.81%	11.60%
1983 - 1991 Cycle					
1983			1,190.34	4.40%	8.03%
1984			1,178.48	4.64%	10.02%
1985			1,328.23	4.25%	8.12%
1986			1,792.76	3.49%	6.09%
1987			2,275.99	3.08%	5.48%
1988	265.79		2,060.82	3.64%	8.01%
1989	322.84		2,508.91	3.45%	7.42%
1990	334.59		2,678.94	3.61%	6.47%
1991	376.18	491.69	2,929.33	3.24%	4.79%
1992 - 2001 Cycle					
1992	415.74	599.26	3,284.29	2.99%	4.22%
1993	451.41	715.16	3,522.06	2.78%	4.46%
1994	460.33	751.65	3,793.77	2.82%	5.83%
1995	541.64	925.19	4,493.76	2.56%	6.09%
1996	670.83	1,164.96	5,742.89	2.19%	5.24%
1997	872.72	1,469.49	7,441.15	1.77%	4.57%
1998	1,085.50	1,794.91	8,625.52	1.49%	3.46%
1999	1,327.33	2,728.15	10,464.88	1.25%	3.17%
2000	1,427.22	2,783.67	10,734.90	1.15%	3.63%
2001	1,194.18	2,035.00	10,189.13	1.32%	2.95%
2002 - 2009					
2002	993.94	1,539.73	9,226.43	1.61%	2.92%
2003	965.23	1,647.17	8,993.59	1.77%	3.84%
2004	1,130.65	1,986.53	10,317.39	1.72%	4.89%
2005	1,207.23	2,099.32	10,547.67	1.83%	5.36%
2006	1,310.46	2,263.41	11,408.67	1.87%	5.78%
2007	1,476.66	2,577.12	13,169.98	1.86%	5.29%
2008	1,220.89	2,162.46	11,252.61	2.37%	3.54%
2009	946.73	1,841.03	8,876.15	2.40%	1.86%
Current Cycle					
2010	1,139.31	2,347.70	10,662.80	1.98%	6.04%
2011	1,268.89	2,680.42	11,966.36	2.05%	6.77%
2012	1,379.56	2,965.77	12,967.08	2.24%	6.20%
2013	1,462.51	3,537.69	14,999.67	2.14%	5.57%
2014	1,930.67	4,374.31	16,773.99	2.04%	5.25%
2015	2,061.20	4,943.49	17,590.61	2.10%	4.59%
2016	2,092.39	4,982.49	17,908.08	2.19%	4.17%
2017	2,448.22	6,231.28	21,741.91		
2018					
Q1	3,732.61	7,250.93	25,122.58		

Note: this source did not publish the S&P Composite prior to 1989 and the NASDAQ prior to 1991.

Sources: Council of Economic Advisors, _Economic Indiators_, various issues.

OG&E AND OGE ENERGY
HISTORY OF CREDIT RATINGS
SENIOR DEBT

Year 1/	Oklahoma Gas & Electric			OGE Energy			Enogex/Enable Midstream Ptrs.		
	Moody's	S&P	Fitch	Moody's	S&P	Fitch	Moody's	S&P	Fitch
2011	A2	BBB-	A+	Baa1	BBB	A	Baa3	BBB-	BBB
2012	A2	BBB+	A+	Baa1	BBB	A-	Baa3	BBB-	BBB
2013	A1	A-	A+	A2	BBB+	A+	Baa3		
2014	A1	A-	A+	A3	BBB+	A-	Baa3		
2015	A1	A-	A+	A3	BBB+	A-	Baa3		
2016	A1	A-	A+	A3	BBB+	A-	Baa3		
2017	A1	A-	A+	A3	BBB+	A-	Baa3		

1/ Ratings as of year cited in Form 10-K.

Source: OG&E and OGE Energy Forms 10-K, various years.

PROXY COMPANIES AND SUBSIDIARY ELECTRIC UTILITY SUBSIDIARIES
MOODY'S SECURITY RATINGS

Parent Utility	Parent Ratings		Utility Ratings	
	Issuer	Senior	Issuer	Senior
Parcell Proxy Group				
ALLETE	A3	A1		
Minnesota Power				
Alliant Energy	Baa1	Baa1		
Interstate P&L			Baa1	
Wisconsin P&L			A2	
El Paso Electric			Baa1	Baa1
Hawaiian Electric Industries				
Hawaiian Electric Co			Baa2	
Hawaii Electric Light Co			Baa2	
Maui Electric Co			Baa2	
IDACORP	Baa1			
Idaho Power Co			A3	
OGE Energy		A3		
OG&E			A1	
Otter Tail Corp	Baa2			
Otter Tail Power			A3	
Pinnacle West Capital	A3			
Arizona Pub Ser			A2	
Portland General Electric			A3	
Morin Proxy Group				
American Electric Power Co.		Baa1		
AEP Texas Central				Baa1
AEP Texas			Baa1	
Appalachian Power			Baa1	
Columbus & So Oho				A2
Indiana Michigan Power			Baa1	
Kentucky Power			Baa2	
Ohio Power			A2	
Pub. Service of OK			A3	
SWEPCO			Baa2	
ALLETE	A3	A1		
Edison International				
Southern California Ed.				
El Paso Electric			Baa1	Baa1
Emera	Baa3			
Tampa Electric Co			A3	
Fortis	Baa3			
Central Hudson G&E			A2	
Tucson Electric Power			A3	
UNS Electric			A3	
Hawaiian Electric Industries				
Hawaiian Electric Co			Baa2	
Hawaii Electric Light Co			Baa2	
Maui Electric Co			Baa2	
IDACORP Inc.	Baa1			
Idaho Power Co			A3	
NextEra Energy				
OGE Energy		A3		
OG&E			A1	
Otter Tail Corp.	Baa2			
Otter Tail Power			A3	
Pinnacle West Capital	A3			
Arizona Pub Ser			A2	
PNM Resources	Baa3			
Pub Ser of New Mexico			Baa2	
Portland General Electric			A3	
PPL Corp	Baa2			
Kentucky Utilities			A3	
Louisville G&E			A3	
PPL Electric Utilities			A3	
Southern Company		Baa2		
Alabama Power			A1	
Georgia Power			A3	
Gulf Power			A2	
Mississippi Power			Ba1	
Westar	Baa1			
Kansas G&E			Baa1	

Source: Moody's website.

ELECTRIC UTILITY RATE CASES WHERE RETURN ON EQUITY WAS DETERMINED IN 2016 - 2017

AND ROE AWARDS IN PRIOR CASES

				Cases Decided in 2016-2017		Prior Cases to Those in 2016-2017			
Date	Company	State		ROE	Equity Ratio	Date	ROE	Equity Ratio	ROE Change From Prior Case
1/6/16	Avista Corp	WA		9.50%	48.50%	12/26/12	9.80%	47.00%	-0.30%
2/23/16	Entergy Arkansas	AR		9.75%	28.46%	12/30/13	9.30%	28.64%	0.45%
3/16/16	Indianapolis Power & Light	IN		9.85%	37.33%				
4/29/16	Fitchburg Gas & Electric Co	MA		9.80%	52.17%	5/30/14	9.70%	47.78%	0.10%
6/3/16	Baltimore Gas & Electric Co	MD	D	9.75%	51.90%	2/22/13	9.75%	48.40%	0.00%
6/8/16	El Paso Electric Co	NM		9.48%	49.29%				
6/15/16	New York State Electric & Gas	NY	D	9.00%	48.00%				
6/15/16	Rochester Gas & Electric Corp	NY	D	9.00%	48.00%				
6/30/16	VA Electrric & Power Co	VA		9.60%	49.99%	12/26/13	10.00%		-0.40%
7/18/16	Northern Indiana Public Service	IN		9.98%	47.42%				
8/9/16	Kingsport Power Co	TN		9.85%	40.25%				
8/18/16	UNS Electric, Inc.	AZ		9.50%	52.83%	12/17/13	9.50%	52.60%	0.00%
8/24/16	Atlantic City Electric Co	NJ	D	9.75%	49.48%	8/20/14	9.75%	49.83%	0.00%
9/1/16	PacifiCorp	WA		9.50%	49.10%	3/25/15	9.50%	49.10%	0.00%
9/8/16	Upper Penninsula Power Co	MI		10.00%	53.49%	12/19/13	10.15%		-0.15%
9/28/16	Public Service Co of New Mexico	NM		9.58%	49.61%				
9/30/16	Massachusetts Electric Co	MA	D	9.90%	50.70%				
10/6/16	Appalachian Power Co	VA		9.40%		11/26/14	9.70%		-0.30%
11/9/16	Madison Gas & Electric Co	WI		9.80%	57.16%	11/26/14	10.20%	58.96%	-0.40%
11/10/16	Public Service Co of Oklahoma	OK		9.50%	44.00%				
11/15/16	Potomac Electric Power Co	MD	D	9.55%	49.55%	11/15/16	9.55%	49.55%	0.00%
11/18/16	Wisconsin Power & Light Co	WI		10.00%	52.20%	6/16/14	10.40%	50.46%	-0.40%
11/29/16	Florida Power & Light Co	FL		10.55%		12/13/12	10.50%		0.05%
12/1/16	Liberty Utilities	CA		10.00%	52.50%				
12/6/16	Commonwealth Edison Co	IL	D	8.64%	45.62%	12/9/15	9.14%	46.25%	-0.50%
12/6/16	Ameren Illinois Co	IL	D	8.64%	50.00%	12/9/15	9.14%	50.00%	-0.50%
12/7/16	Duke Energy Progress	SC		10.10%	53.00%				
12/12/16	Jersey Central Power & Light	NJ	D	9.60%	45.00%	3/18/15	9.75%	50.00%	-0.15%
12/14/16	United Illuminating Co	CT	D	9.10%	50.00%	8/14/13	9.15%	50.00%	-0.05%
12/19/16	Black Hills Colorado Electric Utility	CO		9.37%	52.39%	12/18/14	9.83%	49.83%	-0.46%
12/19/16	Emera Maine	ME	D	9.00%	49.00%	6/30/14	9.55%	49.00%	-0.55%
12/22/16	Sierra Pacific Power Co	NV		9.60%	48.03%	12/16/13	10.10%	46.94%	-0.50%
12/22/16	VA Electric & Power Co	NC		9.90%	51.75%				
12/28/16	Avista Corp	ID		9.50%	50.00%	12/18/15	9.50%	50.00%	0.00%
1/18/17	MDU Resources Group	WY		9.45%	50.99%				
1/24/17	Consolidated Edison Co of NY	NY	D	9.00%	48.00%	6/17/15	9.00%	48.00%	0.00%
1/31/17	DTE Electric Co	MI		10.10%	37.49%	12/11/15	10.30%	38.03%	-0.20%
2/15/17	Delmarva Power & Light Co	MD	D	9.60%	49.10%				
2/22/17	Rockland Electric Co	NJ	D	9.60%	49.70%	7/23/14	9.75%	50.35%	-0.15%
2/24/17	Tucson Electric Power Co	AZ		9.75%	50.03%	6/11/13	10.00%	43.50%	-0.25%
2/27/17	VA Electric & Power Co	VA		9.40%	49.49%	6/30/16	9.60%	49.99%	-0.20%
2/28/17	Consumers Energy Co	MI		10.10%	40.75%	11/19/15	10.30%	41.50%	-0.20%
3/2/17	Otter Tail Power Co	MN		9.41%	52.50%				
3/20/17	Oklahoma Gas & Electric Co	OK		9.50%	53.31%	7/9/12	10.20%		-0.70%
4/4/17	Gulf Power Co	FL		10.25%		12/13/13	10.25%		0.00%
4/12/17	Liberty Utilities (Granate State Electric)	NH	D	9.40%	50.00%				
4/20/17	Unitil Energy Systems, Inc.	NH	D	9.50%	50.97%				
5/3/17	Kansas City Power & Light Co	MO		9.50%	49.20%	9/2/15	9.50%	50.09%	0.00%
5/11/17	Northern States Power Co - MN	MN		9.20%	52.50%	3/26/15	9.72%	52.50%	-0.52%
5/18/17	Oklahoma Gas & Electric Co	AR		9.50%	36.38%				
5/23/17	Delmarva Power & Light Co	DE	D	9.70%		4/2/14	9.70%	49.22%	0.00%
5/31/17	Idaho Power Co	ID		9.50%		2/23/12	9.90%	49.90%	-0.40%
6/16/17	MDU Resources Group, Inc.	ND		9.65%	51.40%	1/15/16	10.50%	50.27%	-0.85%
6/22/17	Kentucky Utilities Co	KY		9.70%		12/20/12	10.25%		-0.55%
6/22/17	Louisville Gas & Electric Co	KY		9.70%		12/20/12	10.25%		-0.55%
7/24/17	Potomac Electric Power Co	DC	D	9.50%	49.14%	3/26/14	9.40%	49.19%	0.10%
8/15/17	Arizona Public Service Co	AZ		10.00%	55.80%	5/15/12	10.00%	53.94%	0.00%
9/22/17	Atlantic City Electric Co	NJ	D	9.60%	50.47%	8/24/16	9.75%	49.48%	-0.15%
9/28/17	Oncor Electric Delivery Co	TX	D	9.80%	42.50%				
10/20/17	Potomac Electric Power Co	MD	D	9.50%	50.15%	11/15/16	9.55%	49.55%	-0.05%
10/26/17	San Diego Gas & Electric Co	CA		10.20%	52.00%	12/20/12	10.30%	52.00%	-0.10%
10/26/17	Southern California Edison Co	CA		10.30%	48.00%	12/20/12	10.45%	48.00%	-0.15%
10/26/17	Pacific Gas and Electric Co	CA		10.25%	52.00%	12/20/12	10.40%	52.00%	-0.15%
11/6/17	Tampa Electric Co	FL		10.25%		9/11/13	10.25%	42.00%	0.00%
11/15/17	Alaska Electric Light and Power Co	AK		11.95%	55.18%				
11/30/17	NSTAR Electric Co	MA	D	10.00%	53.34%				
11/30/17	Western Massachusetts Electric Co	MA	D	10.00%	54.51%				
12/5/17	Puget Sound Energy, Inc	WA		9.50%	48.50%	6/25/13	9.80%	48.00%	-0.30%
12/6/17	Ameren Illinois Co	IL	D	8.40%	50.00%	12/6/16	8.64%	50.00%	-0.24%
12/6/17	Commonwealth Edison Co	IL	D	8.40%	45.89%	12/6/16	8.64%	50.00%	-0.24%
12/7/17	Northern States Power Co - WI	WI		9.80%	51.45%	12/12/14	10.20%	52.54%	-0.40%
12/14/17	Southwesten Electric Power Co	TX		9.60%	48.46%	10/3/13	9.65%	49.10%	-0.05%
12/14/17	El Paso Electric Co	TX		9.65%	48.35%	6/8/16	9.48%	49.29%	0.17%
12/18/17	Portland General Electric Co	OR		9.50%	50.00%	12/15/15	9.60%	50.00%	-0.10%
12/20//17	Public Service Co of New Mexico	NM		9.58%	49.61%	9/28/16	9.58%	49.61%	0.00%
12/21/17	Green Mountain Power Co	VT		9.10%	48.60%	8/25/14	9.60%	50.00%	-0.50%
12/28/17	Avista Corp	ID		9.50%	50.00%	12/28/16	9.50%	50.00%	0.00%
12/29/17	Nevada Power Co	NV		9.40%	49.99%	10/9/14	9.50%	48.17%	-0.10%
Average				9.63%	50.31%		9.78%	49.61%	-0.19%
Median				9.60%	50.00%		9.75%	49.83%	-0.15%

Number of Cases	56
Increase ROE	5
No Change	14
Decrease in ROE	37

Note: Highlighted values not included in average and median values

Source: Information contained in RRA Regulatory Focus, Major Rate Case Decisions, 2012-2017.

OKLAHOMA GAS & ELECTRIC COMPANY
CAPITAL STRUCTURE RATIOS
2013 -2017
($ MILLIONS)

Year	Common Equity	Long-Term Debt 1/	Short-Term Debt 2/
2013	$2,829.3	$2,300.2	$87.2
	54.2%	44.1%	1.7%
	55.2%	44.8%	
2014	$3,004.2	$2,655.3	$0.0
	53.1%	46.9%	0.0%
	53.1%	46.9%	
2015	$3,155.7	$2,655.6	$0.0
	54.3%	45.7%	0.0%
	54.3%	45.7%	
2016	$3,252.1	$2,530.8	$49.9
	55.8%	43.4%	0.9%
	56.2%	43.8%	
2017	$3,455.7	$2,999.4	$0.0
	53.5%	46.5%	0.0%
	53.5%	46.5%	

1/ Includes current maturities of long-term debt.

2/ Includes Advances from Parent.

Source: Oklahoma Gas & Electric Co., Form 10-K, various years.

OGE ENERGY CORP
CAPITAL STRUCTURE RATIOS
2013 -2017
($ MILLIONS)

Year	Common Equity	Long-Term Debt 1/	Short-Term Debt
2013	$3,037.1	$2,400.1	$439.6
	51.7%	40.8%	7.5%
	55.9%	44.1%	
2014	$3,244.4	$2,755.3	$98.0
	53.2%	45.2%	1.6%
	54.1%	45.9%	
2015	$3,326.0	$2,738.8	$0.0
	54.8%	45.2%	0.0%
	54.8%	45.2%	
2016	$3,443.8	$2,630.5	$236.2
	54.6%	41.7%	3.7%
	56.7%	43.3%	
2017	$3,851.1	$2,999.4	$168.4
	54.9%	42.7%	2.4%
	56.2%	43.8%	

1/ Includes current maturities of long-term debt.

Source: OGE Energy Corp., Form 10-K, various years.

PROXY COMPANIES AND SUBSIDIARY ELECTRIC UTILITY SUBSIDIARIES
MOODY'S SECURITY RATINGS
AS OF DECEMBER 31, 2017

Parent Utility	Amount ($millions)		Parent		Subsidiaries	
	Equity	L-T Debt 1/	Equity	L-T Debt	Equity	L-T Debt
Parcell Proxy Group						
ALLETE	$2,068	$1,503	57.9%	42.1%		
Alliant Energy	$4,182	$4,866	46.2%	53.8%		
Interstate P&L	$2,510	$2,406			51.1%	48.9%
Wisconsin P&L	$1,882	$1,833			50.6%	49.4%
El Paso Electric	$1,142	$1,196			48.8%	51.2%
Hawaiian Electric Industries	$2,097	$1,684	55.5%	44.5%		
Hawaiian Electric Co	$1,845	$1,368			57.4%	42.6%
IDACORP	$2,251	$1,746	56.3%	43.7%		
Idaho Power Co	$2,086	$1,746			54.4%	45.6%
OGE Energy	$3,851	$2,999	56.2%	43.8%		
OG&E	$3,456	$2,999			53.5%	46.5%
Otter Tail Corp	$697	$491	58.7%	41.3%		
Pinnacle West Capital	$5,007	$4,872	50.7%	49.3%		
Arizona Pub Ser	$5,287	$4,573			53.6%	46.4%
Portland General Electric	$2,416	$2,426			49.9%	50.1%
Morin Proxy Group						
American Electric Power Co.	$18,287	$21,173	46.3%	53.7%		
AEP Texas	$2,170	$2,623			45.3%	54.7%
Appalachian Power	$3,805	$3,980			48.9%	51.1%
Indiana Michigan Power	$2,218	$2,745			44.7%	55.3%
Ohio Power	$2,310	$1,719			57.3%	42.7%
Pub. Service of OK	$1,215	$1,286			48.6%	51.4%
SWEPCO	$2,235	$2,442			47.8%	52.2%
ALLETE	Figures cited in Parcell Proxy Group					
Edison International	$11,671	$12,123	49.1%	50.9%		
Southern California Ed	$12,427	$10,907			53.3%	46.7%
El Paso Electric	Figures cited in Parcell Proxy Group					
Hawaiian Electric Industries	Figures cited in Parcell Proxy Group					
Hawaiian Electric Co	Figures cited in Parcell Proxy Group					
IDACORP Inc.	Figures cited in Parcell Proxy Group					
Idaho Power Co	Figures cited in Parcell Proxy Group					
NextEra Energy	$28,208	$33,139	46.0%	54.0%		
Florida Power & Light	$17,040	$11,702			59.3%	40.7%
OGE Energy	Figures cited in Parcell Proxy Group					
OG&E	Figures cited in Parcell Proxy Group					
Otter Tail Corp.	Figures cited in Parcell Proxy Group					
Otter Tail Power	Figures cited in Parcell Proxy Group					
Pinnacle West Capital	Figures cited in Parcell Proxy Group					
Arizona Pub Ser	Figures cited in Parcell Proxy Group					
PNM Resources	$1,695	$2,438	41.0%	59.0%		
Pub Ser of New Mexico	$1,422	$1,658			46.2%	53.8%
Portland General Electric	Figures cited in Parcell Proxy Group					
PPL Corp	$10,761	$20,195	34.8%	65.2%		
Kentucky Utilities	$3,357	$2,328			59.1%	40.9%
Louisville G&E	$2,527	$1,709			59.7%	40.3%
PPL Electric Utilities	$3,992	$3,298			54.8%	45.2%
Southern Company	$25,528	$48,354	34.6%	65.4%		
Alabama Power	$6,829	$7,628			47.2%	52.8%
Georgia Power	$11,931	$11,930			50.0%	50.0%
Gulf Power	$1,531	$1,285			54.4%	45.6%
Mississippi Power	$1,358	$2,086			39.4%	60.6%
Average			**48.7%**	51.3%	**51.5%**	48.5%
Median			**49.1%**	50.9%	**50.9%**	49.1%

1/ Long-term debt includes long-term debt due within one year.

Source: Individual company Form 10-Ks.

ELECTRIC UTILITY RATE CASES WHERE CAPITAL STRUCTURE WAS DETERMINED IN 2016 - 2017
AND WHERE ELECTRIC UTILITY HAS SINGLE A RATINGS

| | | | | Cases Decided in 2016-2017 | | Credit Ratings | | | |
| | | | | | | Moody's | | S&P | |
Date	Company	State		ROE	Equity Ratio	Issuer	Senior	Issuer	Senior
1/6/16	Avista Corp	WA		9.50%	48.50%	Baa1	A2	BBB	A-
2/23/16	Entergy Arkansas	AR		9.75%	28.46%	Baa1		BBB+	A
3/16/16	Indianapolis Power & Light	IN		9.85%	37.33%	Baa1	A2	BBB-	BBB+
6/3/16	Baltimore Gas & Electric Co	MD	D	9.75%	51.90%	A3		A-	A-
6/15/16	New York State Electric & Gas	NY	D	9.00%	48.00%	A3		A-	A-
6/15/16	Rochester Gas & Electric Corp	NY	D	9.00%	48.00%	A3		A-	A
6/30/16	VA Electrric & Power Co	VA		9.60%	49.99%	A2		BBB+	BBB+
8/18/16	UNS Electric, Inc.	AZ		9.50%	52.83%		A3		
8/24/16	Atlantic City Electric Co	NJ	D	9.75%	49.48%	Baa2		BBB+	A
9/1/16	PacifiCorp	WA		9.50%	49.10%	A3	A3	A	A+
9/30/16	Massachusetts Electric Co	MA	D	9.90%	50.70%			A-	A-
11/9/16	Madison Gas & Electric Co	WI		9.80%	57.16%	A1	Aa2	AA-	AA-
11/10/16	Public Service Co of Oklahoma	OK		9.50%	44.00%	A3		A-	A-
11/15/16	Potomac Electric Power Co	MD	D	9.55%	49.55%	Baa1		BBB+	A
11/18/16	Wisconsin Power & Light Co	WI		10.00%	52.20%	A2		A-	A-
12/6/16	Commonwealth Edison Co	IL	D	8.64%	45.62%	A3		A-	A-
12/6/16	Ameren Illinois Co	IL	D	8.64%	50.00%	A3		BBB+	A
12/7/16	Duke Energy Progress	SC		10.10%	53.00%	A2		A-	A
12/14/16	United Illuminating Co	CT	D	9.10%	50.00%	Baa1		A-	
12/19/16	Black Hills Colorado Electric Utility	CO		9.37%	52.39%	A3		BBB	A-
12/22/16	Sierra Pacific Power Co	NV		9.60%	48.03%	Baa1	A2	A	A+
12/22/16	VA Electric & Power Co	NC		9.90%	51.75%	A2		BBB+	BBB+
12/28/16	Avista Corp	ID		9.50%	50.00%	A2		A-	
1/24/17	Consolidated Edison Co of NY	NY	D	9.00%	48.00%	A3		A-	A-
1/31/17	DTE Electric Co	MI		10.10%	37.49%	A2		BBB+	A
2/15/17	Delmarva Power & Light Co	MD	D	9.60%	49.10%	Baa1		BBB+	A
2/22/17	Rockland Electric Co	NJ	D	9.60%	49.70%			A-	
2/24/17	Tucson Electric Power Co	AZ		9.75%	50.03%	A3		A-	A-
2/27/17	VA Electric & Power Co	VA		9.40%	49.49%	A2		BBB+	BBB+
2/28/17	Consumers Energy Co	MI		10.10%	40.75%	A2	Aa3	BBB+	A
3/2/17	Otter Tail Power Co	MN		9.41%	52.50%	A3		BBB	BBB
3/20/17	Oklahoma Gas & Electric Co	OK		9.50%	53.31%	A1		A-	A-
5/3/17	Kansas City Power & Light Co	MO		9.50%	49.20%	Baa1		BBB+	A
5/11/17	Northern States Power Co - MN	MN		9.20%	52.50%	A2		A-	AA-
5/18/17	Oklahoma Gas & Electric Co	AR		9.50%	36.38%	A1		A-	A-
7/24/17	Potomac Electric Power Co	DC	D	9.50%	49.14%	Baa1		BBB+	A
8/15/17	Arizona Public Service Co	AZ		10.00%	55.80%	A2		A-	A-
9/22/17	Atlantic City Electric Co	NJ	D	9.60%	50.47%	Baa2		BBB+	A
9/28/17	Oncor Electric Delivery Co	TX	D	9.80%	42.50%		A3	BBB+	A
10/20/17	Potomac Electric Power Co	MD	D	9.50%	50.15%	Baa1		BBB+	A
10/26/17	San Diego Gas & Electric Co	CA		10.20%	52.00%	A1		A	A+
10/26/17	Southern California Edison Co	CA		10.30%	48.00%	A2		BBB+	A
10/26/17	Pacific Gas and Electric Co	CA		10.25%	52.00%	A2	A2	A-	A-
11/30/17	NSTAR Electric Co	MA	D	10.00%	53.34%	A2		A	A
11/30/17	Western Massachusetts Electric Co	MA	D	10.00%	54.51%	A2		A	A
12/5/17	Puget Sound Energy, Inc	WA		9.50%	48.50%	Baa1	A2	BBB	A-
12/6/17	Ameren Illinois Co	IL	D	8.40%	50.00%	A3		BBB+	A
12/6/17	Commonwealth Edison Co	IL	D	8.40%	45.89%	A3		BBB	A-
12/7/17	Northern States Power Co - WI	WI		9.80%	51.45%			A-	A
12/14/17	Southwesten Electric Power Co	TX		9.60%	48.46%	Baa2		A-	A-
12/18/17	Portland General Electric Co	OR		9.50%	50.00%	A3	A1	BBB	A-
12/21/17	Green Mountain Power Co	VT		9.10%	48.60%			A-	A
12/28/17	Avista Corp	ID		9.50%	50.00%	Baa1	A2	BBB	A-
12/29/17	Nevada Power Co	NV		9.40%	49.99%	Baa1	A2	A	A+
Average				9.55%	49.95%				
Median				9.53%	50.00%				

Note: Figures in **highlight** not included in average and median values.

Sources: Information contained in RRA Regulatory Focus, Major Rate Case Decisions, 2012-2017; Moody's and Standard & Poor's websites.

PROXY COMPANIES
CRITERIA FOR SELECTION

Company	Market Capitalization ($000)	Common Equity Ratio	Value Line Safety	S&P Stock Ranking	S&P Bond Rating /1	Moody's Bond Rating 1/
OGE Energy	$6,200,000	58.3%	2	A-	A-	A3
Oklahoma Gas & Electric					A-	A1
Parcell Proxy Group	($1 billion - $10 billion)	(over 40%)	(1 or 2)	(A or B)	(A or Baa)	(A or BBB)
ALLETE	$3,400,000	59.0%	2	A-	BBB+	A3
Alliant Energy	$8,800,000	51.0%	2	A-	A-	Baa1
El Paso Electric	$2,100,000	48.5%	2	B	BBB	Baa1
Hawaiian Electric Industries	$3,700,000	55.0%	2	A-	BBB-	Baa2
IDACORP	$4,200,000	56.5%	2	A	BBB	Baa1
Otter Tail Corp	$1,600,000	58.7%	2	B	BBB	Baa2
Pinnacle West Capital	$8,800,000	51.0%	1	A-	A-	A3
Portland General Electric	$3,800,000	51.0%	2	A-	BBB	A3
Morin Proxy Group						
American Electric Power Co.	$32,000,000	48.5%	1	B+	A-	Baa1
ALLETE	$3,400,000	59.0%	2	A-	BBB+	A3
Edison International	$20,000,000	48.0%	2	B	BBB+	A3
El Paso Electric	$2,100,000	48.5%	2	B	BBB	Baa1
Emera 2/	$9,300,000	33.5%	2			
Fortis 2/	$18,000,000	37.1%	2	A-	A-	Baa3
Hawaiian Electric Industries	$3,700,000	55.0%	2	A-	BBB-	Baa2
IDACORP Inc.	$4,200,000	56.5%	2	A	BBB	Baa1
NextEra Energy	$70,000,000	47.5%	1	A	A-	Baa1
OGE Energy	$6,200,000	58.3%	2	A-	A-	A3
Otter Tail Corp.	$1,600,000	58.7%	2	B	BBB	Baa2
Pinnacle West Capital	$8,800,000	51.0%	1	A-	A-	A3
PNM Resources	$2,800,000	44.0%	3	B	BBB+	Baa3
Portland General Electric	$3,800,000	51.0%	2	A-	BBB	A3
PPL Corp	$21,000,000	36.0%	2	B	A-	Baa2
Southern Company	$44,000,000	33.5%	2	B+	A-	Baa2
Westar 2/	$7,100,000	49.0%	2	B+	BBB+	Baa1

1/ Bond ratings are for Issuer Rating (Moody's) and Issuer Credit (Standard & Poor's) for companies that have these ratings, and highest other ratings for companies that do not have these ratings.

2/ Companies not included in Mr. Parcell's applications of cost of equity models to Dr. Morin's proxy group.

Sources: Value Line, S&P, Moody's.

PROXY COMPANIES
DIVIDEND YIELD CALCULATIONS

Company	Quarterly DPS	Annual DPS	Stock Price (Januuary - March 2018)			Yield
			High	Low	Average	
Parcell Proxy Group						
ALLETE	$0.560	$2.24	$74.42	$66.64	$70.53	3.18%
Alliant Energy	$0.335	$1.34	$42.72	$36.84	$39.78	3.37%
El Paso Electric	$0.335	$1.34	$55.75	$48.05	$51.90	2.58%
Hawaiian Electric Industries	$0.310	$1.24	$36.22	$31.72	$33.97	3.65%
IDACORP	$0.590	$2.36	$91.40	$79.59	$85.50	2.76%
OGE Energy	$0.333	$1.33	$33.07	$29.59	$31.33	4.25%
Otter Tail Corp	$0.335	$1.34	$44.95	$36.65	$40.80	3.28%
Pinnacle West Capital	$0.695	$2.78	$85.55	$73.81	$79.68	3.49%
Portland General Electric	$0.340	$1.36	$45.65	$39.02	$42.34	3.21%
Mean						**3.31%**
Morin Proxy Group						
American Electric Power Co.	$0.620	$2.48	$73.42	$63.32	$68.37	3.63%
ALLETE	$0.560	$2.24	$74.42	$66.64	$70.53	3.18%
Edison International	$0.605	$2.42	$67.56	$57.63	$62.60	3.87%
El Paso Electric	$0.335	$1.34	$55.75	$48.05	$51.90	2.58%
Hawaiian Electric Industries	$0.310	$1.24	$36.22	$31.72	$33.97	3.65%
IDACORP Inc.	$0.590	$2.36	$91.40	$79.59	$85.50	2.76%
NextEra Energy	$1.110	$4.44	$164.41	$145.10	$154.76	2.87%
OGE Energy	$0.333	$1.33	$33.07	$29.59	$31.33	4.25%
Otter Tail Corp.	$0.335	$1.34	$44.95	$36.65	$40.80	3.28%
Pinnacle West Capital	$0.695	$2.78	$85.55	$73.81	$79.68	3.49%
PNM Resources	$0.265	$1.06	$40.55	$33.75	$37.15	2.85%
Portland General Electric	$0.340	$1.36	$45.65	$39.02	$42.34	3.21%
PPL Corp	$0.410	$1.64	$32.45	$27.08	$29.77	5.51%
Southern Company	$0.580	$2.32	$48.07	$42.38	$45.23	5.13%
Mean						**3.59%**

Source: Information contained in Yahoo Finance.

PROXY COMPANIES
RETENTION GROWTH RATES

Company	2013	2014	2015	2016	2017	2013-17 Average	2018	2019	2015-17 to 2021-23	2018 - 2021-23 Average
Parcell Proxy Group										
ALLETE	2.2%	2.5%	3.6%	2.8%	2.4%	2.7%	3.0%	3.0%	3.0%	3.0%
Alliant Energy	4.9%	4.3%	3.6%	2.8%	4.0%	3.9%	4.0%	4.0%	4.0%	4.0%
El Paso Electric	4.9%	4.8%	3.4%	4.4%	4.0%	4.3%	4.5%		4.0%	4.3%
Hawaiian Electric Industries	3.7%	2.3%	1.5%	6.3%	1.5%	3.1%	3.0%		2.5%	2.8%
IDACORP	5.6%	5.4%	4.8%	4.3%	4.0%	4.8%	4.0%		3.5%	3.8%
OGE Energy	7.3%	6.5%	4.0%	3.3%	3.5%	4.9%	3.0%	3.0%	3.0%	3.0%
Otter Tail Corp	1.2%	2.2%	2.0%	2.1%	3.2%	2.1%	3.0%	3.5%	4.0%	3.5%
Pinnacle West Capital	4.1%	3.5%	3.9%	3.5%	3.5%	3.7%	3.5%		4.0%	3.8%
Portland General Electric	2.9%	4.6%	3.3%	3.5%	3.5%	3.6%	3.5%		4.5%	4.0%
Mean						**3.7%**				**3.6%**
Morin Proxy Group										
American Electric Power Co.	3.7%	3.8%	3.9%	5.5%	3.2%	4.0%	3.5%	3.5%	4.0%	3.7%
ALLETE	2.2%	2.5%	3.6%	2.8%	2.4%	2.7%	3.0%	3.0%	3.0%	3.0%
Edison International	8.1%	8.8%	7.2%	5.6%	5.5%	7.0%	5.0%		5.5%	5.3%
El Paso Electric	4.9%	4.8%	3.4%	4.4%	4.0%	4.3%	4.5%		4.0%	4.3%
Hawaiian Electric Industries	3.7%	2.3%	1.5%	6.3%	1.5%	3.1%	3.0%		2.5%	2.8%
IDACORP Inc.	5.6%	5.4%	4.8%	4.3%	4.0%	4.8%	4.0%		3.5%	3.8%
NextEra Energy	5.2%	6.0%	6.1%	4.4%	11.0%	6.5%	5.0%	5.5%	6.0%	5.5%
OGE Energy	7.3%	6.5%	4.0%	3.3%	3.5%	4.9%	3.0%	3.0%	3.0%	3.0%
Otter Tail Corp.	1.2%	2.2%	2.0%	2.1%	3.2%	2.1%	3.0%	3.5%	4.0%	3.5%
Pinnacle West Capital	4.1%	3.5%	3.9%	3.5%	3.5%	3.7%	3.5%		4.0%	3.8%
PNM Resources	3.8%	3.2%	3.3%	2.8%	4.0%	3.4%	3.0%		4.0%	3.5%
Portland General Electric	2.9%	4.6%	3.3%	3.5%	3.5%	3.6%	3.5%		4.5%	4.0%
PPL Corp	5.3%	4.5%	6.0%	8.8%	3.0%	5.5%	3.5%	4.0%	4.5%	4.0%
Southern Company	3.2%	3.2%	3.1%	2.5%	3.0%	3.0%	2.5%	3.0%	3.5%	3.0%
Mean						**4.2%**				**3.8%**

Figures reported by Value Line as "Retained to Com Eq."

Source: Value Line Investment Survey.

PROXY COMPANIES
PER SHARE GROWTH RATES

Company	Five-Year Historic Growth Rates				Est'd -15-'17 to '21-'23 Growth Rates			
	EPS	DPS	BVPS	Average	EPS	DPS	BVPS	Average
Parcell Proxy Group								
ALLETE	5.5%	3.0%	6.0%	4.8%	4.5%	4.5%	4.0%	4.3%
Alliant Energy	6.5%	6.5%	4.5%	5.8%	6.5%	6.0%	5.0%	5.8%
El Paso Electric	2.0%		7.0%	4.5%	5.0%	7.0%	4.0%	5.3%
Hawaiian Electric Industries	9.0%	0.0%	3.0%	4.0%	1.5%	2.0%	3.5%	2.3%
IDACORP	5.5%	10.0%	5.5%	7.0%	3.5%	7.0%	4.0%	4.8%
OGE Energy	1.0%	8.5%	6.5%	5.3%	2.5%	8.0%	4.0%	4.8%
Otter Tail Corp	21.5%	1.0%	1.0%	7.8%	7.0%	3.5%	6.5%	5.7%
Pinnacle West Capital	6.5%	3.0%	4.0%	4.5%	5.5%	5.5%	4.0%	5.0%
Portland General Electric	5.5%	3.0%	3.5%	4.0%	6.0%	6.0%	4.0%	5.3%
Mean				**5.3%**				**4.8%**
Morin Proxy Group								
American Electric Power Co.	5.5%	4.5%	4.0%	4.7%	4.5%	5.0%	4.5%	4.7%
ALLETE	5.5%	3.0%	6.0%	4.8%	4.5%	4.5%	4.0%	4.3%
Edison International	5.0%	6.5%	2.5%	4.7%	4.0%	9.0%	4.0%	5.7%
El Paso Electric	2.0%		7.0%	4.5%	5.0%	7.0%	4.0%	5.3%
Hawaiian Electric Industries	9.0%	0.0%	3.0%	4.0%	1.5%	2.0%	3.5%	2.3%
IDACORP Inc.	5.5%	10.0%	5.5%	7.0%	3.5%	7.0%	4.0%	4.8%
NextEra Energy	5.0%	9.0%	7.5%	7.2%	8.5%	9.5%	6.5%	8.2%
OGE Energy	1.0%	8.5%	6.5%	5.3%	2.5%	8.0%	4.0%	4.8%
Otter Tail Corp.	21.5%	1.0%	1.0%	7.8%	7.0%	3.5%	6.5%	5.7%
Pinnacle West Capital	6.5%	3.0%	4.0%	4.5%	5.5%	5.5%	4.0%	5.0%
PNM Resources	11.5%	10.5%	2.5%	8.2%	7.5%	9.0%	2.0%	6.2%
Portland General Electric	5.5%	3.0%	3.5%	4.0%	6.0%	6.0%	4.0%	5.3%
PPL Corp	4.5%	1.5%		3.0%		3.5%		3.5%
Southern Company	3.0%	3.5%	4.0%	3.5%	4.0%	3.5%	2.5%	3.3%
Mean				**5.2%**				**4.9%**

Source: Value Line Investment Survey.

PROXY COMPANIES
DCF COST RATES

Company	Adjusted Yield	Historic Retention Growth	Prospective Retention Growth	Historic Per Share Growth	Prospective Per Share Growth	First Call EPS Growth	Average Growth	DCF Rates
Parcell Proxy Group								
ALLETE	3.2%	2.7%	3.0%	4.8%	4.3%	6.00%	4.2%	7.4%
Alliant Energy	3.5%	3.9%	4.0%	5.8%	5.8%	5.45%	5.0%	8.5%
El Paso Electric	2.6%	4.3%	4.3%	4.5%	5.3%	5.20%	4.7%	7.4%
Hawaiian Electric Industries	3.7%	3.1%	2.8%	4.0%	2.3%	8.50%	4.1%	7.9%
IDACORP	2.8%	4.8%	3.8%	7.0%	4.8%	3.10%	4.7%	7.5%
OGE Energy	4.3%	4.9%	3.0%	5.3%	4.8%	5.80%	4.8%	9.1%
Otter Tail Corp	3.4%	2.1%	3.5%	7.8%	5.7%	9.00%	5.6%	9.0%
Pinnacle West Capital	3.6%	3.7%	3.8%	4.5%	5.0%	3.63%	4.1%	7.7%
Portland General Electric	3.3%	3.6%	4.0%	4.0%	5.3%	3.50%	4.1%	7.4%
Mean	3.4%	3.7%	3.6%	5.3%	4.8%	5.6%	4.6%	**8.0%**
Median	3.4%	3.7%	3.8%	4.8%	5.0%	5.5%	4.7%	**7.7%**
Composite - Mean		7.1%	**6.9%**	8.7%	8.2%	**9.0%**	8.0%	
Composite - Median		7.1%	**7.1%**	8.2%	8.4%	**8.8%**	8.1%	
Morin Proxy Group								
American Electric Power Co.	3.7%	4.0%	3.7%	4.7%	4.7%	5.63%	4.5%	8.2%
ALLETE	3.2%	2.7%	3.0%	4.8%	4.3%	6.00%	4.2%	7.4%
Edison International	4.0%	7.0%	5.3%	4.7%	5.7%	2.62%	5.0%	9.0%
El Paso Electric	2.6%	4.3%	4.3%	4.5%	5.3%	5.20%	4.7%	7.4%
Hawaiian Electric Industries	3.7%	3.1%	2.8%	4.0%	2.3%	8.50%	4.1%	7.9%
IDACORP Inc.	2.8%	4.8%	3.8%	7.0%	4.8%	3.10%	4.7%	7.5%
NextEra Energy	3.0%	6.5%	5.5%	7.2%	8.2%	8.85%	7.2%	10.2%
OGE Energy	4.3%	4.9%	3.0%	5.3%	4.8%	5.80%	4.8%	9.1%
Otter Tail Corp.	3.4%	2.1%	3.5%	7.8%	5.7%	9.00%	5.6%	9.0%
Pinnacle West Capital	3.6%	3.7%	3.8%	4.5%	5.0%	3.63%	4.1%	7.7%
PNM Resources	2.9%	3.4%	3.5%	8.2%	6.2%	5.80%	5.4%	8.3%
Portland General Electric	3.3%	3.6%	4.0%	4.0%	5.3%	3.50%	4.1%	7.4%
PPL Corp	5.6%	5.5%	4.0%	3.0%	3.5%	2.14%	3.6%	9.2%
Southern Company	5.2%	3.0%	3.0%	3.5%	3.3%	2.70%	3.1%	8.3%
Mean	3.7%	4.2%	3.8%	5.2%	4.9%	5.2%	4.7%	**8.3%**
Median	3.5%	3.9%	3.7%	4.7%	4.9%	5.4%	4.6%	**8.3%**
Composite - Mean		7.9%	**7.5%**	8.9%	8.6%	8.8%	8.3%	
Composite - Median		7.3%	**7.2%**	8.1%	8.4%	**8.9%**	8.1%	

Sources: previous pages of this schedule.

STANDARD & POOR'S 500 COMPOSITE
20-YEAR U.S. TREASURY BOND YIELDS
RISK PREMIUMS

Year	EPS	BVPS	ROE	20-Year T-Bond Yield	Risk Premium
1977		$79.07			
1978	$12.33	$85.35	15.00%	7.90%	7.10%
1979	$14.86	$94.27	16.55%	8.86%	7.69%
1980	$14.82	$102.48	15.06%	9.97%	5.09%
1981	$15.36	$109.43	14.50%	11.55%	2.95%
1982	$12.64	$112.46	11.39%	13.50%	-2.11%
1983	$14.03	$116.93	12.23%	10.38%	1.85%
1984	$16.64	$122.47	13.90%	11.74%	2.16%
1985	$14.61	$125.20	11.80%	11.25%	0.55%
1986	$14.48	$126.82	11.49%	8.98%	2.51%
1987	$17.50	$134.07	13.42%	7.92%	5.50%
1988	$23.75	$141.32	17.25%	8.97%	8.28%
1989	$22.87	$147.26	15.85%	8.81%	7.04%
1990	$21.73	$153.01	14.47%	8.19%	6.28%
1991	$16.29	$158.85	10.45%	8.22%	2.23%
1992	$18.86	$149.74	12.22%	7.26%	4.96%
1993	$21.89	$180.88	13.24%	7.17%	6.07%
1994	$30.60	$193.06	16.37%	6.59%	9.78%
1995	$33.96	$216.51	16.58%	7.60%	8.98%
1996	$38.73	$237.08	17.08%	6.18%	10.90%
1997	$39.72	$249.52	16.33%	6.64%	9.69%
1998	$37.71	$266.40	14.62%	5.83%	8.79%
1999	$48.17	$290.68	17.29%	5.57%	11.72%
2000	$50.00	$325.80	16.22%	6.50%	9.72%
2001	$24.70	$338.37	7.44%	5.53%	1.91%
2002	$27.59	$321.72	8.36%	5.59%	2.77%
2003	$48.73	$367.17	14.15%	4.80%	9.35%
2004	$58.55	$414.75	14.98%	5.02%	9.96%
2005	$69.93	$453.06	16.12%	4.69%	11.43%
2006	$81.51	$504.39	17.03%	4.68%	12.35%
2007	$66.17	$529.59	12.80%	4.86%	7.94%
2008	$14.88	$451.37	3.03%	4.45%	-1.42%
2009	$50.97	$513.58	10.56%	3.47%	7.09%
2010	$77.35	$579.14	14.16%	4.25%	9.91%
2011	$86.95	$613.14	14.59%	3.82%	10.77%
2012	$86.51	$666.97	13.52%	2.46%	11.06%
2013	$100.20	$715.84	14.49%	2.88%	11.61%
2014	$102.31	$726.96	14.18%	3.41%	10.77%
2015	$88.43	$740.29	12.05%	2.47%	9.58%
2016	$95.48	$768.98	12.65%	2.30%	10.35%
Mean					7.00%

ROE = EPS divided by average of year-begin and year-end BVPS.

20-Year T-Bond Yield = income return on long-term U.S. Government Bonds.

Sources: Standard & Poor's, Duff & Phelps.

PROXY COMPANIES
CAPM COST RATES

Company	Risk-Free Rate	Beta	Risk Premium	CAPM Rates
Parcell Proxy Group				
ALLETE	2.91%	0.75	5.8%	7.3%
Alliant Energy	2.91%	0.70	5.8%	7.0%
El Paso Electric	2.91%	0.80	5.8%	7.5%
Hawaiian Electric Industries	2.91%	0.70	5.8%	7.0%
IDACORP	2.91%	0.70	5.8%	7.0%
OGE Energy	2.91%	0.95	5.8%	8.4%
Otter Tail Corp	2.91%	0.85	5.8%	7.8%
Pinnacle West Capital	2.91%	0.70	5.8%	7.0%
Portland General Electric	2.91%	0.70	5.8%	7.0%
Mean				**7.3%**
Median				**7.0%**
Morin Proxy Group				
American Electric Power Co.	2.91%	0.65	5.8%	6.7%
ALLETE	2.91%	0.75	5.8%	7.3%
Edison International	2.91%	0.65	5.8%	6.7%
El Paso Electric	2.91%	0.80	5.8%	7.5%
Hawaiian Electric Industries	2.91%	0.70	5.8%	7.0%
IDACORP Inc.	2.91%	0.70	5.8%	7.0%
NextEra Energy	2.91%	0.65	5.8%	6.7%
OGE Energy	2.91%	0.95	5.8%	8.4%
Otter Tail Corp.	2.91%	0.85	5.8%	7.8%
Pinnacle West Capital	2.91%	0.70	5.8%	7.0%
PNM Resources	2.91%	0.75	5.8%	7.3%
Portland General Electric	2.91%	0.70	5.8%	7.0%
PPL Corp	2.91%	0.75	5.8%	7.3%
Southern Company	2.91%	0.55	5.8%	6.1%
Mean				**7.1%**
Median				**7.0%**

Sources: Value Line Investment Survey, Standard & Poor's, Federal Reserve.

Yields on 20-Year U.S. Treasury Bonds

Month	Rate
Jan 2018	2.73%
Feb 2018	3.02%
Mar 2018	2.97%
Average	2.91%

PROXY COMPANIES
RATES OF RETURN ON AVERAGE COMMON EQUITY

Company	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2002-08 Average	2009-17 Average	2018	2019	2021-23
Parcell Proxy Group																					
ALLETE				12.0%	13.2%	13.4%	11.4%	7.3%	8.2%	9.5%	8.7%	8.4%	8.6%	9.4%	8.3%	8.0%		8.5%	8.0%	8.0%	8.5%
Alliant Energy	5.7%	9.1%	8.5%	10.3%	9.4%	11.5%	10.2%	7.5%	10.8%	10.4%	11.1%	11.4%	11.5%	10.6%	9.9%	11.4%	9.2%	10.5%	11.0%	11.0%	11.5%
El Paso Electric	6.3%	6.5%	6.3%	6.7%	10.5%	11.9%	11.4%	9.4%	11.7%	13.0%	11.4%	10.0%	9.5%	8.2%	9.3%	8.9%	8.5%	10.2%	9.5%		9.0%
Hawaiian Electric Industries	11.9%	11.1%	9.3%	9.7%	9.3%	7.7%	7.0%	5.9%	7.7%	9.1%	10.4%	9.7%	9.5%	8.5%	12.4%	7.8%	9.4%	9.0%	9.0%		9.0%
IDACORP	7.1%	4.2%	8.2%	7.3%	9.4%	7.1%	8.0%	9.3%	9.8%	10.5%	9.9%	10.1%	10.2%	9.7%	9.4%	9.4%	7.3%	9.8%	9.0%		9.5%
OGE Energy	11.1%	13.2%	12.7%	12.5%	15.0%	14.7%	13.0%	12.9%	13.5%	14.0%	13.2%	13.2%	12.5%	10.3%	10.0%	10.5%	13.2%	12.2%	10.0%	10.5%	11.0%
Otter Tail Corp	15.2%	12.0%	10.8%	11.6%	10.4%	10.4%	5.9%	3.7%	2.1%	2.7%	6.9%	9.4%	10.3%	9.9%	9.7%	11.0%	10.9%	7.3%	10.0%	10.5%	10.0%
Pinnacle West Capital	8.6%	8.3%	8.2%	6.7%	9.2%	8.5%	6.1%	6.8%	9.3%	8.7%	9.8%	9.9%	9.2%	9.7%	9.4%	9.8%	7.9%	9.2%	9.5%		10.5%
Portland General Electric					5.9%	11.5%	6.5%	6.2%	8.0%	9.0%	8.3%	7.7%	9.1%	8.2%	8.3%	8.6%			8.2%	8.5%	9.5%
Mean	9.4%	9.2%	9.1%	9.6%	10.3%	10.7%	8.8%	7.7%	9.0%	9.7%	10.0%	10.0%	10.0%	9.4%	9.6%	9.5%	9.5%	9.4%	9.4%	10.0%	9.8%
Median	8.6%	9.1%	8.5%	10.0%	9.4%	11.5%	8.0%	7.3%	9.3%	9.5%	9.9%	9.9%	9.5%	9.7%	9.4%	9.4%	9.3%	9.3%	9.5%	10.5%	9.5%
Morin Proxy Group																					
American Electric Power Co.	12.3%	12.4%	12.7%	11.9%	12.2%	11.7%	11.6%	11.0%	9.3%	10.7%	9.7%	9.9%	9.9%	10.1%	11.8%	10.0%	12.1%	10.3%	10.0%	10.0%	10.5%
ALLETE				12.0%	13.2%	13.4%	11.4%	7.3%	8.2%	9.5%	8.7%	8.4%	8.6%	9.4%	8.3%	8.0%		8.5%	8.0%	8.0%	8.5%
Edison International	15.4%	15.8%	3.9%	17.4%	14.9%	13.4%	13.4%	10.9%	10.7%	10.2%	15.2%	12.7%	13.5%	12.1%	11.0%	11.6%	13.5%	12.0%	11.0%		12.0%
El Paso Electric	6.3%	6.5%	6.3%	6.7%	10.5%	11.9%	11.4%	9.4%	11.7%	13.0%	11.4%	10.0%	9.5%	8.2%	9.3%	8.9%	8.5%	10.2%	9.5%		9.0%
Hawaiian Electric Industries	11.9%	11.1%	9.3%	9.7%	9.3%	7.7%	7.0%	5.9%	7.7%	9.1%	10.4%	9.7%	9.5%	8.5%	12.4%	7.8%	9.4%	9.0%	9.0%		9.0%
IDACORP Inc.	7.1%	4.2%	8.2%	7.3%	9.4%	7.1%	8.0%	9.3%	9.8%	10.5%	9.9%	10.1%	10.2%	9.7%	9.4%	9.4%	7.3%	9.8%	9.0%		9.5%
NextEra Energy	11.6%	13.5%	12.6%	11.1%	14.0%	12.9%	14.8%	13.3%	14.4%	13.7%	12.4%	12.2%	13.0%	12.9%	11.4%	18.7%	12.9%	13.6%	12.5%	13.0%	14.0%
OGE Energy	11.1%	13.2%	12.7%	12.5%	15.0%	14.7%	13.0%	12.9%	13.5%	14.0%	13.2%	13.2%	12.5%	10.3%	10.0%	10.5%	13.2%	12.2%	10.0%	10.5%	11.0%
Otter Tail Corp.	15.2%	12.0%	10.8%	11.6%	10.4%	10.4%	5.9%	3.7%	2.1%	2.7%	6.9%	9.4%	10.3%	9.9%	9.7%	11.0%	10.9%	7.3%	10.0%	10.5%	10.0%
Pinnacle West Capital	8.6%	8.3%	8.2%	6.7%	9.2%	8.5%	6.1%	6.8%	9.3%	8.7%	9.8%	9.9%	9.2%	9.7%	9.4%	9.8%	7.9%	9.2%	9.5%		10.5%
PNM Resources	6.3%	6.7%	7.9%	8.6%	8.4%	3.4%	0.5%	3.1%	4.8%	5.8%	6.6%	6.9%	6.7%	6.9%	7.0%	8.9%	6.0%	6.3%	7.5%		9.0%
Portland General Electric					5.9%	11.5%	6.5%	6.2%	8.0%	9.0%	8.3%	7.7%	9.1%	8.2%	8.3%	8.6%			8.2%	8.5%	9.5%
PPL Corp	23.6%	23.1%	18.3%	16.8%	18.4%	18.7%	17.2%	8.5%	14.5%	14.6%	14.2%	12.6%	11.8%	13.5%	19.1%	13.4%	19.4%	13.6%	14.0%	14.0%	13.5%
Southern Company	15.7%	15.6%	15.2%	15.0%	14.2%	14.5%	13.5%	13.2%	12.6%	12.9%	12.9%	12.7%	12.8%	12.7%	11.9%	12.3%	14.8%	12.7%	12.5%	12.5%	13.0%
Mean	12.1%	11.9%	10.5%	11.3%	11.8%	11.4%	10.0%	8.7%	9.8%	10.3%	10.7%	10.4%	10.5%	10.2%	10.6%	10.6%	11.3%	10.2%	10.1%	11.2%	10.6%
Median	11.8%	12.2%	10.1%	11.6%	11.4%	11.8%	11.4%	8.9%	9.6%	10.4%	10.2%	10.0%	10.1%	9.8%	9.9%	9.9%	11.5%	9.8%	9.8%	10.5%	10.3%

Source: Calculations made from data contained in Value Line Investment Survey.

PROXY COMPANIES
MARKET-TO-BOOK RATIOS

Company	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2002-08 Average	2009-17 Average
Parcell Proxy Group																		
ALLETE				212%	219%	195%	156%	113%	127%	138%	136%	152%	151%	146%	153%	182%		144%
Alliant Energy	110%	97%	120%	131%	155%	173%	131%	103%	131%	147%	161%	169%	197%	196%	214%	235%	131%	173%
El Paso Electric	140%	120%	148%	176%	179%	179%	134%	102%	134%	164%	163%	161%	158%	152%	167%	196%	154%	155%
Hawaiian Electric Industries	153%	151%	179%	181%	192%	166%	166%	113%	140%	150%	164%	156%	167%	175%	169%	184%	170%	158%
IDACORP	134%	112%	125%	122%	139%	132%	104%	94%	113%	119%	123%	136%	159%	158%	177%	203%	124%	142%
OGE Energy	147%	154%	178%	187%	205%	197%	145%	139%	180%	197%	204%	231%	228%	184%	170%	192%	173%	192%
Otter Tail Corp	245%	209%	185%	183%	178%	200%	167%	108%	120%	123%	152%	196%	196%	186%	207%	244%	195%	170%
Pinnacle West Capital	116%	114%	130%	130%	129%	127%	100%	90%	113%	125%	141%	153%	158%	160%	172%	192%	121%	145%
Portland General Electric					153%	140%	101%	83%	97%	109%	117%	131%	145%	148%	155%	173%		129%
Mean	149%	137%	152%	165%	172%	168%	134%	105%	128%	141%	151%	165%	173%	167%	176%	200%	**153%**	**156%**
Median	140%	120%	148%	179%	178%	173%	134%	103%	127%	138%	152%	156%	159%	160%	170%	192%	**153%**	**151%**
Morin Proxy Group																		
American Electric Power Co.	138%	124%	155%	165%	161%	190%	145%	112%	118%	128%	134%	145%	162%	166%	178%	193%		148%
ALLETE				212%	219%	195%	156%	113%	127%	138%	136%	152%	151%	146%	153%	182%	196%	144%
Edison International	117%	108%	153%	205%	194%	208%	149%	101%	111%	117%	146%	166%	177%	182%	191%	194%	162%	154%
El Paso Electric	140%	120%	148%	176%	179%	179%	134%	102%	134%	164%	163%	161%	158%	152%	167%	196%	154%	155%
Hawaiian Electric Industries	153%	151%	179%	181%	192%	166%	166%	113%	140%	150%	164%	156%	167%	175%	169%	184%	170%	158%
IDACORP Inc.	134%	112%	125%	122%	139%	132%	104%	94%	113%	119%	123%	136%	159%	158%	177%	203%	124%	142%
NextEra Energy	160%	167%	174%	201%	203%	249%	196%	170%	155%	157%	177%	201%	225%	220%	232%	247%	193%	198%
OGE Energy	147%	154%	178%	187%	205%	197%	145%	139%	180%	197%	204%	231%	228%	184%	170%	192%	173%	192%
Otter Tail Corp.	245%	209%	185%	183%	178%	200%	167%	108%	120%	123%	152%	196%	196%	186%	207%	244%	195%	170%
Pinnacle West Capital	116%	114%	130%	130%	129%	127%	100%	90%	113%	125%	141%	153%	158%	160%	172%	192%	121%	145%
PNM Resources	95%	93%	124%	147%	134%	125%	72%	50%	68%	86%	100%	109%	127%	129%	156%	185%	113%	112%
Portland General Electric					153%	140%	101%	83%	97%	109%	117%	131%	145%	148%	155%	173%		129%
PPL Corp	253%	239%	230%	259%	261%	316%	288%	209%	180%	152%	155%	164%	168%	187%	246%	238%	264%	189%
Southern Company	230%	233%	227%	238%	229%	230%	211%	182%	186%	208%	218%	209%	211%	212%	211%	205%	228%	205%
Mean	161%	152%	167%	185%	184%	190%	152%	119%	132%	141%	152%	165%	174%	172%	185%	202%	**174%**	**160%**
Median	144%	138%	165%	183%	186%	193%	147%	110%	124%	133%	149%	159%	165%	171%	175%	194%	**165%**	**153%**

Source: Calculations made from data contained in Value Line Investment Survey.

STANDARD AND POOR'S 500 COMPOSITE
RATES OF RETURN ON AVERAGE COMMON EQUITY
AND MARKET TO BOOK RATIOS

Year	Return on Average Equity	Market-To-Book Ratio
2002	8.4%	295%
2003	14.2%	278%
2004	15.0%	291%
2005	16.1%	278%
2006	17.0%	277%
2007	12.8%	284%
2008	3.0%	224%
2009	10.6%	187%
2010	14.2%	208%
2011	14.6%	207%
2012	13.5%	214%
2013	14.5%	237%
2014	14.2%	268%
2015	12.1%	273%
2016	12.7%	271%
Averages:		
2002-2008	**12.4%**	**275%**
2009-2016	**13.3%**	**233%**

Source: Standard & Poor's.

PROXY COMPANIES
RISK INDICATORS

Company	Value Line Safety Rank	Value Line Beta	Value Line Financial Strength		S&P Stock Ranking	
Parcell Proxy Group						
ALLETE	2	0.75	A	4.00	A-	3.67
Alliant Energy	2	0.70	A	4.00	B+	3.33
El Paso Electric	2	0.80	B++	3.67	B	3.00
Hawaiian Electric Industries	2	0.70	A	4.00	A-	3.67
IDACORP	2	0.70	A	4.00	A	4.00
OGE Energy	2	0.95	A	4.00	A-	3.67
Otter Tail Corp	2	0.85	A	4.00	B	3.00
Pinnacle West Capital	1	0.70	A+	4.33	A-	3.67
Portland General Electric	2	0.70	B++	3.67	A-	3.67
Mean	**1.9**	**0.76**	**A**	**3.96**	**B+/A-**	**3.52**
Morin Proxy Group						
American Electric Power Co.	1	0.65	A+	4.33	B+	3.33
ALLETE	2	0.75	A	4.00	A-	3.67
Edison International	2	0.65	A	4.00	B	3.00
El Paso Electric	2	0.80	B++	3.67	B	3.00
Hawaiian Electric Industries	2	0.70	A	4.00	A-	3.67
IDACORP Inc.	2	0.70	A	4.00	A	4.00
NextEra Energy	1	0.65	A+	4.33	A	4.00
OGE Energy	2	0.95	A	4.00	A-	3.67
Otter Tail Corp.	2	0.85	A	4.00	B	3.00
Pinnacle West Capital	1	0.70	A+	4.33	A-	3.67
PNM Resources	3	0.75	B+	3.33	B	3.00
Portland General Electric	2	0.70	B++	3.67	A-	3.67
PPL Corp	2	0.75	B++	3.67	B	3.00
Southern Company	2	0.55	A	4.00	A-	3.33
Mean	**1.9**	**0.73**	**A**	**3.95**	**B+/A-**	**3.43**

Sources: Value Line Investment Survey, Standard & Poor's Stock Guide.

PROXY COMPANIES AND STANDARD & POOR'S 500
RISK INDICATORS

Group	Value Line Safety Rank	Value Line Beta	Value Line Financial Strength	S&P Stock Rankng
S&P 500	2.4	1.04	B++	B+
Parcell Proxy Group	1.9	0.76	A	B+/A-
Morin Proxy Group	1.9	0.73	A	B+/A-

Sources: Value Line Investment Survey, Standard & Poor's Stock Guide.

Definitions:

Safety rankings are in a range of 1 to 5, with 1 representing the highest safety or lowest risk.

Beta reflectrs the variability of a particular stock, relative to the market as a whole. A stock with a beta of 1.0 moves in concert with the market; a stock with a beta below 1.0 is less variable than the market; and a stock with a beta above 1.0 is more variable than the market.

Financial strengths range from C to A++, with the latter representing the highest level.

Common stock rankings range from D to A+, with the latter representing the highest level.