

**BEFORE THE PENNSYLVANIA PUBLIC
UTILITY COMMISSION**

Pennsylvania Public Utility Commission, *et. al.* : R-2016-2537349, *et al.*
:
v. :
:
Metropolitan Edison Company :

Pennsylvania Public Utility Commission, *et. al.* : R-2016-2537352, *et al.*
:
v. :
:
Pennsylvania Electric Company :

Pennsylvania Public Utility Commission, *et. at.* : R-2016-2537355, *et. al.*
:
v. :
:
Pennsylvania Power Company :

Pennsylvania Public Utility Commission, *et. al.* : R-2016-2537359, *et al.*
:
v. :
:
West Penn Power Company :

DIRECT TESTIMONY

OF

DAVID C. PARCELL

ON BEHALF OF
OFFICE OF CONSUMER ADVOCATE

JULY 22, 2016

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1 **I. INTRODUCTION**

2
3 **Q. Please state your name, occupation, and business address.**

4 A. My name is David C. Parcell. I am President and Senior Economist of Technical
5 Associates, Inc. My business address is Suite 130, 1503 Santa Rosa Rd., Richmond,
6 Virginia 23229.

7
8 **Q. Please summarize your educational background and professional experience.**

9 A. I hold B.A. (1969) and M.A. (1970) degrees in economics from Virginia Polytechnic
10 Institute and State University (Virginia Tech) and a M.B.A. (1985) from Virginia
11 Commonwealth University. I have been a consulting economist with Technical
12 Associates since 1970 and I have provided cost of capital testimony in public utility
13 ratemaking proceedings dating back to 1972. In this regard, I have previously filed
14 testimony and/or testified in over 535 utility proceedings before about 50 regulatory
15 agencies in the United States and Canada. Attachment 1 provides a more complete
16 description of my education and relevant work experience.

17
18 **Q. What is the purpose of your testimony in this proceeding?**

19 A. The Office of Consumer Advocate (“OCA”) retained me to evaluate the cost of capital
20 aspects of the current filings of Metropolitan Edison Company (“Met-Ed”), Pennsylvania
21 Electric Company (“Penelec”), Pennsylvania Power Company (“Penn Power”), and West
22 Penn Power Company (“West Penn”). Collectively, I refer to these four companies as
23 “FirstEnergy PA Utilities” or “Companies.” I have performed independent studies and
24 am making recommendations of the current cost of capital (“COC”), including the cost of
25 common equity (“ROE”) for each of the Companies. In addition, since these Companies
26 are subsidiaries of FirstEnergy Corp. (“FirstEnergy”), I have also evaluated First Energy
27 in my analyses.

28
29 **Q. Have you prepared an exhibit in support of your testimony?**

A. Yes, I have prepared one exhibit, labeled Exhibit DCP-1, identified as Schedule 1 through Schedule 13. This exhibit was prepared either by me or under my direction. The information contained in this exhibit is correct to the best of my knowledge and belief.

II. RECOMMENDATIONS AND SUMMARY

Q. What are your recommendations in this proceeding?

A. My COC recommendations for each of the Companies are contained on Schedule 1 and are summarized below:

Capital Item	Percent	Cost	Weighted Cost
<u>Met-Ed</u>			
Long-Term Debt	48.83%	5.2496%	2.56%
Common Equity	51.17%	8.8 – 9.5%	4.50-4.86%
Total	100.0%		7.07-7.42%
			(7.25% mid-point)
<u>Penelec</u>			
Long-Term Debt	47.44%	5.5582%	2.64%
Common Equity	52.56%	8.8 – 9.5%	4.63-4.99%
Total	100.0%		7.26-7.63%
			(7.45% mid-point)
<u>Penn Power</u>			
Long-Term Debt	49.93%	5.8846%	2.94%
Common Equity	50.07%	8.8 – 9.5%	4.41-4.76%
Total	100.0%		7.34-7.69%
			(7.52% mid-point)
<u>West Penn</u>			
Long-Term Debt	49.68%	4.8683%	2.42%
Common Equity	50.32%	8.8 – 9.5%	4.43-4.78%
Total	100.0%		6.85-7.20%
			(7.02% mid-point)

1 **Q. How do your COC recommendations compare to the respective requests of the**
2 **Companies?**

3 A. My COC recommendations, as well as the COC requests of the Companies, are shown
4 below:

Company	Cost of Capital		Return on Equity	
	Parcell*	Company	Parcell*	Company
Met-Ed	7.25%	8.14%	9.15%	10.90%
Penelec	7.45%	8.58%	9.15%	11.30%
Penn Power	7.52%	8.70%	9.15%	11.50%
West Penn	7.02%	7.90%	9.15%	10.90%

* Mid-point

6
7 **Q. Please summarize your analyses and conclusions.**

8 A. This proceeding is concerned with the respective Companies' regulated electric utility
9 operations in Pennsylvania. My analyses concern the Companies' COCs. The first step
10 in performing these analyses is to develop the appropriate capital structure. Each of the
11 Companies proposes use of its projected capital structure as of the December 31, 2017
12 test period. I also use these capital structures.

13 The second step in a cost of capital calculation is to determine the embedded cost
14 rates of debt. As noted, each of the respective Companies proposes to use the projected
15 December 31, 2017 test period cost of debt. I also use each Company's proposed cost
16 rate for long-term debt.

17 The third step in the COC calculation is to estimate the ROE. I employ three
18 recognized methodologies to estimate the respective Companies' ROE, each of which I
19 apply to two proxy groups of utilities. These three methodologies and my findings are:

Methodology	Range
Discounted Cash Flow ("DCF")	8.2%-8.8% (8.5% mid-point)
Capital Asset Pricing Model ("CAPM")	6.2-6.5% (6.35% mid-point)
Comparable Earnings ("CE")	9.0%-10.0% (9.50% mid-point)

21
22 Based upon these findings, I conclude that each Company's ROE is within a range of 8.8
23 percent to 9.5 percent, which is based upon the upper end of the range of the results for

1 the DCF model and the mid-point of the range of the CE model.¹ I specifically
2 recommend a 9.15 percent ROE for each of the Companies. This differs from the
3 Companies' ROE requests in two respects. First, my ROE recommendations are
4 significantly less than the ROE requests of the Companies. Second, I recommend a
5 single ROE for each of the Companies, whereas the Companies are requesting different
6 ROEs for each Company.

7
8 **Q. What are the primary reasons for the significant differences in yours' and the**
9 **Companies' witness Ms. Ahern's respective recommendations?**

10 A. Ms. Ahern's "base" ROE recommendation, prior to her various "adjustments", is 10.15
11 percent; my recommendation is 9.15 percent. We have similar DCF conclusions;
12 however Mr. Ahern gives little weight to her DCF results, notwithstanding the fact that
13 the Commission historically has primarily relied on the DCF model. Ms. Ahern's CAPM
14 and RP models overstate the true ROE due to several errors in methodology, such as
15 reliance on projected interest rates and an over-statement of the risks of utilities and the
16 Companies. In addition, Ms. Ahern's use of unregulated firms in her models is also
17 improper and produces excessive ROE results.

18
19 **Q. Please explain why it is proper to use the same ROE for each of the Companies,**
20 **rather than Ms. Ahern's proposal to develop separate ROEs for each of the**
21 **Companies.**

22 A. There has been no demonstration that the four Companies have different operational and
23 risk characteristics. For example, each of the Companies has similar securities ratings,
24 which is an indication of similar risks for each Company. In addition, each of the
25 Companies is a subsidiary of FirstEnergy. As a result, each Company's common equity
26 essentially is supplied by the same entity. Finally, the "size", "credit", and "flotation"
27 adjustments she proposes are improper and result in excessive results.

28
29

¹ As I indicate in a later section, my ROE 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. ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES**

2
3 **Q. What are the primary economic and legal principles that establish the standards for**
4 **determining a fair rate of return for a regulated utility?**

5 A. Public utility rates are normally established in a manner designed to allow the recovery of
6 their costs, including capital costs. This is frequently referred to as “cost of service”
7 ratemaking. Rates for regulated public utilities traditionally have been primarily
8 established using the “rate base – rate of return” concept. Under this method, utilities are
9 allowed to recover a level of operating expenses, taxes, and depreciation deemed
10 reasonable for rate-setting purposes, and are granted an opportunity to earn a fair rate of
11 return on the assets utilized (i.e. rate base) in providing service to their customers.

12 The rate base is derived from the asset side of the utility’s balance sheet as a
13 dollar amount and the rate of return is developed from the liabilities/owners’ equity side
14 of the balance sheet as a percentage. Thus, the revenue impact of the cost of capital is
15 derived by multiplying the rate base by the rate of return, including income taxes.

16 The rate of return is developed from the cost of capital, which is estimated by
17 weighting the capital structure components (i.e. debt, preferred stock, and common
18 equity) by their percentages in the capital structure and multiplying these values by their
19 cost rates. This is also known as the weighted cost of capital.

20 Technically, “fair rate of return” is a legal and accounting concept that refers to an
21 ex post (after the fact) earned return on an asset base, while the cost of capital is an
22 economic and financial concept which refers to an ex ante (before the fact) expected, or
23 required, return on a capital base. In regulatory proceedings, however, the two terms are
24 often used interchangeably, and I have equated the two concepts in my testimony.

25 From an economic standpoint, a fair rate of return is normally interpreted to mean
26 that an efficient and economically managed utility will be able to maintain its financial
27 integrity, attract capital, and establish comparable returns for similar risk investments.
28 These concepts are derived from economic and financial theory and are generally
29 implemented using financial models and economic concepts.

30 Although I am not a lawyer and I do not offer a legal opinion, my testimony is
31 based on my understanding that two United States Supreme Court decisions provide the

1 controlling standards for a fair rate of return. The first decision is Bluefield Water Works
2 and Improvement Co. v. Public Serv. Comm'n of West Virginia, 262 U.S. 679 (1923). In
3 this decision, the Court stated:

4
5 The annual rate that will constitute just compensation depends upon many
6 circumstances and must be determined by the exercise of fair and
7 enlightened judgment, having regard to all relevant facts. A public utility
8 is entitled to such rates as will permit it to earn a return on the value of the
9 property which it employs for the convenience of the public equal to that
10 generally being made at the same time and in the same general part of the
11 country on investments in other business undertakings which are attended
12 by corresponding risks and uncertainties; but it has no constitutional right
13 to profits such as are realized or anticipated in highly profitable enterprises
14 or speculative ventures. The return should be reasonably sufficient to
15 assure confidence in the financial soundness of the utility, and should be
16 adequate, under efficient and economical management, to maintain and
17 support its credit and enable it to raise the money necessary for the proper
18 discharge of its public duties. A rate of return may be reasonable at one
19 time, and become too high or too low by changes affecting opportunities
20 for investment, the money market, and business conditions generally.
21

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
29 The rate-making process under the [Natural Gas] Act, i.e., the fixing of
30 'just and reasonable' rates, involves a balancing of the investor and
31 consumer interests . . . From the investor or company point of view it is
32 important that there be enough revenue not only for operating expenses
33 but also for the capital costs of the business. These include service on the
34 debt and dividends on the stock. By this standard the return to the equity
35 owner should be commensurate with returns on investments in other
36 enterprises having corresponding risks. That return, moreover, should be
37 sufficient to assure confidence in the financial integrity of the enterprise,
38 so as to maintain its credit and to attract capital.
39

1 The three economic and financial parameters in the Bluefield and Hope decisions
2 – comparable earnings, financial integrity, and capital attraction – reflect the economic
3 criteria encompassed in the “opportunity cost” principle of economics. The opportunity
4 cost principle provides that a utility and its investors should be afforded an opportunity
5 (not a guarantee) to earn a return commensurate with returns they could expect to achieve
6 on investments of similar risk. The opportunity cost principle is consistent with the
7 fundamental premise on which regulation rests, namely, that it is intended to act as a
8 surrogate for competition.

9
10 **Q. How can the Bluefield and Hope parameters be employed to estimate the cost of**
11 **capital for a utility?**

12 A. Neither the courts nor economic/financial theory has developed exact and mechanical
13 procedures for precisely determining the cost of capital. This is the case because the cost
14 of capital is an opportunity cost and is prospective-looking, which dictates that it must be
15 estimated. However, there are several useful models that can be employed to assist in
16 estimating the ROE, which is the capital structure item that is the most difficult to
17 determine. These include the DCF, CAPM, CE and risk premium (“RP”) methods. I
18 have not directly employed a RP model in my analyses although, as discussed later, my
19 CAPM analysis is a form of the RP methodology. Each of these methodologies will be
20 described in more detail later in my testimony.

21
22 **IV. GENERAL ECONOMIC CONDITIONS**
23

24 **Q. Are economic and financial conditions important in determining the costs of capital**
25 **for a public utility?**

26 A. Yes. The costs of capital, for both fixed-cost (debt and preferred stock) components and
27 common equity, are determined in part by current and prospective economic and
28 financial conditions. At any given time, each of the following factors has an influence on
29 the costs of capital:
30
31

- The level of economic activity (i.e., growth rate of the economy);
- The stage of the business cycle (i.e., recession, expansion, or transition);
- The level of inflation;
- The level and trend of interest rates; and,
- Current and expected economic conditions.

My understanding is that this position is consistent with the Bluefield decision that noted “[a] rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.” Bluefield, 262 U.S. at 693.

Q. What indicators of economic and financial activity did you evaluate in your analyses?

A. I examined several sets of economic statistics from 1975 to the present. I chose this time period because it permits the evaluation of economic conditions over four full business cycles plus the current cycle, allowing for an assessment of changes in long-term trends. Consideration of economic/financial conditions over a relatively long period of time allows me to assess how such conditions have had impacts on the level and trends of the costs of capital. This period also approximates the beginning and continuation of active rate case activities by public utilities, which generally began in the mid-1970s.

A business cycle is commonly defined as a complete period of expansion (recovery and growth) and contraction (recession). A full business cycle is a useful and convenient period over which to measure levels and trends in long-term capital costs because it incorporates the cyclical (i.e., stage of business cycle) influences and, thus, permits a comparison of structural (or long-term) trends.

Q. Please describe the timeframes of the four prior business cycles and the current cycle.

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

<u>Business Cycle</u>	<u>Expansion Cycle</u>	<u>Contraction Period</u>
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: National Bureau of Economic Research, "Business Cycle Expansions and Contractions."²

Q. Do you have any general observations concerning the recent trends in economic conditions and their impact on capital costs over this broad period?

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

However, in 2008 and 2009, the economy declined significantly, initially as a result of the 2007 collapse of the "sub-prime" mortgage market and the related liquidity crisis in the financial sector of the economy. Subsequently, this financial crisis intensified with a more broad-based decline, initially based on a substantial increase in petroleum prices and a dramatic decline in the U.S. financial sector, culminating with the collapse and/or bailouts of a significant number of well-known institutions such as Bear Stearns, Lehman Brothers, Merrill Lynch, Freddie Mac, Fannie Mae, AIG and Wachovia. The recession also witnessed the demise of national companies such as Circuit City and the bankruptcies of automotive manufacturers such as Chrysler and General Motors.

This decline has been described as the worst financial crisis since the Great Depression and has been referred to as the "Great Recession." Beginning in 2008, the U.S. and other governments implemented unprecedented actions to attempt to correct or minimize the scope and effects of this recession.

The recession reached its low point in mid-2009, when the economy began to expand again, although at a slow and uneven rate. However, the length and severity of

² <http://www.nber.org/cycles/cyclesmain.html>.

1 the recession, as well as a relatively slow and uneven recovery, indicate that the impacts
2 of the recession have been and will be felt for an extended period of time.

3
4 **Q. Please describe recent and current economic and financial conditions and their**
5 **impact on the cost of capital.**

6 A. One impact of the Great Recession has been a reduction in actual and expected
7 investment returns and a corresponding reduction in the costs of capital. This decline is
8 evidenced by a decline in both short-term and long-term interest rates and the
9 expectations of investors and is reflected in ROE model results (such as DCF, CAPM and
10 CE). Regulatory agencies throughout the U.S. have recognized the decline in capital
11 costs by authorizing lower ROEs for regulated utilities in each of the last several years..

12 Schedule 2 shows several sets of relevant economic and financial statistics for the
13 cited time periods. Pages 1 and 2 contain general macroeconomic statistics; pages 3 and
14 4 show interest rates; and pages 5 and 6 contain equity market statistics.

15 Pages 1 and 2 show that in 2007 the economy subsequently entered a significant
16 decline, as indicated by the lower growth rate in real (i.e., adjusted for inflation) Gross
17 Domestic Product (“GDP”), lower levels of industrial production, and an increase in the
18 unemployment rate. This recession lasted until mid-2009, making it a longer-than-
19 normal recession, as well as a much deeper recession. Since then, economic growth has
20 been somewhat erratic and the economy has grown slower than the prior expansions.

21 Pages 1 and 2 also show the rate of inflation. As reflected in the Consumer Price
22 Index (“CPI”), for example, inflation rose significantly during the 1975-1982 business
23 cycle and reached double-digit levels in 1979-1980. The rate of inflation has declined
24 substantially since 1981. Since 2008, the CPI has been 3 percent or lower, with 2013
25 being only 1.5 percent and both 2014 and 2015 being below 1 percent. It is thus apparent
26 that the rate of inflation has generally been declining over the past several business
27 cycles. Recent and current levels of inflation are at the lowest levels of the past 35 years,
28 which is reflective of lower capital costs.³

³ 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 **Q. What have been the trends in interest rates over the four prior business cycles and**
2 **at the current time?**

3 A. Pages 3 and 4 of Schedule 2 show several series of interest rates. Both short-term and
4 long-term rates rose sharply to record levels in 1975-1981 when the inflation rate was
5 high. Interest rates declined substantially in conjunction with inflation since the early
6 1980's.

7 From 2008 to late 2015, the Federal Reserve System ("Federal Reserve")
8 maintained the Federal Funds rate (i.e., short-term interest rate) at 0.25 percent, an all-
9 time low. The Federal Reserve raised it slightly to 0.50 percent in December of 2015, but
10 contrary to some expectations, has not raised it further in the first several months of 2016.
11 The Federal Reserve also purchased U.S. Treasury securities to stimulate the economy.⁴
12 As seen on page 4, in 2012, both U.S. and corporate bond yields declined to their lowest
13 levels in the past four business cycles and in more than 35 years. Even with the
14 "tapering" and eventual ending of the Federal Reserve's Quantitative Easing program,
15 interest rates have remained low. Currently, both government and corporate lending rates
16 remain at historically low levels, again reflective of lower capital costs. In fact, Triple B
17 utility bonds (i.e., each of the Companies' ratings) are currently yielding just over four
18 percent.

19
20 **Q. What does this schedule show for trends of common share prices?**

21 A. Pages 5 and 6 show several series of common stock prices and ratios. These indicate that
22 stock prices were essentially stagnant during the high inflation/high interest rate
23 environment of the late 1970s and early 1980s. The 1983-1991 business cycle and the
24 more recent cycles witnessed a significant upward trend in stock prices. The beginning
25 of the recent financial crisis saw stock prices decline precipitously, as stock prices in
26 2008 and early 2009 were down significantly from peak 2007 levels, reflecting the
27 financial/economic crisis. Beginning in the second quarter of 2009, prices recovered

⁴ 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 substantially and ultimately reached and exceeded the levels achieved prior to the
2 “crash.” On the other hand, recent equity markets have been somewhat volatile.

3
4 **Q. What conclusions do you draw from your discussion of economic and financial**
5 **conditions?**

6 A. Recent economic and financial circumstances have differed from any that have prevailed
7 since at least the 1930s. The late 2008-early 2009 deterioration in stock prices, the
8 decline in U.S. Treasury bond yields, and an increase in corporate bond yields were
9 evidenced in the then-evident “flight to safety.” Concurrently, there was a decline in
10 capital costs and returns, which significantly reduced the value of most retirement
11 accounts, investment portfolios and other assets. One significant aspect of this has been a
12 decline in investor expectations of returns,⁵ even with the return of stock prices to levels
13 achieved prior to the “crash.” This is evident in several ways: 1) lower interest rates on
14 bank deposits; 2) lower interest rates on U.S. Treasury and corporate bonds; 3), lower
15 increases in social security cost of living benefits;⁶ and 4) lower authorized ROEs by
16 regulatory commissions. Finally, as noted above, utility bond interest rates are currently
17 at levels below those prevailing prior to the financial crisis of late 2008 to early 2009 and
18 are near the lowest levels in the past 35 years. It is also noteworthy that long-term
19 interest rates have declined slightly in recent months, in spite of the Federal Reserve’s
20 raising of short-term rates in December of 2015.

21
22 **Q. How do these economic/financial conditions impact the determination of a return on**
23 **equity for regulated utilities?**

24 A. The costs of capital for regulated utilities have declined in recent years. For example, the
25 current interest costs that utilities pay on new debt remain near the low point of the last
26 several decades. In addition, the results of the traditional ROE models (i.e., DCF, CAPM
27 and CE) are lower than was the case prior to the Great Recession. In light of this, it is not

⁵ See, for example, Kiplinger’s Personal Finance, “Investors Brace for Smaller Gains, Focus on Long-Term,” August 30, 2015.

⁶ The 2015 increase in Social Security benefits was 1.70 percent – near an all-time. There is no increase in 2016 Social Security benefits.

surprising that the average ROE authorized by state regulatory agencies have declined and continue to decline through 2015, as follows:

Year	Electric ⁷	Natural Gas
2012	10.01%	9.94%
2013	9.94%	9.68%
2014	9.76%	9.78%
2015	9.58%	9.60%

V. FIRSTENERGY PA UTILITIES' OPERATIONS AND BUSINESS RISKS

Q. Please provide a brief description of the four FirstEnergy PA utility companies that are the applicants in these proceedings.

A. Each of the four Companies is a regulated public utility that provides electric service in a portion of Pennsylvania. Further, two of the Companies have been historically owned by the same public utility holding company entity – originally General Public Utilities and since 2001 FirstEnergy.⁸

Met-Ed provides transmission and distribution (wires) service in 3,300 square miles of eastern and south central Pennsylvania. Its service area contains a population of about 1.2 million people.

Penelec provides wires service in an area comprised of 17,600 square miles in western, northern and south central Pennsylvania. Its service area contains some 2.3 million people.

Penn Power furnishes electric service in a service area comprised of 1,100 square miles of western Pennsylvania. This area's population totals about 0.3 million people.

West Penn is a wires company that provides service in an area comprised of 10,400 square miles of southwestern, south central and northern Pennsylvania. The population of this area is 1.6 million people.

⁷ Average ROE values for electric utilities exclude Virginia surcharge/rider generation cases that incorporate plan-specific ROE premiums. See Regulatory Research Associates, Regulatory Focus, January 14, 2016, page 1.

⁸ Met-Ed and Penelec were previously subsidiaries of General Public Utilities.

As noted previously, each of these Companies is ultimately a subsidiary of FirstEnergy.⁹

Q. Please describe FirstEnergy.

A. FirstEnergy is a holding company. On a consolidated basis, FirstEnergy and its subsidiaries are involved in the generation, transmission and distribution of electricity. FirstEnergy describes itself as one of the largest investor-owned electric systems in the U.S.¹⁰ FirstEnergy has ten utility operating subsidiaries, including the Companies. The other utility subsidiaries are:

Ohio Edison Company
Cleveland Electric Illuminating Company
Toledo Edison Company
Jersey Central Power & Light Company
Potomac Edison Company
Monongahela Power Company

Q. What are the current security ratings of the Companies?

A. The ratings of these entities are shown below:

Type of Security	Met-Ed	Penelec	Penn Power	West Penn	FirstEnergy
Issuer					
Moody's	Baa1	Baa2	Baa1	Baa1	Baa2
S&P	BBB-	BBB-	BBB-	BBB-	BBB-
Senior Secured					
Moody's			A2	A2	
S&P				BBB+	
Senior Unsecured					
Moody's	Baa1	Baa2			Baa3
S&P	BBB-	BBB-			BBB-

Source: Response to OCA Interrogatory Set II, No. 6.

Q. What has been the trend in the Companies' bond ratings in recent years?

⁹ Penn Power is a subsidiary of Ohio Edison.

¹⁰ <https://www.firstenergycorp.com/content/fecorp/about.html>

1 A. This is shown on Schedule 3. Each Company's debt has been rated in the Baa category
2 (per Moody's) and BBB category (per Standard & Poor's) since 2011.

3
4 **Q. How do the bond ratings of the Companies compare to other electric and**
5 **combination gas/electric utilities?**

6 A. As I indicated in the previous answer, each of the Companies has Triple B bond ratings
7 on its long-term debt. Below is a table depicting the bond rating data of the 48 electric
8 utilities and combination gas/electric utilities covered by AUS Utility Reports:

9

Moody's Rating	Number of Companies	S&P Rating	Number of Companies
Aa2	1	AA	-
Aa3	-	AA-	1
A1	1	A+	--
A2	7	A	7
A3	18	A-	18
Baa1*	11	BBB+	11
Baa2*	7	BBB	9
Baa3	--	BBB-*	3
Ba or less	--	BB	--
NR	3	NR	3

* Companies' ratings.

10
11 As this indicates, the Companies' ratings are lower than most utilities.

12
13 **Q. Are the ratings of the Companies constrained by the ratings of FirstEnergy?**

14 A. Yes, they are. S&P has noted the following relationship in its May 4, 2015 Research
15 report on Met-Ed:

16 "Met Ed is a wholly owned subsidiary of FirstEnergy Corp. We consider
17 Met Ed as "core" to its parent, reflecting our view that Met Ed is highly
18 unlikely to be sold and has a strong long-term commitment from senior
19 management. **Therefore, Met Ed's high SACP (Stand-alone credit**
20 **profile) is capped at First Energy's group credit profile BBB-."**
21 **[Emphasis Added]**
22

1 This makes it clear that Met-Ed's (as well as the other Companies) have lower S&P
2 credit ratings due to the ratings of FirstEnergy. This is further verified by S&P's
3 description of Met-Ed's Business Risk:

4 "We view Met Ed's stand-alone business risk profile as excellent,
5 reflecting its very-low risk regulated electric distribution business."
6

7 In contrast, S&P rates FirstEnergy's Business Risk as strong, a lower category. S&P
8 noted in an April 28, 2016 "RatingsDirect":

9 "FirstEnergy's business risk profile reflects the combination of the
10 company's competitive and regulated utility business. Based on our
11 forward-looking view of the company's revenue, cash flow, and assets, we
12 view FirstEnergy as consisting of 76% regulated businesses and 25%
13 competitive businesses. The regulated business consist of distribution and
14 generation business (55%) located in Ohio, Pennsylvania, New Jersey,
15 West Virginia, and Maryland, and transmission businesses (20%)
16 regulated by the FERC. **The higher-risk competitive businesses greatly**
17 **increases the company's exposure to lower generation volumes and**
18 **commodity prices.**

19 ...
20

21 Under our **group rating methodology**, we view FirstEnergy as the parent
22 of a group whose members include American Transmission Systems,
23 Cleveland Electric Illuminating Co, FirstEnergy Solutions, FirstEnergy
24 Transmission LLC, Jersey Central Power & Light Co, Metropolitan
25 Edison Co, Monongahela Power Co, Ohio Edison Co, Pennsylvania
26 Electric Co, Pennsylvania Power Co, Potomac Edison Co, Toledo Edison
27 Co, Trans-Allegheny Interstate Line Co, and West Penn Power Co.
28 FirstEnergy's group credit profile is 'bbb-' leading to an issuer credit
29 rating of 'BBB-.' **[Emphasis Added]**
30

31 Moody's, which does not share S&P's "group rating methodology," has given higher
32 ratings to each of the Companies, in comparison to FirstEnergy. This is indicative of a
33 perceived lower risk of the Companies, in relation to that of FirstEnergy as a whole.

34 In summary, it is apparent that the somewhat lower securities ratings of the
35 Companies do not necessarily indicate greater risk. This is the case since the Companies'
36 securities ratings are not independent of those of FirstEnergy. Significantly, FirstEnergy
37 on a consolidated basis, has a significantly lower common equity ratio than both the
38 Companies and electric utilities in general. In addition, FirstEnergy has a portion of its
39 operations that are engaged in more risky non-regulated activities. As a result,

1 FirstEnergy's higher risks are factors in determining the below-average securities ratings
2 of the Companies.

3
4 **VI. CAPITAL STRUCTURES AND COSTS OF DEBT**

5
6 **Q. What is the importance of determining a proper capital structure in a regulatory
7 framework?**

8 A. A utility's capital structure is important because the concept of rate base – rate of return
9 regulation requires the capital structure to be utilized in estimating the total cost of
10 capital. Within this framework, it is proper to ascertain whether the utility's capital
11 structure is appropriate relative to its level of business risk and relative to other utilities.

12 As discussed in Section III of my testimony, the purpose of determining the
13 proper capital structure for a utility is to ascertain its capital costs. The rate base – rate of
14 return concept recognizes the assets employed in providing utility services and provides
15 for a return on these assets by identifying the liabilities and common equity (and their
16 cost rates) used to finance the assets. In this process, the rate base is derived from the
17 asset side of the balance sheet and the cost of capital is derived from the
18 liabilities/owners' equity side of the balance sheet. The inherent assumption in this
19 procedure is that the dollar values of the capital structure and the rate base are
20 approximately equal and the former is utilized to finance the latter.

21 The common equity ratio (i.e. the percentage of common equity in the capital
22 structure) is the capital structure item which normally receives the most attention. This is
23 the case because common equity: (1) usually commands the highest cost rate; (2)
24 generates associated income tax liabilities; and (3) causes the most controversy since its
25 cost cannot be precisely determined.

26
27 **Q. What are the historic capital structure ratios of the Companies and FirstEnergy?**

28 A. I have examined the historic (2011-2015) capital structure ratios of the Companies and
29 FirstEnergy. See Schedule 4. The respective common equity ratios of the Companies
30 have been:

1

	Including S-T Debt	Excluding S-T Debt
	<u>Met-Ed</u>	
2011	45.0%	52.6%
2012	45.8%	52.3%
2013	48.4%	50.6%
2014	47.3%	48.3%
2015	46.9%	48.4%
	<u>Penelec</u>	
2011	44.5%	45.7%
2012	44.3%	44.7%
2013	47.0%	50.8%
2014	47.7%	47.7%
2015	47.7%	47.7%
	<u>Penn Power</u>	
2011	58.7%	58.7%
2012	60.8%	60.8%
2013	47.8%	51.2%
2014	45.0%	52.5%
2015	49.6%	58.2%
	<u>West Penn</u>	
2011	48.7%	49.6%
2012	51.2%	51.2%
2013	49.9%	52.5%
2014	50.4%	54.2%
2015	49.3%	49.5%

2

3

Correspondingly, FirstEnergy's common equity ratios have been:

4

	Including S-T Debt	Excluding S-T Debt
2011	43.4%	43.4%
2012	40.6%	43.3%
2013	38.1%	42.4%
2014	36.3%	38.3%
2015	36.0%	37.9%

5

6

7

8

This indicates that FirstEnergy, on a consolidated basis, has had a substantially lower equity ratio than any of the Companies. In addition, its equity ratio has declined over the past five years.

Page 6 shows the 2015 capital structures for each of the utility subsidiaries of FirstEnergy. The respective common equity ratios are generally consistent with those of the Companies and all exceed those of First Energy.

It is also evident that the Companies and FirstEnergy have had and continue to employ short-term debt in their respective capital structures. It is my understanding that this Commission does not normally include short-term debt in capital structures for the purpose of setting COC. As a result, I am not proposing to include short-term debt in the Companies' respective capital structures and COCs. On the other hand, I note that the rating agencies consider all debt, including short-term debt, in their benchmarks; thus it is proper to consider short-term debt in comparing capital structures among utilities.

Q. How do these capital structures compare to those of investor-owned electric utilities?

A. Schedule 5 shows the common equity ratios (including short-term debt in capitalization) for the groups of electric and combination electric utilities followed by AUS Utility Reports. These are:

Year	Electric	Combination Gas And Electric
2011	47%	46%
2012	47%	46%
2013	48%	47%
2014	47%	47%
2015	47%	47%

(Source: AUS Utility Reports).

These equity ratios are similar to those of the Companies.

Q. What have been recently-authorized common equity ratios for regulated electric utilities in recent years?

A. This is shown in the table below, which summarizes the average common equity ratios authorized by state regulatory commissions for regulated electric utilities. As this indicates, the average annual authorized common equity ratios for electric utilities have been:

1

<u>Year</u>	<u>Average C.E. Ratio ¹¹</u>
2012	50.55%
2013	49.25%
2014	50.28%
2015	49.54%

2

3 This indicates that the average common equity ratio has been about 50 percent in
4 recent years. In contrast, each of the Companies' proposed equity ratios are similar to the
5 above-cited electric utilities.

6

7 **Q. What capital structures are the Companies requesting in these proceedings?**

8 A. Each of the Companies is proposing their projected capital as of December 31, 2017.

9

	<u>Met-Ed</u>	<u>Penelec</u>	<u>Penn Power</u>	<u>West Penn</u>
Long-Term Debt	48.83%	47.44%	49.93%	49.68%
Common Equity	51.17%	52.56%	50.07%	50.32%

10

11 **Q. What capital structures do you propose to use in these proceedings?**

12 A. I have used each of the Companies' proposed capital structures for the purposes of this
13 proceeding.

14

15 **Q. What are the cost rates of debt in the Companies' applications?**

16 A. Each of the respective companies proposes to use its projected December 31, 2017 cost
17 of long-term debt. I also use these rates in my COC analyses.

18

19 **Q. Can the ROE be determined with the same degree of precision as the cost of debt?**

20 A. No. The cost rates of debt are largely determined by interest payments, issue prices, and
21 related expenses. The ROE, on the other hand, cannot be precisely quantified, primarily
22 because this cost is an opportunity cost. As mentioned previously, there are several
23 models that can be employed to estimate the ROE. Three of the primary methods – DCF,
24 CAPM, and CE – are developed in the following sections of my testimony.

¹¹ Regulatory Research Associates, Regulatory Focus, January 14, 2016.

1 **VII. SELECTION OF PROXY GROUPS**

2
3 **Q. How have you estimated the ROE for the Companies?**

4 A. None of the Companies are publicly-traded companies. Their parent company,
5 FirstEnergy is publicly-traded. Consequently, it is possible to directly apply ROE models
6 to FirstEnergy. However, in COC analyses, it is customary to analyze groups of
7 comparison, or “proxy,” companies as a substitute for the Companies to determine their
8 ROEs.

9 I have accordingly selected two groups for comparison to the Companies. I
10 selected one group of electric utilities similar to the Companies and FirstEnergy using the
11 criteria listed on Schedule 6. These criteria are as follows:

- 12
13 (1) Market cap of \$5 billion to \$25 billion or greater;
14 (2) Electric revenues 50% or greater;
15 (3) Common equity ratio 40% or greater;
16 (4) Value Line Safety rank of 1, 2, or 3;
17 (5) Standard & Poor’s (“S&P”) stock ranking of A or B;
18 (6) S&P and/or Moody’s bond ratings of BBB;
19 (7) Currently pays dividends; and,
20 (8) Not involved in major merger or acquisition.

21
22 In addition, I have conducted studies of the cost of equity for the electric utilities
23 proxy group that was selected by Companies’ witness Pauline Ahern.

24
25 **Q. Please explain why you are using two proxy groups in your cost of equity analyses.**

26 A. It has long been my practice to develop my own independently-determined proxy group
27 and to also conduct cost of equity analyses on the utility witness’ proxy group. My
28 conclusions and recommendations, in turn, are based upon the results of both proxy
29 groups.

1 **VIII. DCF ANALYSIS**

2
3 **Q. What is the theory and methodological basis of the DCF model?**

4 A. The DCF model is one of the oldest and most commonly-used models for estimating the
5 ROE for public utilities.¹² It is my understanding that the Commission has predominately
6 relied on the DCF model in determining utilities' ROE in recent years. Although there
7 are various other models that the Commission has cited as being influences on the ROE,
8 the DCF method applied to a proxy group of similar risk utilities has historically been the
9 primary determinant used by the Commission in establishing the ROE for utilities.¹³

10 The DCF model is based on the "dividend discount model" of financial theory,
11 which maintains that the value (price) of any security or commodity is the discounted
12 present value of all future cash flows.

13 The most common variant of the DCF model assumes that dividends are expected
14 to grow at a constant rate (the "constant growth" or "Gordon DCF model"). In this
15 framework, the ROE is derived from the following formula:

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

16 where: P = current price

17 D = current dividend rate

18 K = discount rate (cost of capital)

19 G = constant rate of expected growth

20 This formula essentially recognizes that the return expected or required by investors is
21 comprised of two factors: the dividend yield (current income) and expected growth in
22 dividends (future income).
23

24 **Q. Please explain how you employ the DCF model.**

¹² Certain regulatory commissions (e.g., Federal Energy Regulatory Commission) rely primarily on the DCF methodology in determining the ROE for public utilities.

¹³ Pa. PUC v. City of Lancaster – Bureau of Water, Docket No. R-2010-2179103, at 56 (Order entered July 14, 2011); Pa. PUC v. PPL Electric Utilities Corp., Docket No. R-00049255, at 59 (Order entered December 22, 2004).

1 A. I use the constant growth DCF model. In doing so, I combine the current dividend yield
2 for each of the proxy utility stocks described in the previous section with several
3 indicators of expected dividend growth.
4

5 **Q. How did you derive the dividend yield component of the DCF equation?**

6 A. Several methods can be used to calculate the dividend yield component. These methods
7 generally differ in the manner in which the dividend rate is employed (i.e., current versus
8 future dividends or annual versus quarterly compounding variant, which is expressed as
9 follows:

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

10 This dividend yield component recognizes the timing of dividend payments and dividend
11 increases.

12 The P_0 in my yield calculation is the average of the high and low stock price for
13 each proxy company for the most recent three month period (April - June 2016). The D_0
14 is the current annualized dividend rate for each proxy company.
15

16 **Q. How do you estimate the dividend growth component of the DCF equation?**

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

25 A wide array of indicators exists for estimating investors' growth expectations.
26 As a result, it is evident that investors do not always use one single indicator of growth.
27 It therefore is necessary to consider alternative dividend growth indicators in deriving the
28 growth component of the DCF model. I have considered five indicators of growth in my
29 DCF analyses. These are:

1. Years 2011-2015 (5-year average) earnings retention, or fundamental growth;
2. Five-year average of historic growth in earnings per share (EPS), dividends per share (DPS), and book value per share (BVPS);
3. Years 2016, 2017 and 2019-2021 projections of earnings retention growth (per Value Line);
4. Years 2013-2015 to 2019-2021 projections of EPS, DPS, and BVPS (per Value Line); and,
5. Five-year projections of EPS growth (per First Call).

I believe this combination of growth indicators is a representative and appropriate set with which to begin the process of estimating investor expectations of dividend growth for the groups of proxy companies. I also believe that these growth indicators reflect the types of information that investors consider in making their investment decisions. As I indicated previously, investors have an array of information available to them, all of which would be expected to have some impact on their decision-making process.

Q. Please describe your DCF calculations.

A. Schedule 7 presents my DCF analysis. Page 1 shows the calculation of the “raw” (i.e. prior to adjustment for growth) dividend yield for each proxy company. Pages 2 and 3 show the growth rates for the groups of proxy companies. Page 4 shows the DCF calculations, which are presented on several bases: mean, median, low and high values. These results can be summarized as follows:

	Mean	Median	Mean Low ¹⁴	Mean High ¹⁵	Median Low ¹⁴	Median High ¹⁵
Parcell Proxy Group	7.9%	7.7%	7.3%	8.8%	7.0%	8.2%
Ahern Proxy Group	7.7%	7.8%	6.9%	8.5%	6.8%	8.6%

I note that the individual DCF calculations shown on Schedule 7 should not be interpreted to reflect the expected cost of capital for individual companies in the proxy

¹⁴ Using the lowest growth rate.

¹⁵ Using only the highest growth rate.

groups; rather, the individual values shown should be interpreted as alternative information considered by investors.

Q. What do you conclude from your DCF analyses?

A. The DCF rates resulting from the analysis of the proxy groups fall into a wide range between 6.8 percent and 8.8 percent. The highest DCF rates are 8.2 percent to 8.8 percent.

I believe a range of 8.2 percent to 8.8 percent represents the current DCF-derived ROE for the proxy groups. This range includes the highest DCF rates and exceeds the low and mean/median DCF rates.

IX. CAPM ANALYSIS

Q. Please describe the theory and methodological basis of the CAPM.

A. CAPM was developed in the 1960s and 1970s as an extension of modern portfolio theory (MPT), which studies the relationships among risk, diversification, and expected returns. The CAPM describes and measures the relationship between a security's investment risk and its market rate of return.

Q. How is the CAPM derived?

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 RP method. I believe the CAPM is generally superior to the simple RP method because the CAPM specifically recognizes the risk of a particular

1 company or industry (i.e., beta), whereas the simple RP method assumes the same ROE
2 for all companies exhibiting similar bond ratings or other characteristics.

3
4 **Q. What do you use for the risk-free rate?**

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

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

10 I have performed CAPM calculations using the three-month average yield (April -
11 June 2016) for 20-year U.S. Treasury bonds. I use the yields on long-term Treasury
12 bonds since this matches the long-term perspective of ROE analyses. Over this three
13 month period, these bonds had an average yield of 2.15 percent.

14
15 **Q. What is beta and what betas do you employ in your CAPM?**

16 A. Beta is a measure of the relative volatility (and thus risk) of a particular stock in relation
17 to the overall market. Betas less than 1.0 are considered less risky than the market,
18 whereas betas greater than 1 are more risky. Utility stocks traditionally have had betas
19 below 1. I utilize the most recent Value Line betas for each company in the proxy
20 groups.

21
22 **Q. How do you estimate the market risk premium component?**

23 A. The market risk premium component ($R_m - R_f$) represents the investor-expected premium
24 of common stocks over the risk-free rate, or long-term government bonds. For the
25 purpose of estimating the market risk premium, I considered alternative measures of
26 returns of the S&P 500 (a broad-based group of large U.S. companies) and 20-year U.S.
27 Treasury bonds (i.e., same timeframe as employed in Morningstar sources used to
28 develop risk premiums).

29 First, I compared the actual annual returns on equity of the S&P 500 with the
30 actual annual income returns of U.S. Treasury bonds. Schedule 8 shows the ROE for the
31 S&P 500 group for the period 1978-2014 (all available years reported by S&P). This

1 schedule also indicates the annual income returns on 20-year U.S. Treasury bonds and the
2 annual differentials (i.e. risk premiums) between the S&P 500 and U.S. Treasury 20-year
3 bonds. Based upon these returns, I conclude that the risk premium from this analysis is
4 6.85 percent.

5 I next considered the total returns (i.e. dividends/interest plus capital gains/losses)
6 for the S&P 500 group as well as for long-term government bonds, as tabulated by
7 Morningstar (formerly Ibbotson Associates), using both arithmetic and geometric means.
8 I considered the total returns for the entire 1926-2014 period, which are as follows:
9

	<u>S&P 500</u>	<u>L-T Gov't Bonds</u>	<u>Risk Premium</u>
Arithmetic	12.1%	6.1%	6.0%
Geometric	10.1%	5.7%	4.4%

10
11 I conclude from this analysis that the expected risk premium is about 5.75 percent (i.e.
12 average of all three risk premiums: 6.85 percent from Schedule 13; 6.0 percent
13 arithmetic and 4.4 percent geometric from Morningstar). I believe that a combination of
14 arithmetic and geometric means is appropriate since investors have access to both types
15 of means¹⁶ and presumably, both types are reflected in investment decisions and thus,
16 stock prices and the ROE.
17

18 **Q. What are your CAPM results?**

19 A. Schedule 14 shows my CAPM calculations. The results are:
20

	<u>Mean</u>	<u>Median</u>
Parcell Proxy Group	6.3%	6.2%
Ahern Proxy Group	6.4%	6.5%

21
22 **Q. What is your conclusion concerning the CAPM ROE?**

23 A. The CAPM results collectively indicate a ROE of 6.2 percent to 6.5 percent for the
24 groups of proxy utilities. I conclude that an appropriate CAPM ROE estimation for the
25 Companies is 6.2 percent to 6.5 percent.

¹⁶ 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 **X. CE ANALYSIS**

2
3 **Q. Please describe the basis of the CE methodology.**

4 A. The CE method is derived from the “corresponding risk” concept discussed in the
5 Bluefield and Hope cases. This method is thus based upon the economic concept of
6 opportunity cost. As previously noted, the ROE is an opportunity cost: the prospective
7 return available to investors from alternative investments of similar risk.

8 The CE method is designed to measure the returns expected to be earned on the
9 original cost book value of similar risk enterprises. Thus, it provides a direct measure of
10 the fair return, since it translates into practice the competitive principle upon which
11 regulation rests.

12 The CE method normally examines the experienced and/or projected return on
13 book common equity. The logic for examining returns on book equity follows from the
14 use of original cost rate base regulation for public utilities, which uses a utility’s book
15 common equity to determine the cost of capital. This cost of capital is, in turn, used as
16 the fair rate of return which is then applied (multiplied) to the book value of rate base to
17 establish the dollar level of capital costs to be recovered by the utility. This technique is
18 thus consistent with the rate base-rate of return methodology used to set utility rates.

19
20 **Q. How do you apply the CE methodology in your analysis of the Companies’ ROE?**

21 A. I apply the CE methodology by examining realized returns on equity for the groups of
22 proxy utilities, as well as unregulated companies, and evaluating investor acceptance of
23 these returns by reference to the resulting market-to-book ratios (“M/B”). In this manner
24 it is possible to assess the degree to which a given level of return equates to the COC. It
25 is generally recognized for utilities that an M/B of greater than one (i.e. 100 percent)
26 reflects a situation where a company is able to attract new equity capital without dilution
27 (i.e. above book value). As a result, one objective of a fair cost of equity is the
28 maintenance of stock prices at or above book value. There is no regulatory obligation to
29 set rates designed to maintain an M/B significantly above one.

30 I further note that my CE analysis is based upon market data (through the use of
31 M/Bs) and is thus essentially a market test. As a result, my CE analysis is not subject to

the criticisms occasionally made by some who maintain that past earned returns do not represent the cost of capital. In addition, my CE analysis also uses prospective returns and thus is not backward looking.

Q. What time periods do you examine in your CE analysis?

A. My CE analysis considers the experienced ROEs of the proxy groups of utilities for the period 2002-2015 (i.e. the last fourteen years). The CE analysis requires that I examine a relatively long period of time in order to determine trends in earnings over at least a full business cycle. Further, in estimating a fair level of return for a future period, it is important to examine earnings over a diverse period of time in order to avoid any undue influence from unusual or abnormal conditions that may occur in a single year or shorter period. Therefore, in forming my judgment of the current cost of equity, I focused on two periods: 2009-2015 (the current business cycle) and 2002-2008 (the most recent business cycle). I have also considered projected ROEs for 2016 and 2019-2021.

Q. Please describe your CE analysis.

A. Schedule 10 and Schedule 11 contain summaries of experienced ROEs and M/Bs for three groups of companies, while Schedule 12 presents a risk comparison of utilities versus unregulated firms.

Schedule 10 shows the ROEs and M/Bs for the groups of proxy utilities. These can be summarized as follows:

	Parcell Proxy Group	Ahern Proxy Group
Historic ROE		
Mean	10.3-10.8%	9.2-10.3%
Median	10.1-10.8%	9.4-10.3%
Historic M/B		
Mean	149-156%	136-150%
Median	143-155%	136-149%
Prospective ROE		
Mean	9.5-10.2%	9.0-9.8%
Median	9.5-10.0%	9.0-9.8%

1 These results indicate that historic ROE of 9.2 percent to 10.8 percent have been adequate
2 to produce M/Bs of 136 percent to 155 percent for the groups of utilities. Furthermore,
3 projected returns on equity for 2016, 2017 and 2019-2021 are within a range of 9.0
4 percent to 10.2 percent for the utility groups. These relate to 2015 M/B of 150 percent or
5 greater.

6
7 **Q. Do you also review the earnings of unregulated firms?**

8 A. Yes. As an alternative, I also examine the S&P's 500 Composite group. This is a well-
9 recognized group of firms that is widely utilized in the investment community and is
10 indicative of the competitive sector of the economy. Schedule 11 presents the earned
11 ROEs and M/Bs for the S&P 500 group over the past thirteen years (i.e., 2002-2014). As
12 this schedule indicates, over the two business cycle periods, this group's average ROEs
13 ranged from 12.4 percent to 13.6 percent, with average M/Bs ranging between 220
14 percent and 275 percent.

15
16 **Q. How can the above information be used to estimate the Companies' ROEs?**

17 A. The recent ROEs of the proxy utilities and S&P 500 groups can be viewed as an
18 indication of the level of return realized and expected in the regulated and competitive
19 sectors of the economy. In order to apply these returns to the ROE for the proxy utilities,
20 however, it is necessary to compare the risk levels of the utilities and the competitive
21 companies. I do this in Schedule 12, which compares several risk indicators for the S&P
22 500 group and the utility groups. The information in this schedule indicates that the S&P
23 500 group is more risky than the utility proxy groups.

24
25 **Q. What ROE is indicated by your CE analysis?**

26 A. Based on recent ROEs and M/Bs, my CE analysis indicates that the ROE for the proxy
27 utilities is no more than 9.0 percent to 10.0 percent (9.5 percent mid-point). Recent
28 ROEs of 9.2 percent to 10.8 percent have resulted in M/Bs more than 130 percent.
29 Prospective ROEs of 9.0 percent to 10.2 percent have been accompanied by M/Bs over
30 150 percent. As a result, it is apparent that authorized returns below this level would
31 continue to result in M/Bs of well above 100 percent. As I indicated earlier, the fact that

M/Bs substantially exceeds 100 percent indicates that historic and prospective ROEs of 9.5 percent reflect earning levels that are well above the actual cost of equity for those regulated companies. I also note that a company whose stock sells above book value can attract capital in a way that enhances the book value of existing stockholders, thus creating a favorable environment for financial integrity. Finally, I note that my 9.0 percent to 10.0 percent CE recommendation generally reflects the actual and prospective ROEs for the proxy groups. I have made no adjustments to these return levels to reflect the high M/Bs.

XI. RETURN ON EQUITY RECOMMENDATION

Q. Please summarize the results of your three ROE analyses.

A. My three ROE analyses produced the following:

	<u>Mid-Point</u>	<u>Range</u>
DCF	8.5%	8.2-8.8%
CAPM	6.35%	6.2-6.5%
CE	9.5%	9.0-10.0%

These results indicate an overall broad range of 6.2 percent to 10.0 percent, which focuses on the respective individual model results. Using mid-point values, the range is 6.35 percent to 9.5 percent. I recommend a ROE range of 8.8 percent to 9.5 percent for the Companies. This range includes the upper end of my DCF and the mid-point of my CE results.

Q. It appears that your CAPM results are less than your DCF and CE results. Does this imply that the CAPM results should not be considered in determining the cost of equity for the Companies?

A. No. It is apparent that the CAPM results are less than the DCF and CE results. There are two reasons for the lower CAPM results. First, risk premiums are lower currently than was the case in prior years. This is the result of lower equity returns that have been experienced over the past several years. This is also reflective of a decline in investor expectations of equity returns and risk premiums. Second, the level of interest rates on

U.S. Treasury bonds (i.e., the risk free rate) has been lower in recent years. This is partially the result of the actions of the Federal Reserve System to stimulate the economy. This also impacts investor expectations of returns in a negative fashion. I note that, initially, investors may have believed that the decline in Treasury yields was a temporary factor that would soon be replaced by a rise in interest rates. However, this has not been the case as interest rates have remained low and continued to decline for the past six-plus years. As a result, it cannot be maintained that low interest rates (and low CAPM results) are temporary and do not reflect investor expectations. Consequently, the CAPM results should be considered as one factor in determining the cost of equity for the Companies.

XII. TOTAL COST OF CAPITAL

Q. What is the total COC for the Companies’?

A. Schedule 1 reflects the total COC for each of the Companies using each Company’s proposed capital structures and embedded costs of debt, as well as my ROE recommendations. The resulting total costs of capital are as follows:

<u>Company</u>	<u>ROE</u>	<u>COC</u>
Met-Ed	9.15%	7.25%
Penelec	9.15%	7.45%
Penn Power	9.15%	7.52%
West Penn	9.15%	7.02%

XIII. COMMENTS ON COMPANY TESTIMONY

Q. What COCs have the Companies requested in its applications?

A. As noted previously, each of the Companies has requested a distinct COC, reflecting their individual December 31, 2017 capital structures and costs of debt, along with largely distinct ROEs. Each Company’s ROE request is developed in the respective testimonies of Pauline M. Ahern, as follows:

1

	<u>Met-Ed</u>	<u>Penelec</u>	<u>Penn Power</u>	<u>West Penn</u>
Discounted Cash Flow Model	8.80%	8.80%	8.80%	8.80%
Range: 6.33%-12.31%(midpoint: 9.32%)				
Risk Premium Model	10.51%	10.51%	10.51%	10.51%
Range: 10.25%-10.77% (midpoint: 10.51%)				
Capital Asset Pricing Model	9.89%	9.89%	9.89%	9.89%
Range: 8.53%-10.83% (midpoint: 9.68%)				
Cost of Common equity Models Applied to The Non-Price Regulated Proxy Group	<u>11.13%</u>	<u>11.13%</u>	<u>11.13%</u>	<u>11.13%</u>
Range: 10.86%-11.29% (midpoint: 11.07%)				

	<u>Met-Ed</u>	<u>Penelec</u>	<u>Penn Power</u>	<u>West Penn</u>
Indicated Common Equity Cost Rate Before Adjustment	10.15%	10.15%	10.15%	10.15%
Flotation Costs	<u>0.27%</u>	<u>0.27%</u>	<u>0.27%</u>	<u>0.27%</u>
Indicated Common Equity Cost Rate For the Electric Proxy Group Before Company Specific Risk Adjustments	<u>10.42%</u>	<u>10.42%</u>	<u>10.42%</u>	<u>10.42%</u>
Business Risk Adjustment	0.10%	0.10%	0.70%	0.10%
Credit Risk Adjustment	<u>0.40%</u>	<u>0.80%</u>	<u>0.40%</u>	<u>0.40%</u>
Indicated Common Equity Cost Rate After Adjustment	10.92%	11.32%	11.52%	10.92%
Recommended Common Equity Cost Rate	<u>10.90%</u>	<u>11.30%</u>	<u>11.50%</u>	<u>10.90%</u>

2

3

4

5

6

7

8

It is apparent that Ms. Ahern’s respective ROE recommendations utilize common ROE model results for each Company, as well as a common flotation cost adjustment. Based upon these analyses, she concludes that the “Indicated Common equity Cost Rate Before Adjustment” for her proxy group is 10.15 percent. She then makes individual business risk and credit risk adjustments for each of the Companies to arrive at her ultimate conclusions and recommendations.

1 **Q. Before commenting on Ms. Ahern's specific methodologies and recommendations,**
2 **do you have any general comments and responses to her conclusions?**

3 A. Yes, I do. It is apparent that Ms. Ahern's conclusions and recommendations are well
4 beyond the mainstream of authorized ROE's for electric utilities throughout the U.S. in
5 recent years. As I indicated in a previous section of my testimony, average authorized
6 ROEs for electric utilities have been well below 10.15 percent (i.e., Ms. Ahern's average
7 cost rate prior to her various adjustments) since at least 2012.

8
9 **Q. Do you have any disagreements with any or all of Ms. Ahern's methodologies and**
10 **recommendations?**

11 A. Yes. I have disagreements with several of her cost of equity methodologies and
12 conclusions, as well as her proposed "flotation cost adjustment," "credit risk adjustment"
13 and "business risk adjustment" for the Companies.

14
15 **Q. Please begin with her DCF model and conclusions.**

16 A. Ms. Ahern's 8.80 percent DCF conclusion is shown on her Exhibits PMA-1, Schedule 4.
17 This is similar to my DCF results. However, Ms. Ahern maintains that her DCF results
18 "be given only very limited weight in deriving a reasonable return on equity in this
19 proceeding." As noted previously, this Commission has historically used the DCF as its
20 primary determinant in developing the ROE. As a result, Ms. Ahern's proposal to give
21 only limited weight to DCF results is contrary to the Commission's practice.

22
23 **Q. Please describe Ms. Ahern's risk premium approach and conclusions.**

24 A. Ms. Ahern performs two types of risk premium analyses. First, she employs a Predictive
25 Risk Premium ModelTM ("PRPMTM") which produces a 10.77 percent ROE. Second, she
26 develops her Adjusted Total Market Approach risk premium methodology to arrive a risk
27 premium ROE of 10.25 percent. Her risk premium method conclusions and
28 recommendations is 10.51 percent (Exhibits PMA-1, Schedule 5), which gives equal
29 weighting to the PRPMTM approach and the Adjusted Total Market Approach.

30
31 **Q. What is Ms. Ahern's first risk premium methodology?**

1 A. Ms. Ahern first performs a relatively new type of risk premium approach, which is her
2 PRPMTM approach. This approach is relatively new and untried. Significantly, the result
3 of this methodology is a 10.77 percent ROE conclusion, which exceeds (i.e., over 50
4 basis points) the results of her Adjusted Total Market Approach risk premium approach.
5 I again note that, not only does her PRPMTM approach produce a much higher cost of
6 equity result; the approach is also a component in her Adjusted Total Market Approach
7 methodologies and has the effect of raising the results of this methodology as well.

8
9 **Q. You state that the PRPMTM approach is new and untried. Are you aware of any**
10 **regulatory agency that has endorsed or accepted this methodology?**

11 A. No, I am not. I also observe that Ms. Ahern, who is one of the developers and principal
12 proponents of this methodology, cannot identify any U.S. regulatory commission that has
13 accepted it.

14
15 **Q. Do you agree with her adjusted total market approach methodology and**
16 **conclusions?**

17 A. No, I do no. Ms. Ahern's Adjusted Total Market Return approach incorporates a risk
18 premium of 4.74 percent, derived as follows:

19

Calculated equity risk premium based	
On total market using beta approach:	
Ibbotson Equity Risk Premium	5.61%
Ibbotson Equity Risk Premium based on PRPM	7.38%
Equity Risk Premium Based on Value Line	8.05%
Equity Risk Premium Based on S&P 500 Cos	<u>8.68%</u>
Average	7.43%
Adjusted Beta	0.69
Forecasted Risk Premium	5.13%
Arithmetic mean Holding Period Returns on S&P 500	10.49%
Arithmetic mean Yield on A rated utility bonds	<u>-6.64%</u>
Historic Equity Risk Premium	3.85%
Forecasted Equity risk Premium based on PRPM	3.90%
Forecasted Equity Risk Premium based on projected	
Total return on S&P Utilities Index	<u>3.98%</u>
Average of Historical and PRPM Equity Risk Premia	3.91%

Regression Analysis of Fully-Litigated Electric
Utility Rate Cases

5.19%

Average Equity Risk Premium

4.74%

Of the eight risk premia shown above, two are based on the PRPM Approach, which I have shown above to be improper. In addition, the 8.68 percent risk premium based on the S&P 500 companies is clearly an outlier, and is based upon an assumed total return of 13.46 percent for this index (well above its historical returns of 12 percent or less). The remaining four risk premium measures form a range of 3.85 percent to 8.05 percent (5.14 percent average) which is similar to my risk premium indicators in my CAPM analyses.

Furthermore, there are several problems with her methodologies. Her use of total stock returns over the 1926-2015 period, in connection with bond yields over the same long period, seems to imply that investors in 2016 expect such relationships to be the same. There is no demonstration that current investors expect such relationships to exist at the current time. Her methodology is also a mismatch since it compares holding period returns (i.e., capital gains/losses plus income) with yields on bonds (i.e., only income return). In addition, the 1926-2014 period was heavily influenced by the Great Depression, World War II, the high inflation/interest rate environment of the 1970s/1980s, etc. Such factors are not prevalent currently and have the effect of inflating risk premiums over those expected by investors. I believe Ms. Ahern's analyses overstate the required risk premiums at the present time. In addition, I find it inconsistent on her part to defend use of historic data going back to 1926 in her risk premium and CAPM analyses, and to then ignore historic data in her DCF analyses. I do not see how an investor would place equal weight between returns in 1926 and 2015 in one type of analysis (i.e., risk premium and CAPM) and then give no weight whatsoever to recent (i.e., 5 years) experience in DCF analysis. I also disagree with Ms. Ahern's use of projected equity returns, which are largely dependent on assumed stock market values. This is speculative.

Q. You indicate that Ms. Ahern's risk premium and CAPM analyses use forecasted yields on U.S. Treasury and Utility Bonds. Why do you disagree with this?

1 A. It is proper to use the current yield, rather than a projected yield, as the risk-free rate in a
2 risk premium and CAPM context. This is the case since the current yield is known and
3 measurable and reflects investors' collective assessment of all relevant capital market
4 conditions. Prospective interest rates, in contrast, are not measurable and not achievable.
5 For example, if the current yield on 20-year U.S. Treasury Bonds is 2.3 percent, this
6 reflects the rate that investors can actually receive on their investment. Investors cannot
7 receive a prospective yield on their investments since such a yield is not actual but rather
8 speculative.

9 Use of the current yield in a DCF context is similar to using the current risk-free
10 rate in a CAPM context. Analysts do not use prospective stock prices as the basis for the
11 dividend yield in a DCF analysis, as use of prospective stock prices is speculative. Use
12 of current stock prices is appropriate as this is consistent with the efficient market
13 hypothesis that Ms. Ahern cites in her testimony. Likewise, current levels of interest
14 rates reflect all current information (i.e., the efficient market hypothesis) and should be
15 used as the risk-free rate in the CAPM.

16
17 **Q. Please describe Ms. Ahern's CAPM analyses.**

18 A. Ms. Ahern performs two sets of CAPM analyses. Her first CAPM is a "traditional"
19 CAPM, where she concludes that 9.49-9.62 percent is the CAPM cost. This uses a risk
20 free rate of 3.68 percent (projected yield on 30-year U.S. Treasury bonds), Value Line
21 betas and a risk premium of 8.49 percent. I note that current 30-year Treasury bonds
22 currently yield well below 3.68 percent, which indicates that her prospective yield is
23 excessive.

24 I also disagree with the 8.49 percent market risk premium Ms. Ahern employs in
25 her CAPM analyses. This market risk premium is developed in a similar fashion to those
26 in her risk premium analyses. For the same reasons cited above, Ms. Ahern's risk
27 premium values are over-stated.

28 Ms. Ahern also performs an "empirical" CAPM analysis, wherein she assigns 75
29 percent weight to actual betas for the proxy group of electric utilities and a 25 percent
30 weight to an assumed beta of 1.0 (i.e., the market beta). I disagree with this empirical

1 CAPM, since it arbitrarily ignores the actual betas of the proxy utilities and, instead,
2 assigns hypothetical betas to them.

3
4 **Q. What is your response to Ms. Ahern's use of a "Non-Price Regulated Proxy Group"**
5 **in her ROE analyses?**

6 A. I disagree with her use of unregulated firms as a proxy group for the Companies. It is not
7 proper to use non-regulated firms in the manner Ms. Ahern proposes. This is the case
8 since unregulated enterprises face different risk and operational characteristics than do
9 utilities.

10
11 **Q. Ms. Ahern applies a 0.27 percent flotation cost adjustment to her ROE model**
12 **results. Is this proper?**

13 A. No, it is not. There has been no demonstration that FirstEnergy has or intends to issue
14 new common equity for the purpose of infusing equity into the Companies.

15 In addition, should FirstEnergy issue new shares of common stock, the existence
16 of its stock well above book value indicates that existing shareholders will have their
17 book value enhanced. Thus, there is no need for any further return associated with
18 flotation costs, to the extent they exist.

19
20 **Q. Do you agree with the proposition that the Companies' should be entitled to a size**
21 **or business risk adjustment?**

22 A. No, I do not. The Companies' ratepayers should not be charged electric rates which
23 reflect an incremental return to reflect the size of the Company. Such an increment is not
24 justified and not appropriate.

25
26 **Q. Is it proper to compare the size of the Companies' to the electric proxy companies**
27 **and make risk comparisons based upon the size differentials between them?**

28 A. No, it is not proper. Many of the proxy electric utilities have multiple subsidiaries that
29 operate in different jurisdictions. Following Ms. Ahern's reasoning, each of the
30 subsidiaries of the proxy electric utilities should be considered as more risky than the
31 proxy group since, by definition, they would have to be smaller. This reasoning is

1 flawed, since these individual electric company subsidiaries do not raise their equity
2 capital directly from investors, but rather do so as a consolidated entity. In addition, as I
3 noted previously, FirstEnergy operates one of the largest investor-owned electric systems
4 in the U.S.

5
6 **Q. Are there other reasons why a size adjustment is improper?**

7 A. Yes. There are other compelling reasons why a small size adjustment is not proper for
8 regulated utilities. Ms. Ahern's proposed size adjustment is based upon her reference to
9 the Morningstar/Ibbotson studies. However, the small size adjustment in the
10 Morningstar/Ibbotson studies is based on the analysis of all stocks, the majority of which
11 are unregulated and include industries that are much more risky than utilities. While it
12 may or may not be true that on an overall market basis, smaller publicly-traded firms
13 exhibit more risk than larger firms, these smaller companies stocks tend to be engaged in
14 riskier businesses as a whole than do larger businesses. Such is not the case for regulated
15 utilities.

16 Indeed, an academic study conducted by Professor Annie Wong found that:

17 **"utility and industrial stocks do not share the same**
18 **characteristics.** First, given firm size, utility stocks are
19 consistently less risky than industrial stocks. Second, industrial
20 bets tend to decrease with firm size but utility betas do not. These
21 findings may be attributed to the fact that all public utilities operate
22 in an environment with regional monopolistic power than regulated
23 financial structure. As a result, the business and financial risks are
24 very similar among the utilities regardless of their sizes.
25 Therefore, utility betas would not necessarily be expected to be
26 related to firm size.

27 . . .

28 This implies that although the price phenomenon has been strongly
29 documented for the industrials, the **findings suggest that there is**
30 **no need to adjust for the firm size in utility rate regulation.**¹⁷

31 [Emphasis Added.]
32

33 **Q. Can you provide any evidence that "size" or "business risk" adjustments are not**
34 **generally recognized as risk factors in regulatory proceedings such as this one?**

¹⁷ Wong, Annie, "Utility Stocks And The Size Effect: An Empirical Analysis," Journal of the Midwest Finance Association, 1993, pp. 95-101.

A. Yes, I can. The following table reflects the average size (as measured by net plant) and currently authorized returns on equity or various types of regulated utilities:

Industry	Average Net Plant (000)	Average Authorized ROE ¹⁸
Electric	\$18,285	10.42%
Combination		
Electric-Gas	\$17,856	10.30%
Natural Gas	\$3,519	10.28%
Water	\$2,604	9.65%

Source: AUS Utility Reports, January 2016.

As shown here the smallest utilities (i.e., water utilities) have the lowest authorized ROEs.

Q. Can you provide any direct comparisons of electric utilities that demonstrates that smaller utilities are not more risky than larger ones?

A. Yes. Implicit in Ms. Ahern's proposal is an assumption that any perceived small size risk adjustment for unregulated companies (i.e., source of information cited in Morningstar/Ibbotson source Ms. Ahern relies on for small size adjustment) applies to regulated public utilities. Schedule 13 demonstrates objectively that this is not the case. As this exhibit shows, there is no significant difference, and even more to the point that there is no discernible pattern of increase, among the risk indicators of publicly-traded electric utilities of different sizes. The table below summarizes the information contained in this schedule:

Cap Size	Safety	Beta	Financial Strength	S&P Rank	S&P Rating	Moody's Rating
Under \$2 B	2.0	.74	B++	B+	A-/BBB+	A3
\$2 - \$5 B	2.3	.78	B++	A-/B+	BBB+	A3/Baa1
\$5-\$10 B	1.8	.78	A/B++	A-/B+	BBB+	A3
\$10-\$20 B	2.1	.72	B++	A-/B+	BBB+	A3/Baa1
\$20 B Plus	2.0	.68	A	B+	A-/BBB+	A3

¹⁸ Note that "Authorized" ROEs do not necessarily indicate "recently authorized" ROEs, since some ROEs were established in prior periods. Moreover, AUS reports each utility's most recent explicitly-authorized ROE even where that result is aged and has been superseded by a more recent "black box" rate settlement.

1 The safety rank, beta values, financial strength and S&P stock ranking are about the same
2 for all sizes of electric utilities. These risk indicators do not reflect any risk differential
3 as the size of the electric utilities decrease from large to small. To the contrary, this data
4 indicates that regulated monopoly utility providers have approximately the same risk
5 regardless of size. As a result, the logic Ms. Ahern uses to justify his proposed small size
6 adjustment is not justified.

7
8 **Q. Ms. Ahern also proposes “credit” adjustments for each of the Companies. Do you**
9 **agree with this type of adjustment?**

10 A. No, I do not. As I indicated in a previous section of my testimony, the ratings of the
11 Companies are negatively influenced by the ratings of FirstEnergy. It is noteworthy that
12 FirstEnergy has an inferior Business Risk profile than the Companies, (as a result of its
13 high-risk unregulated operation) and also has greater financial risk as a result of its
14 consolidated equity ratio being much lower than the Companies.

15 As a result, Mr. Ahern’s proposed credit adjustments are penalizing the
16 Companies’ ratepayers for the higher risk operations and capitalization of FirstEnergy.
17 As I noted previously, the Companies’ credit ratings are, in part, influenced by the higher
18 risks of FirstEnergy.

19
20 **Q. Does this conclude your direct testimony?**

21 A. Yes, it does.

**BEFORE THE PENNSYLVANIA PUBLIC
UTILITY COMMISSION**

Pennsylvania Public Utility Commission, *et. al.* : R-2016-2537349, *et al.*
:
v. :
:
Metropolitan Edison Company :

Pennsylvania Public Utility Commission, *et. al.* : R-2016-2537352, *et al.*
:
v. :
:
Pennsylvania Electric Company :

Pennsylvania Public Utility Commission, *et. at.* : R-2016-2537355, *et. al.*
:
v. :
:
Pennsylvania Power Company :

Pennsylvania Public Utility Commission, *et. al.* : R-2016-2537359, *et al.*
:
v. :
:
West Penn Power Company :

**ATTACHMENT ACCOMPANYING THE
DIRECT TESTIMONY
OF
DAVID C. PARCELL
ON BEHALF OF
OFFICE OF CONSUMER ADVOCATE
JULY 22, 2016**

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

2007-Present	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

Financial Economics -- 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.

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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 500 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 and Virginia; 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

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"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.

**BEFORE THE PENNSYLVANIA PUBLIC
UTILITY COMMISSION**

Pennsylvania Public Utility Commission, <i>et. al.</i>	:	R-2016-2537349, <i>et al.</i>
	:	
v.	:	
	:	
Metropolitan Edison Company	:	

Pennsylvania Public Utility Commission, <i>et. al.</i>	:	R-2016-2537352, <i>et al.</i>
	:	
v.	:	
	:	
Pennsylvania Electric Company	:	

Pennsylvania Public Utility Commission, <i>et. at.</i>	:	R-2016-2537355, <i>et. al.</i>
	:	
v.	:	
	:	
Pennsylvania Power Company	:	

Pennsylvania Public Utility Commission, <i>et. al.</i>	:	R-2016-2537359, <i>et al.</i>
	:	
v.	:	
	:	
West Penn Power Company	:	

**EXHIBIT ACCOMPANYING THE
DIRECT TESTIMONY
OF
DAVID C. PARCELL
ON BEHALF OF
OFFICE OF CONSUMER ADVOCATE
JULY 22, 2016**

METROPOLITAN EDISON COMPANY
TOTAL COST OF CAPITAL
AS OF DECEMBER 31, 2017
(\$000)

Item	Amount 1/	Percent	Cost			Weighted Cost		
Long-term Debt	\$849,316	48.83%	5.2496% 1/			2.56%		
Common Equity	\$889,984	51.17%	8.80%	9.15%	9.50%	4.50%	4.68%	4.86%
Total	\$1,739,300	100.00%				7.07%	7.42%	7.25%

1/ Estimated Test Year December 31, 2017 amounts and percents as contained in Met-Ed Exhibit JD-24.

PENNSYLVANIA ELECTRIC COMPANY
TOTAL COST OF CAPITAL
AS OF DECEMBER 31, 2017
(\$000)

Item	Amount 1/	Percent	Cost			Weighted Cost		
Long-term Debt	\$1,123,939	47.44%	5.5582% 1/			2.64%		
Common Equity	\$1,245,464	52.56%	8.80%	9.15%	9.50%	4.63%	4.81%	4.99%
Total	\$2,369,403	100.00%				7.26%	7.63%	
						7.45%		

1/ Estimated Test Year December 31, 2017 amounts and percents as contained in Penelec Exhibit JD-24.

PENNSYLVANIA POWER COMPANY
TOTAL COST OF CAPITAL
AS OF DECEMBER 31, 2017
(\$000)

Item	Amount 1/	Percent	Cost			Weighted Cost		
Long-term Debt	\$151,981	49.93%	5.8846% 1/			2.94%		
Common Equity	\$152,390	50.07%	8.80%	9.15%	9.50%	4.41%	4.58%	4.76%
Total	\$304,371	100.00%				7.34%	7.69%	7.52%

1/ Estimated Test Year December 31, 2017 amounts and percents as contained in Penn Power Exhibit JD-24.

WEST PENN POWER COMPANY
TOTAL COST OF CAPITAL
AS OF DECEMBER 31, 2017
(\$000)

Item	Amount 1/	Percent	Cost			Weighted Cost		
Long-term Debt	\$725,000	49.68%	4.8683% 1/			2.42%		
Common Equity	\$734,329	50.32%	8.80%	9.15%	9.50%	4.43%	4.60%	4.78%
Total	\$1,459,329	100.00%				6.85%	7.20%	

1/ Estimated Test Year December 31, 2017 amounts and percents as contained in West Penn Exhibit JD-24.

ECONOMIC INDICATORS

Year	Real GDP* Growth	Industrial Production Growth	Unemploy- ment Rate	Consumer Price Index
1975 - 1982 Cycle				
1975	-1.1%	-8.9%	8.5%	7.0%
1976	5.4%	10.8%	7.7%	4.8%
1977	5.5%	5.9%	7.0%	6.8%
1978	5.0%	5.7%	6.0%	9.0%
1979	2.8%	4.4%	5.8%	13.3%
1980	-0.2%	-1.9%	7.0%	12.4%
1981	1.8%	1.9%	7.5%	8.9%
1982	-2.1%	-4.4%	9.5%	3.8%
1983 - 1991 Cycle				
1983	4.0%	3.7%	9.5%	3.8%
1984	6.8%	9.3%	7.5%	3.9%
1985	3.7%	1.7%	7.2%	3.8%
1986	3.1%	0.9%	7.0%	1.1%
1987	2.9%	4.9%	6.2%	4.4%
1988	3.8%	4.5%	5.5%	4.4%
1989	3.5%	1.8%	5.3%	4.6%
1990	1.8%	-0.2%	5.6%	6.1%
1991	-0.5%	-2.0%	6.8%	3.1%
1992 - 2001 Cycle				
1992	3.0%	3.1%	7.5%	2.9%
1993	2.7%	3.4%	6.9%	2.7%
1994	4.0%	5.5%	6.1%	2.7%
1995	3.7%	4.8%	5.6%	2.5%
1996	4.5%	4.3%	5.4%	3.3%
1997	4.5%	7.3%	4.9%	1.7%
1998	4.2%	5.8%	4.5%	1.6%
1999	3.7%	4.5%	4.2%	2.7%
2000	4.1%	4.0%	4.0%	3.4%
2001	1.1%	-3.4%	4.7%	1.6%
2002 - 2009 Cycle				
2002	1.8%	0.2%	5.8%	2.4%
2003	2.8%	1.2%	6.0%	1.9%
2004	3.8%	2.3%	5.5%	3.3%
2005	3.3%	3.2%	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%	-3.4%	5.8%	0.1%
2009	-2.8%	-11.3%	9.3%	2.7%
Current Cycle				
2010	2.5%	5.6%	9.6%	1.5%
2011	1.6%	3.0%	8.9%	3.0%
2012	2.2%	2.8%	8.1%	1.7%
2013	1.5%	1.9%	7.4%	1.5%
2014	2.4%	2.9%	6.2%	0.8%
2015	2.4%	0.3%	5.3%	0.7%

*GDP=Gross Domestic Product

Source: Council of Economic Advisors, Economic Indicators, various issues.

ECONOMIC INDICATORS

Year	Real GDP* Growth	Industrial Production Growth	Unemploy- ment Rate	Consumer Price Index
2002				
1st Qtr.	2.7%	-3.8%	5.6%	2.8%
2nd Qtr.	2.2%	-1.2%	5.9%	0.9%
3rd Qtr.	2.4%	0.8%	5.8%	2.4%
4th Qtr.	0.2%	1.4%	5.9%	1.6%
2003				
1st Qtr.	1.2%	1.1%	5.8%	4.8%
2nd Qtr.	3.5%	-0.9%	6.2%	0.0%
3rd Qtr.	7.5%	-0.9%	6.1%	3.2%
4th Qtr.	2.7%	1.5%	5.9%	-0.3%
2004				
1st Qtr.	3.0%	2.8%	5.6%	5.2%
2nd Qtr.	3.5%	4.9%	5.6%	4.4%
3rd Qtr.	3.6%	4.6%	5.4%	0.8%
4th Qtr.	2.5%	4.3%	5.4%	3.6%
2005				
1st Qtr.	4.1%	3.8%	5.3%	4.4%
2nd Qtr.	1.7%	3.0%	5.1%	1.6%
3rd Qtr.	3.1%	2.7%	5.0%	8.8%
4th Qtr.	2.1%	2.9%	4.9%	-2.0%
2006				
1st Qtr.	5.4%	3.4%	4.7%	4.8%
2nd Qtr.	1.4%	4.5%	4.6%	4.8%
3rd Qtr.	0.1%	5.2%	4.7%	0.4%
4th Qtr.	3.0%	3.5%	4.5%	0.0%
2007				
1st Qtr.	0.9%	2.5%	4.5%	4.8%
2nd Qtr.	3.2%	1.6%	4.5%	5.2%
3rd Qtr.	2.3%	1.8%	4.6%	1.2%
4th Qtr.	2.9%	1.7%	4.8%	6.4%
2008				
1st Qtr.	-1.8%	1.9%	4.9%	2.8%
2nd Qtr.	1.3%	0.2%	5.3%	7.6%
3rd Qtr.	-3.7%	-3.0%	6.0%	2.8%
4th Qtr.	-8.9%	6.0%	6.9%	-13.2%
2009				
1st Qtr.	-5.3%	-11.6%	8.1%	2.4%
2nd Qtr.	-0.3%	-12.9%	9.3%	3.2%
3rd Qtr.	1.4%	-9.3%	9.6%	2.0%
4th Qtr.	4.0%	-4.5%	10.0%	2.5%
2010				
1st Qtr.	1.6%	2.7%	9.7%	0.9%
2nd Qtr.	3.9%	6.5%	9.7%	-1.2%
3rd Qtr.	2.8%	6.9%	9.6%	2.8%
4th Qtr.	2.8%	6.2%	9.6%	2.8%
2011				
1st Qtr.	-1.5%	5.4%	9.0%	4.8%
2nd Qtr.	2.9%	3.6%	9.0%	3.2%
3rd Qtr.	0.8%	3.3%	9.1%	2.4%
4th Qtr.	4.6%	4.0%	8.7%	0.4%
2012				
1st Qtr.	2.3%	4.5%	8.3%	3.2%
2nd Qtr.	1.6%	4.7%	8.2%	0.0%
3rd Qtr.	2.5%	3.4%	8.1%	4.0%
4th Qtr.	0.1%	2.8%	7.8%	0.0%
2013				
1st Qtr.	1.9%	2.5%	7.7%	2.0%
2nd Qtr.	1.1%	2.0%	7.6%	1.2%
3rd Qtr.	3.0%	2.6%	7.3%	1.6%
4th Qtr.	3.9%	3.3%	7.0%	1.2%
2014				
1st Qtr.	-0.9%	3.2%	6.6%	1.6%
2nd Qtr.	4.6%	4.2%	6.2%	3.6%
3rd Qtr.	4.3%	4.7%	6.1%	0.0%
4th Qtr.	2.1%	4.5%	5.7%	-2.8%
2015				
1st Qtr.	0.6%	3.5%	5.6%	-1.2%
2nd Qtr.	3.9%	0.4%	5.4%	3.2%
3rd Qtr.	2.0%	0.1%	5.2%	-0.1%
4th Qtr.	1.4%	-1.6%	5.0%	0.0%
2016				
1st Qtr.	1.1%	-1.7%	4.9%	-0.4%
2nd Qtr.			4.9%	2.8%

*GDP=Gross Domestic Product

Source: Council of Economic Advisors, Economic Indicators, various issue

INTEREST RATES

Year	Prime Rate	US Treasury T Bills 3 Month	US Treasury T Bonds 10 Year	Utility Bonds Aaa	Utility Bonds Aa	Utility Bonds A	Utility Bonds Baa
1975 - 1982 Cycle							
1975	7.86%	5.84%	7.99%	9.03%	9.44%	10.09%	10.96%
1976	6.84%	4.99%	7.61%	8.63%	8.92%	9.29%	9.82%
1977	6.83%	5.27%	7.42%	8.19%	8.43%	8.61%	9.06%
1978	9.06%	7.22%	8.41%	8.87%	9.10%	9.29%	9.62%
1979	12.67%	10.04%	9.44%	9.86%	10.22%	10.49%	10.96%
1980	15.27%	11.51%	11.46%	12.30%	13.00%	13.34%	13.95%
1981	18.89%	14.03%	13.93%	14.64%	15.30%	15.95%	16.60%
1982	14.86%	10.69%	13.00%	14.22%	14.79%	15.86%	16.45%
1983 - 1991 Cycle							
1983	10.79%	8.63%	11.10%	12.52%	12.83%	13.66%	14.20%
1984	12.04%	9.58%	12.44%	12.72%	13.66%	14.03%	14.53%
1985	9.93%	7.48%	10.62%	11.68%	12.06%	12.47%	12.96%
1986	8.33%	5.98%	7.68%	8.92%	9.30%	9.58%	10.00%
1987	8.21%	5.82%	8.39%	9.52%	9.77%	10.10%	10.53%
1988	9.32%	6.69%	8.85%	10.05%	10.26%	10.49%	11.00%
1989	10.87%	8.12%	8.49%	9.32%	9.56%	9.77%	9.97%
1990	10.01%	7.51%	8.55%	9.45%	9.65%	9.86%	10.06%
1991	8.46%	5.42%	7.86%	8.85%	9.09%	9.36%	9.55%
1992 - 2001 Cycle							
1992	6.25%	3.45%	7.01%	8.19%	8.55%	8.69%	8.86%
1993	6.00%	3.02%	5.87%	7.29%	7.44%	7.59%	7.91%
1994	7.15%	4.29%	7.09%	8.07%	8.21%	8.31%	8.63%
1995	8.83%	5.51%	6.57%	7.68%	7.77%	7.89%	8.29%
1996	8.27%	5.02%	6.44%	7.48%	7.57%	7.75%	8.16%
1997	8.44%	5.07%	6.35%	7.43%	7.54%	7.60%	7.95%
1998	8.35%	4.81%	5.26%	6.77%	6.91%	7.04%	7.26%
1999	8.00%	4.66%	5.65%	7.21%	7.51%	7.62%	7.88%
2000	9.23%	5.85%	6.03%	7.88%	8.06%	8.24%	8.36%
2001	6.91%	3.44%	5.02%	7.47%	7.59%	7.78%	8.02%
2002 - 2009 Cycle							
2002	4.67%	1.62%	4.61%	[1]	7.19%	7.37%	8.02%
2003	4.12%	1.01%	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%

[1] Note: Moody's has not published Aaa utility bond yields since 2001.

Sources: Council of Economic Advisors, Economic Indicators; Moody's Bond Record; Federal Reserve Bulletin; various issues.

INTEREST RATES

	Prime Rate	US Treasury T Bills 3 Month	US Treasury T Bonds 10 Year	Utility Bonds Aa	Utility Bonds A	Utility Bonds Baa
2010						
Jan	3.25%	0.06%	3.73%	5.55%	5.77%	6.16%
Feb	3.25%	0.10%	3.69%	5.69%	5.87%	6.25%
Mar	3.25%	0.15%	3.73%	5.64%	5.84%	6.22%
Apr	3.25%	0.15%	3.85%	5.62%	5.81%	6.19%
May	3.25%	0.16%	3.42%	5.29%	5.50%	5.97%
June	3.25%	0.12%	3.20%	5.22%	5.46%	6.18%
July	3.25%	0.16%	3.01%	4.99%	5.26%	5.98%
Aug	3.25%	0.15%	2.70%	4.75%	5.01%	5.55%
Sept	3.25%	0.15%	2.65%	4.74%	5.01%	5.53%
Oct	3.25%	0.13%	2.54%	4.89%	5.10%	5.62%
Nov	3.25%	0.13%	2.76%	5.12%	5.37%	5.85%
Dec	3.25%	0.15%	3.29%	5.32%	5.56%	6.04%
2011						
Jan	3.25%	0.15%	3.39%	5.29%	5.57%	6.06%
Feb	3.25%	0.14%	3.58%	5.42%	5.68%	6.10%
Mar	3.25%	0.11%	3.41%	5.33%	5.56%	5.97%
Apr	3.25%	0.06%	3.46%	5.32%	5.55%	5.98%
May	3.25%	0.04%	3.17%	5.08%	5.32%	5.74%
June	3.25%	0.04%	3.00%	5.04%	5.26%	5.67%
July	3.25%	0.03%	3.00%	5.05%	5.27%	5.70%
Aug	3.25%	0.05%	2.30%	4.44%	4.69%	5.22%
Sept	3.25%	0.02%	1.98%	4.24%	4.48%	5.11%
Oct	3.25%	0.02%	2.15%	4.21%	4.52%	5.24%
Nov	3.25%	0.01%	2.01%	3.92%	4.25%	4.93%
Dec	3.25%	0.02%	1.98%	4.00%	4.33%	5.07%
2012						
Jan	3.25%	0.02%	1.97%	4.03%	4.34%	5.06%
Feb	3.25%	0.08%	1.97%	4.02%	4.36%	5.02%
Mar	3.25%	0.09%	2.17%	4.16%	4.48%	5.13%
Apr	3.25%	0.08%	2.05%	4.10%	4.40%	5.11%
May	3.25%	0.09%	1.80%	3.92%	4.20%	4.97%
June	3.25%	0.09%	1.62%	3.79%	4.08%	4.91%
July	3.25%	0.10%	1.53%	3.58%	3.93%	4.85%
Aug	3.25%	0.11%	1.68%	3.65%	4.00%	4.88%
Sept	3.25%	0.10%	1.72%	3.69%	4.02%	4.81%
Oct	3.25%	0.10%	1.75%	3.68%	3.91%	4.54%
Nov	3.25%	0.11%	1.65%	3.60%	3.84%	4.42%
Dec	3.25%	0.08%	1.72%	3.75%	4.00%	4.56%
2013						
Jan	3.25%	0.07%	1.91%	3.90%	4.15%	4.66%
Feb	3.25%	0.10%	1.98%	3.95%	4.18%	4.74%
Mar	3.25%	0.09%	1.96%	3.90%	4.15%	4.66%
Apr	3.25%	0.06%	1.76%	3.74%	4.00%	4.49%
May	3.25%	0.05%	1.93%	3.91%	4.17%	4.65%
June	3.25%	0.05%	2.30%	4.27%	4.53%	5.08%
July	3.25%	0.04%	2.58%	4.44%	4.68%	5.21%
Aug	3.25%	0.04%	2.74%	4.53%	4.73%	5.28%
Sept	3.25%	0.02%	2.81%	4.58%	4.80%	5.31%
Oct	3.25%	0.06%	2.62%	4.48%	4.70%	5.17%
Nov	3.25%	0.07%	2.72%	4.56%	4.77%	5.24%
Dec	3.25%	0.07%	2.90%	4.59%	4.81%	5.25%
2014						
Jan	3.25%	0.05%	2.86%	4.44%	4.63%	5.09%
Feb	3.25%	0.06%	2.71%	4.38%	4.53%	5.01%
Mar	3.25%	0.05%	2.72%	4.40%	4.51%	5.00%
Apr	3.25%	0.04%	2.71%	4.30%	4.41%	4.85%
May	3.25%	0.03%	2.56%	4.16%	4.26%	4.69%
June	3.25%	0.03%	2.60%	4.23%	4.29%	4.73%
July	3.25%	0.03%	2.54%	4.16%	4.23%	4.66%
Aug	3.25%	0.03%	2.42%	4.07%	4.13%	4.65%
Sept	3.25%	0.02%	2.53%	4.18%	4.24%	4.79%
Oct	3.25%	0.02%	2.30%	3.96%	4.06%	4.67%
Nov	3.25%	0.02%	2.33%	4.03%	4.09%	4.75%
Dec	3.25%	0.04%	2.21%	3.90%	3.95%	4.70%
2015						
Jan	3.25%	0.03%	1.88%	3.52%	3.58%	4.39%
Feb	3.25%	0.03%	1.98%	3.62%	3.67%	4.44%
Mar	3.25%	0.03%	2.04%	3.67%	3.74%	4.51%
Apr	3.25%	0.02%	1.94%	3.63%	3.75%	4.51%
May	3.25%	0.02%	2.20%	4.05%	4.17%	4.91%
June	3.25%	0.04%	2.36%	4.29%	4.39%	5.13%
July	3.25%	0.03%	2.32%	4.27%	4.40%	5.22%
Aug	3.25%	0.09%	2.17%	4.13%	4.25%	5.23%
Sep	3.25%	0.06%	2.17%	4.25%	4.39%	5.42%
Oct	3.25%	0.01%	2.07%	4.13%	4.29%	5.47%
Nov	3.25%	0.13%	2.26%	4.22%	4.40%	5.57%
Dec	3.50%	0.26%	2.24%	4.18%	4.35%	5.55%
2016						
Jan	3.50%	0.25%	2.09%	4.09%	4.27%	5.49%
Feb	3.50%	0.32%	1.78%	3.94%	4.11%	5.28%
Mar	3.50%	0.32%	1.89%	3.93%	4.16%	5.12%
Apr	3.50%	0.23%	1.81%	3.74%	4.00%	4.75%
May	3.50%	0.27%	1.81%	3.65%	3.93%	4.60%
June	3.50%	0.29%	1.64%			

Sources: Council of Economic Advisors, Economic Indicators; Moody's Bond Record; Federal Reserve Bulletin; various issues.

STOCK PRICE INDICATORS

	S&P Composite [1]	NASDAQ Composite [1]	DJIA	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%	12.66%
1981			932.92	5.20%	11.96%
1982			884.36	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	[1]	[1]	2,060.82	3.64%	8.01%
1989	322.84		2,508.91	3.45%	7.41%
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	451.21	715.16	3,522.06	2.78%	4.46%
1994	460.42	751.65	3,793.77	2.82%	5.83%
1995	541.72	925.19	4,493.76	2.56%	6.09%
1996	670.50	1,164.96	5,742.89	2.19%	5.24%
1997	873.43	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 Cycle					
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	1,477.19	2,578.47	13,169.98	1.86%	5.29%
2008	1,220.04	2,161.65	11,252.62	2.37%	3.54%
2009	948.05	1,845.38	8,876.15	2.40%	1.86%
Current Cycle					
2010	1,139.97	2,349.89	10,662.80	1.98%	6.04%
2011	1,268.89	2,677.44	11,966.36	2.05%	6.77%
2012	1,379.35	2,965.56	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	17,590.81	2.10%	4.59%

[1] Note: this source did not publish the S&P Composite prior to 1988 and the NASDAQ Composite prior to 1991.

Source: Council of Economic Advisors, Economic Indicators, various issues.

STOCK PRICE INDICATORS

	S&P Composite	NASDAQ Composite	DJIA	S&P D/P	S&P E/P
2004					
1st Qtr.	1,133.29	2,041.95	10,488.43	1.64%	4.62%
2nd Qtr.	1,122.87	1,984.13	10,289.04	1.71%	4.92%
3rd Qtr.	1,104.15	1,872.90	10,129.85	1.79%	5.18%
4th Qtr.	1,162.07	2,050.22	10,362.25	1.75%	4.83%
2005					
1st Qtr.	1,191.98	2,056.01	10,648.48	1.77%	5.11%
2nd Qtr.	1,181.65	2,012.24	10,382.35	1.85%	5.32%
3rd Qtr.	1,225.91	2,144.61	10,532.24	1.83%	5.42%
4th Qtr.	1,262.07	2,246.09	10,827.79	1.86%	5.60%
2006					
1st Qtr.	1,283.04	2,287.97	10,996.04	1.85%	5.61%
2nd Qtr.	1,281.77	2,240.46	11,188.84	1.90%	5.86%
3rd Qtr.	1,288.40	2,141.97	11,274.49	1.91%	5.88%
4th Qtr.	1,389.48	2,390.26	12,175.30	1.81%	5.75%
2007					
1st Qtr.	1,425.30	2,444.85	12,470.97	1.84%	5.85%
2nd Qtr.	1,496.43	2,552.37	13,214.26	1.82%	5.65%
3rd Qtr.	1,490.81	2,609.68	13,488.43	1.86%	5.15%
4th Qtr.	1,494.09	2,701.59	13,502.95	1.91%	4.51%
2008					
1st Qtr.	1,350.19	2,332.91	12,383.86	2.11%	4.55%
2nd Qtr.	1,371.65	2,426.26	12,508.59	2.10%	4.05%
3rd Qtr.	1,251.94	2,290.87	11,322.40	2.29%	3.94%
4th Qtr.	909.80	1,599.64	8,795.61	2.98%	1.65%
2009					
1st Qtr.	809.31	1,485.14	7,774.06	3.00%	0.86%
2nd Qtr.	892.23	1,731.41	8,327.83	2.45%	0.82%
3rd Qtr.	996.68	1,985.25	9,229.93	2.16%	1.19%
4th Qtr.	1,088.70	2,162.33	10,172.78	1.99%	4.57%
2010					
1st Qtr.	1,121.60	2,274.88	10,454.42	1.94%	5.21%
2nd Qtr.	1,135.25	2,343.40	10,570.54	1.97%	6.51%
3rd Qtr.	1,096.39	2,237.97	10,390.24	2.09%	6.30%
4th Qtr.	1,204.00	2,534.62	11,236.02	1.95%	6.15%
2011					
1st Qtr.	1,302.74	2,741.01	12,024.62	1.85%	6.13%
2nd Qtr.	1,319.04	2,766.64	12,370.73	1.97%	6.35%
3rd Qtr.	1,237.12	2,613.11	11,671.47	2.15%	7.69%
4th Qtr.	1,225.65	2,600.91	11,798.65	2.25%	6.91%
2012					
1st Qtr.	1,347.44	2,902.90	12,839.80	2.12%	6.29%
2nd Qtr.	1,350.39	2,928.62	12,765.58	2.30%	6.45%
3rd Qtr.	1,402.21	3,029.86	13,118.72	2.27%	6.00%
4th Qtr.	1,418.21	3,001.69	13,142.91	2.28%	6.07%
2013					
1st Qtr.	1,514.41	3,177.10	14,000.30	2.21%	5.59%
2nd Qtr.	1,609.77	3,369.49	14,961.28	2.15%	5.66%
3rd Qtr.	1,675.31	3,643.63	15,255.25	2.14%	5.61%
4th Qtr.	1,770.45	3,960.54	15,751.96	2.06%	5.42%
2014					
1st Qtr.	1,834.30	4,210.06	16,170.26	2.04%	5.38%
2nd Qtr.	1,900.37	4,195.81	16,603.50	2.06%	5.26%
3rd Qtr.	1,975.95	4,483.51	16,953.85	2.02%	5.37%
4th Qtr.	2,012.04	4,607.88	17,368.36	2.03%	4.97%
2015					
1st Qtr.	2,063.46	4,821.99	17,806.47	2.02%	4.80%
2nd Qtr.	2,094.37	5,029.47	18,007.48	2.05%	4.60%
3rd Qtr.	2,026.14	4,921.81	17,065.52	2.16%	4.72%
4th Qtr.	2,053.17	5,000.70	18,482.97	2.16%	4.23%
2016					
1st Qtr.	1,948.32	4,609.47	16,635.76	2.31%	4.20%
2nd Qtr.	2,074.99	4,845.88	17,763.85	2.10%	

Source: Council of Economic Advisors, Economic Indicators, various issues.

HISTORY OF CREDIT RATINGS
CORPORATE/ISSUER CREDIT RATINGS

Year	Metropolitan Edison		Pennsylvania Electric		Pennsylvania Electric		West Penn Power	
	S&P	Moody's	S&P	Moody's	S&P	Moody's	S&P	Moody's
2011	BBB-	Baa2	BBB-	Baa2	BBB-	Baa2	BBB-	Baa2
2012	BBB-	Baa2	BBB-	Baa2	BBB-	Baa2	BBB-	Baa2
2013	BBB-	Baa2	BBB-	Baa2	BBB-	Baa2	BBB-	Baa2
2014	BBB-	Baa1	BBB-	Baa2	BBB-	Baa1	BBB-	Baa1
2015	BBB-	Baa1	BBB-	Baa2	BBB-	Baa1	BBB-	Baa1
2016	BBB-	Baa2	BBB-	Baa2	BBB-	Baa2	BBB-	Baa1

Source: Response to OCA Interrogatory Set II, No. 5.

METROPOLITAN EDISON COMPANY
CAPITAL STRUCTURE RATIOS
2011 - 2015
(\$000)

YEAR	COMMON EQUITY	LONG-TERM DEBT	SHORT-TERM DEBT
2011	\$806,600 45.0% 52.6%	\$728,277 40.6% 47.4%	\$257,563 14.4%
2012	\$799,726 45.8% 52.3%	\$728,396 41.7% 47.7%	\$219,023 12.5%
2013	\$797,290 48.4% 50.6%	\$778,096 47.2% 49.4%	\$73,281 4.4%
2014	\$792,762 47.3% 48.3%	\$848,998 50.7% 51.7%	\$33,470 2.0%
2015	\$797,349 46.9% 48.4%	\$849,104 49.9% 51.6%	\$53,836 3.2%

Note: Percentages may not total 100.0% due to rounding.

Source: Response to OCA Interrogatory Set II, No. 3.

PENNSYLVANIA ELECTRIC COMPANY
CAPITAL STRUCTURE RATIOS
2011 - 2015
(\$000)

YEAR	COMMON EQUITY	LONG-TERM DEBT	SHORT-TERM DEBT
2011	\$941,242 44.5% 45.7%	\$1,117,572 52.8% 54.3%	\$57,900 2.7%
2012	\$902,647 44.3% 44.7%	\$1,117,882 54.9% 55.3%	\$17,475 0.9%
2013	\$998,443 47.0% 50.8%	\$968,198 45.6% 49.2%	\$158,524 7.5%
2014	\$1,022,562 47.7% 47.7%	\$1,122,961 52.3% 52.3%	\$0 0.0%
2015	\$1,024,695 47.7% 47.7%	\$1,123,297 52.3% 52.3%	\$0 0.0%

Note: Percentages may not total 100.0% due to rounding.

Source: Response to OCA Interrogatory Set II, No. 3.

PENNSYLVANIA POWER COMPANY
CAPITAL STRUCTURE RATIOS
2011 - 2015
(\$000)

YEAR	COMMON EQUITY	LONG-TERM DEBT	SHORT-TERM DEBT
2011	\$153,539 58.7% 58.7%	\$107,825 41.3% 41.3%	\$0 0.0%
2012	\$165,716 60.8% 60.8%	\$106,851 39.2% 39.2%	\$0 0.0%
2013	\$111,132 47.8% 51.2%	\$105,877 45.5% 48.8%	\$15,651 6.7%
2014	\$116,168 45.0% 52.5%	\$104,903 40.6% 47.5%	\$37,313 14.4%
2015	\$144,473 49.6% 58.2%	\$103,929 35.6% 41.8%	\$43,133 14.8%

Note: Percentages may not total 100.0% due to rounding.

Source: Response to OCA Interrogatory Set II, No. 3.

WEST PENN POWER COMPANY
CAPITAL STRUCTURE RATIOS
2011 - 2015
(\$000)

YEAR	COMMON EQUITY	LONG-TERM DEBT	SHORT-TERM DEBT
2011	\$533,729 48.7% 49.6%	\$542,083 49.5% 50.4%	\$20,003 1.8%
2012	\$581,406 51.2% 51.2%	\$553,382 48.8% 48.8%	\$0 0.0%
2013	\$603,567 49.9% 52.5%	\$545,769 45.1% 47.5%	\$61,093 5.0%
2014	\$636,804 50.4% 54.2%	\$538,157 42.6% 45.8%	\$88,547 7.0%
2015	\$666,609 49.3% 49.5%	\$680,544 50.3% 50.5%	\$4,555 0.3%

Note: Percentages may not total 100.0% due to rounding.

Source: Response to OCA Interrogatory Set II, No. 3.

FIRSTENERGY CORP
CAPITAL STRUCTURE RATIOS
2011 - 2015
(\$millions)

YEAR	COMMON EQUITY	PREFERENCE SHARES	TOTAL DEBT 1/
2011	\$13,299 43.4% 43.4%	\$17,337 56.6% 56.6%	\$0 0.0%
2012	\$13,093 40.6% 43.3%	\$17,178 53.3% 56.7%	\$1,969 6.1%
2013	\$12,695 38.1% 42.4%	\$17,246 51.7% 57.6%	\$3,404 10.2%
2014	\$12,422 36.3% 38.3%	\$19,980 58.4% 61.7%	\$1,799 5.3%
2015	\$12,422 36.0% 37.9%	\$20,358 59.0% 62.1%	\$1,708 5.0%

1/ Includes capital lease and finance obligations.

Source: Response to OCA Interrogatory Set II, No. 3.

**FIRSTENERGY UTILITY SUBSIDIARIES
CAPITAL STRUCTURE RATIOS
DECEMBER 31, 2015
(\$000)**

COMPANY	COMMON EQUITY	LONG-TERM DEBT	SHORT-TERM DEBT
Metropolitan Ed	\$797,349 46.9% 48.4%	\$849,104 49.9% 51.6%	\$53,836 3.2%
Pennsylvania Electric	\$1,024,695 47.7% 47.7%	\$1,123,297 52.3% 52.3%	\$0 0.0%
Pennsylvania Power	\$144,473 49.6% 58.2%	\$103,929 35.6% 41.8%	\$43,133 14.8%
West Penn Power	\$666,609 49.3% 49.5%	\$680,544 50.3% 50.5%	\$4,555 0.3%
Ohio Edison	\$1,119,604 63.6% 63.6%	\$641,265 36.4% 36.4%	\$0 0.0%
CEI	\$1,090,889 41.8% 45.1%	\$1,328,053 50.9% 54.9%	\$189,844 7.3%
Toledo Edison	\$533,405 58.8% 60.4%	\$349,515 38.6% 39.6%	\$23,463 2.6%
JCP&L	\$2,461,534 52.1% 52.3%	\$2,243,049 47.5% 47.7%	\$21,417 0.5%
Mon Power	\$1,172,044 45.2% 48.9%	\$1,225,270 47.2% 51.1%	\$196,109 7.6%
Potomac Edison	\$475,779 47.5% 51.6%	\$446,499 44.5% 48.4%	\$80,350 8.0%
ATSI	\$1,310,151 58.1% 58.1%	\$946,024 41.9% 41.9%	\$0 0.0%
TrAIL	\$931,728 59.9% 59.9%	\$624,624 40.1% 40.1%	\$0 0.0%

Note: Percentages may not total 100.0% due to rounding.

Sources: Response to OCA Interrogatory Set II, No. 4, Set IX, No. 1.

**AUS UTILITY REPORTS
ELECTRIC UTILITY GROUPS
AVERAGE COMMON EQUITY RATIOS**

Year	Electric	Combination Electric and Gas
2011	47%	46%
2012	47%	46%
2013	48%	47%
2014	47%	47%
2015	47%	47%

Note: Averages include short-term debt.

Source: AUS Utility Reports.

**PROXY COMPANIES
BASIS FOR SELECTION**

Company	Market Capitalization (\$ millions)	Percent Reg Electric Revenues	Common Equity Ratio	Value Line Safety	S&P Stock Ranking	S&P Bond Rating	Moody's Bond Rating
FirstEnergy Corp	\$14,000,000	71%	39%	3	B	BBB	Baa2
Parcell Proxy Group							
Ameren Corp	\$12,000,000	85%	50%	2	B	BBB+/BBB	Baa1
Consolidated Edison Co	\$22,000,000	70%	52%	1	B+	A-/BBB+	A3
Edison International	\$23,000,000	100%	47%	2	B	BBB+	A2/A3
Entergy Corp	\$13,000,000	81%	41%	3	A-	BBB+/BBB	Baa2/Baa3
Eversource Energy	\$18,000,000	88%	54%	1	A-	A-	A3/Baa1
OGE Energy	\$5,200,000	100%	56%	2	A-	BBB+	A3
Pinnacle West Capital	\$8,300,000	100%	57%	1	B+	BBB	A3/Baa1
SCANA Corp	\$10,000,000	58%	48%	2	A-	BBB+	Baa1/Baa2
WEC Energy Group	\$18,000,000	68%	49%	1	A	A-/BBB+	A1/A2
Ahern Proxy Group							
ALLETE	\$2,700,000	67%	54%	2	A-	A-	A3
Alliant Energy Corp	\$8,000,000	85%	50%	2	B+	A-	A2/A3
Ameren Corp	\$12,000,000	85%	50%	2	B	BBB+/BBB	Baa1
American Electric Power	\$31,000,000	81%	50%	2	A-	BBB/BBB-	Baa1
Consolidated Edison Co	\$22,000,000	70%	52%	1	B+	A-/BBB+	A3
Edison International	\$23,000,000	100%	47%	2	B	BBB+	A2/A3
El Paso Electric Co	\$1,800,000	100%	47%	2	B	BBB	Baa1
Great Plains Energy	\$4,700,000	100%	49%	3	B	BBB	Baa2
IDACORP	\$3,700,000	100%	54%	2	A-	A-	A3
OGE Energy	\$5,200,000	100%	56%	2	A-	BBB+	A3
Otter Tail Power	\$1,100,000	52%	58%	3	B	BBB-	Baa2
PG&E Corp	\$29,000,000	81%	50%	3	B	BBB/BBB-	A3/Baa1
Pinnacle West Capital Corp	\$8,300,000	100%	57%	1	B+	BBB	A3/Baa1
PNM Resources	\$2,600,000	100%	46%	3	B	BBB	Baa2
Portland General Electric Co	\$3,500,000	100%	52%	2	NR	A-	A3
SCANA Corp	\$10,000,000	58%	48%	2	A-	BBB+	Baa1/Baa2
Westar Energy, Inc.	\$6,200,000	100%	49%	2	A-	A-	A3/Baa1
Xcel Energy	\$21,000,000	84%	46%	1	A-	A-	A3

Sources: AUS Utility Reports, Value Line.

PROXY COMPANIES DIVIDEND YIELD

COMPANY	Qtr DPS	April - June 2016			YIELD	
		DPS	HIGH	LOW		
Parcell Proxy Group						
Ameren Corp	\$0.425	\$1.70	\$53.59	\$46.29	\$49.94	3.4%
Consolidated Edison Co	\$0.670	\$2.68	\$80.44	\$70.31	\$75.38	3.6%
Edison International	\$0.480	\$1.92	\$77.71	\$67.71	\$72.71	2.6%
Entergy Corp	\$0.850	\$3.40	\$81.36	\$72.67	\$77.02	4.4%
Eversource Energy	\$0.445	\$1.78	\$59.95	\$53.90	\$56.93	3.1%
FirstEnergy Corp	\$0.360	\$1.44	\$36.32	\$31.37	\$33.85	4.3%
OGE Energy	\$0.275	\$1.10	\$32.75	\$27.27	\$30.01	3.7%
Pinnacle West Capital	\$0.625	\$2.50	\$81.08	\$70.11	\$75.60	3.3%
SCANA Corp	\$0.575	\$2.30	\$75.67	\$66.02	\$70.85	3.2%
WEC Energy Group	\$0.495	\$1.98	\$65.30	\$55.46	\$60.38	3.3%
Average						3.5%
Ahern Proxy Group						
ALLETE	\$0.520	\$2.08	\$64.69	\$53.47	\$59.08	3.5%
Alliant Energy Corp	\$0.147	\$0.59	\$40.24	\$35.26	\$37.75	1.6%
Ameren Corp	\$0.425	\$1.70	\$53.59	\$46.29	\$49.94	3.4%
American Electric Power	\$0.560	\$2.24	\$70.10	\$61.42	\$65.76	3.4%
Consolidated Edison Co	\$0.670	\$2.68	\$80.44	\$70.31	\$75.38	3.6%
Edison International	\$0.480	\$1.92	\$77.71	\$67.71	\$72.71	2.6%
El Paso Electric Co	\$0.310	\$1.24	\$47.27	\$42.42	\$44.85	2.8%
Great Plains Energy	\$0.263	\$1.05	\$32.74	\$28.08	\$30.41	3.5%
IDACORP	\$0.510	\$2.04	\$81.36	\$69.83	\$75.60	2.7%
OGE Energy	\$0.275	\$1.10	\$32.75	\$27.27	\$30.01	3.7%
Otter Tail Power	\$0.313	\$1.25	\$33.50	\$27.77	\$30.64	4.1%
PG&E Corp	\$0.490	\$1.96	\$63.95	\$56.39	\$60.17	3.3%
Pinnacle West Capital Corp	\$0.625	\$2.50	\$81.08	\$70.11	\$75.60	3.3%
PNM Resources	\$0.220	\$0.88	\$35.46	\$30.62	\$33.04	2.7%
Portland General Electric Co	\$0.320	\$1.28	\$44.12	\$37.77	\$40.95	3.1%
SCANA Corp	\$0.575	\$2.30	\$75.67	\$66.02	\$70.85	3.2%
Westar Energy, Inc.	\$0.380	\$1.52	\$57.25	\$48.92	\$53.09	2.9%
Xcel Energy	\$0.340	\$1.36	\$44.78	\$38.43	\$41.61	3.3%
Average						3.1%

Source: Yahoo! Finance.

**PROXY COMPANIES
RETENTION GROWTH RATES**

COMPANY	2011	2012	2013	2014	2015	Average	2016	2017	2019-'21	Average
Parcell Proxy Group										
Ameren Corp	2.8%	3.0%	1.9%	2.9%	2.5%	2.6%	2.5%	3.5%	3.5%	3.2%
Consolidated Edison Co	3.1%	3.6%	3.6%	2.6%	3.5%	3.3%	2.5%	3.0%	2.5%	2.7%
Edison International	6.3%	11.4%	8.1%	8.8%	7.2%	8.4%	5.5%	5.5%	5.5%	5.5%
Entergy Corp	8.4%	5.2%	3.0%	4.4%	4.8%	5.2%	3.0%	4.0%	4.5%	3.8%
Eversource Energy	5.0%	1.6%	3.4%	3.5%	3.4%	3.4%	3.5%	3.5%	4.0%	3.7%
FirstEnergy Corp	0.0%	0.0%	2.6%	0.0%	1.9%	0.9%	4.0%	4.5%	4.5%	4.3%
OGE Energy	7.7%	7.2%	7.3%	6.5%	4.0%	6.5%	3.5%	3.5%	3.5%	3.5%
Pinnacle West Capital	2.8%	4.1%	4.1%	3.5%	3.9%	3.7%	3.5%	3.5%	3.5%	3.5%
SCANA Corp	3.5%	3.9%	4.1%	4.9%	4.3%	4.1%	4.0%	4.0%	4.0%	4.0%
WEC Energy Group	6.8%	6.5%	5.9%	5.3%	2.1%	5.3%	3.5%	3.5%	3.5%	3.5%
Average						4.3%				3.8%
Ahern Proxy Group										
ALLETE	2.9%	2.3%	2.2%	2.5%	3.6%	2.7%	3.0%	3.0%	3.0%	3.0%
Alliant Energy Corp	3.3%	3.9%	4.9%	4.3%	3.4%	4.0%	4.0%	4.5%	5.5%	4.7%
Ameren Corp	2.8%	3.0%	1.9%	2.9%	2.5%	2.6%	2.5%	3.5%	3.5%	3.2%
American Electric Power	4.2%	3.5%	3.7%	3.0%	3.9%	3.7%	3.5%	3.5%	3.5%	3.5%
Consolidated Edison Co	3.1%	3.6%	3.6%	2.6%	3.5%	3.3%	2.5%	3.0%	2.5%	2.7%
Edison International	6.3%	11.4%	8.1%	8.8%	7.2%	8.4%	5.5%	5.5%	5.5%	5.5%
El Paso Electric Co	10.0%	6.3%	4.9%	4.8%	3.4%	5.9%	3.5%	3.5%	3.0%	3.3%
Great Plains Energy	2.0%	2.2%	3.2%	2.7%	1.6%	2.3%	2.5%	2.5%	3.0%	2.7%
IDACORP	6.5%	5.7%	5.6%	5.4%	4.8%	5.6%	4.5%	4.0%	3.5%	4.0%
OGE Energy	7.7%	7.2%	7.3%	6.5%	4.0%	6.5%	3.5%	3.5%	3.5%	3.5%
Otter Tail Power	0.0%	0.0%	1.2%	2.2%	2.0%	1.1%	2.0%	2.0%	4.0%	2.7%
PG&E Corp	3.4%	1.0%	0.2%	3.9%	0.7%	1.8%	3.5%	5.0%	5.0%	4.5%
Pinnacle West Capital Corp	2.8%	4.1%	4.1%	3.5%	3.9%	3.7%	3.5%	3.5%	3.5%	3.5%
PNM Resources	3.3%	3.8%	3.7%	3.2%	4.0%	3.6%	3.5%	3.5%	3.5%	3.5%
Portland General Electric Co	4.1%	3.5%	2.9%	4.6%	3.3%	3.7%	4.0%	4.0%	4.0%	4.0%
SCANA Corp	3.5%	3.9%	4.1%	4.9%	4.3%	4.1%	4.0%	4.0%	4.0%	4.0%
Westar Energy, Inc.	2.7%	4.0%	4.2%	4.3%	2.9%	3.6%	4.5%	4.5%	5.0%	4.7%
Xcel Energy	4.3%	4.7%	4.5%	4.5%	4.3%	4.5%	4.0%	4.0%	4.0%	4.0%
Average						3.9%				3.7%

Source: Value Line Investment Survey.

PROXY COMPANIES PER SHARE GROWTH RATES

COMPANY	5-Year Historic Growth Rates				Est'd '13-'15 to '19-'21 Growth Rates			
	EPS	DPS	BVPS	Average	EPS	DPS	BVPS	Average
Parcell Proxy Group								
Ameren Corp	-4.0%	-3.0%	-3.0%	neg	6.0%	4.0%	3.5%	4.5%
Consolidated Edison Co	3.0%	1.5%	3.5%	2.7%	1.5%	3.0%	3.5%	2.7%
Edison International	3.5%	4.0%	1.5%	3.0%	3.5%	9.0%	5.5%	6.0%
Entergy Corp	-3.0%	1.5%	3.5%	0.7%	3.5%	3.0%	3.0%	3.2%
Eversource Energy	6.0%	11.0%	9.0%	8.7%	6.0%	6.0%	4.0%	5.3%
FirstEnergy Corp	-12.0%	-7.5%	1.5%	neg	9.0%	1.0%	3.5%	4.5%
OGE Energy	6.5%	6.0%	8.5%	7.0%	3.0%	9.5%	3.5%	5.3%
Pinnacle West Capital	8.5%	2.0%	3.5%	4.7%	4.0%	5.0%	3.5%	4.2%
SCANA Corp	4.5%	2.5%	5.0%	4.0%	4.5%	5.0%	5.0%	4.8%
WEC Energy Group	8.0%	18.5%	7.5%	11.3%	6.0%	7.0%	7.0%	6.7%
Average				5.3%				4.7%
Ahern Proxy Group								
ALLETE	5.0%	2.5%	6.0%	4.5%	4.0%	3.5%	4.0%	3.8%
Alliant Energy Corp	7.0%	6.5%	4.0%	5.8%	6.0%	4.5%	4.0%	4.8%
Ameren Corp	-4.0%	-3.0%	-3.0%	neg	6.0%	4.0%	3.5%	4.5%
American Electric Power	3.5%	4.0%	5.0%	4.2%	4.0%	5.0%	4.0%	4.3%
Consolidated Edison Co	3.0%	1.5%	3.5%	2.7%	1.5%	3.0%	3.5%	2.7%
Edison International	3.5%	4.0%	1.5%	3.0%	3.5%	9.0%	5.5%	6.0%
El Paso Electric Co	4.0%		7.5%	5.8%	2.5%	5.0%	3.5%	3.7%
Great Plains Energy	4.0%	-3.0%	2.0%	1.0%	4.5%	5.5%	2.5%	4.2%
IDACORP	8.0%	8.0%	6.0%	7.3%	3.0%	7.5%	4.0%	4.8%
OGE Energy	6.5%	6.0%	8.5%	7.0%	3.0%	9.5%	3.5%	5.3%
Otter Tail Power	15.5%	0.5%	-3.5%	4.2%	6.0%	1.5%	4.5%	4.0%
PG&E Corp	-5.5%	1.5%	3.5%	neg	12.0%	4.5%	5.0%	7.2%
Pinnacle West Capital Corp	8.5%	2.0%	3.5%	4.7%	4.0%	5.0%	3.5%	4.2%
PNM Resources	23.5%		1.0%	12.3%	9.0%	10.0%	3.5%	7.5%
Portland General Electric Co	6.5%	2.5%	3.0%	4.0%	5.5%	6.0%	4.0%	5.2%
SCANA Corp	4.5%	2.5%	5.0%	4.0%	4.5%	5.0%	5.0%	4.8%
Westar Energy, Inc.	9.0%	3.0%	4.0%	5.3%	6.0%	3.0%	5.0%	4.7%
Xcel Energy	6.0%	4.5%	4.5%	5.0%	5.5%	6.0%	4.0%	5.2%
Average				5.0%				4.8%

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								
Ameren Corp	3.5%	2.6%	3.2%	neg	4.5%	5.2%	3.9%	7.3%
Consolidated Edison Co	3.6%	3.3%	2.7%	2.7%	2.7%	2.0%	2.6%	6.3%
Edison International	2.7%	8.4%	5.5%	3.0%	6.0%	2.5%	5.1%	7.8%
Entergy Corp	4.5%	5.2%	3.8%	0.7%	3.2%	neg	3.2%	7.7%
Eversource Energy	3.2%	3.4%	3.7%	8.7%	5.3%	5.5%	5.3%	8.5%
FirstEnergy Corp	4.3%	0.9%	4.3%	neg	4.5%	neg	3.2%	7.6%
OGE Energy	3.8%	6.5%	3.5%	7.0%	5.3%	4.3%	5.3%	9.1%
Pinnacle West Captal	3.4%	3.7%	3.5%	4.7%	4.2%	3.7%	3.9%	7.3%
SCANA Corp	3.3%	4.1%	4.0%	4.0%	4.8%	5.4%	4.5%	7.8%
WEC Energy Group	3.4%	5.3%	3.5%	11.3%	6.7%	6.8%	6.7%	10.1%
Mean	3.6%	4.3%	3.8%	5.3%	4.7%	4.4%	4.4%	7.9%
Median	3.4%	3.9%	3.6%	4.3%	4.7%	4.8%	4.2%	7.7%
Composite - Mean		7.9%	7.3%	8.8%	8.3%	8.0%	7.9%	
Composite - Median		7.3%	7.0%	7.8%	8.1%	8.2%	7.6%	
Ahern Proxy Group								
ALLETE	3.6%	2.7%	3.0%	4.5%	3.8%	5.0%	3.8%	7.4%
Alliant Energy Corp	1.6%	4.0%	4.7%	5.8%	4.8%	6.6%	5.2%	6.8%
Ameren Corp	3.5%	2.6%	3.2%	neg	4.5%	5.2%	3.9%	7.3%
American Electric Power	3.5%	3.7%	3.5%	4.2%	4.3%	4.1%	4.0%	7.4%
Consolidated Edison Co	3.6%	3.3%	2.7%	2.7%	2.7%	2.0%	2.6%	6.3%
Edison International	2.7%	8.4%	5.5%	3.0%	6.0%	2.5%	5.1%	7.8%
El Paso Electric Co	2.8%	5.9%	3.3%	5.8%	3.7%	7.0%	5.1%	8.0%
Great Plains Energy	3.5%	2.3%	2.7%	1.0%	4.2%	7.1%	3.5%	7.0%
IDACORP	2.8%	5.6%	4.0%	7.3%	4.8%	4.0%	5.2%	7.9%
OGE Energy	3.8%	6.5%	3.5%	7.0%	5.3%	4.3%	5.3%	9.1%
Otter Tail Power	4.2%	1.1%	2.7%	4.2%	4.0%	6.0%	3.6%	7.7%
PG&E Corp	3.3%	1.8%	4.5%	neg	7.2%	6.1%	4.9%	8.2%
Pinnacle West Capital Corp	3.4%	3.7%	3.5%	4.7%	4.2%	3.7%	3.9%	7.3%
PNM Resources	2.8%	3.6%	3.5%	12.3%	7.5%	8.8%	7.1%	9.9%
Portland General Electric Co	3.2%	3.7%	4.0%	4.0%	5.2%	6.6%	4.7%	7.9%
SCANA Corp	3.3%	4.1%	4.0%	4.0%	4.8%	5.4%	4.5%	7.8%
Westar Energy, Inc.	2.9%	3.6%	4.7%	5.3%	4.7%	5.0%	4.7%	7.6%
Xcel Energy	3.3%	4.5%	4.0%	5.0%	5.2%	5.3%	4.8%	8.1%
Mean	3.2%	3.9%	3.7%	5.0%	4.8%	5.3%	4.5%	7.7%
Median	3.3%	3.7%	3.5%	4.6%	4.8%	5.2%	4.7%	7.8%
Composite - Mean		7.2%	6.9%	8.2%	8.0%	8.5%	7.7%	
Composite - Median		7.0%	6.8%	7.9%	8.1%	8.6%	8.0%	

Note: negative values not used in calculations.

Sources: Prior 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	\$134.04	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%	7.29%	4.93%
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%	3.81%	10.78%
2012	\$86.51	\$666.97	13.52%	2.40%	11.12%
2013	\$100.20	\$715.84	14.49%	2.86%	11.63%
2014	\$102.31	\$726.96	14.18%	3.33%	10.85%
Average					6.85%

Source: Standard & Poor's Analysts' Handbook, Ibbotson Associates Handbook.

**PROXY COMPANIES
CAPM COST RATES**

COMPANY	RISK-FREE RATE	BETA	RISK PREMIUM	CAPM RATES
Parcell Proxy Group				
Ameren Corp	2.15%	0.75	5.75%	6.5%
Consolidated Edison Co	2.15%	0.55	5.75%	5.3%
Edison International	2.15%	0.70	5.75%	6.2%
Entergy Corp	2.15%	0.70	5.75%	6.2%
Eversource Energy	2.15%	0.75	5.75%	6.5%
FirstEnergy Corp	2.15%	0.70	5.75%	6.2%
OGE Energy	2.15%	0.95	5.75%	7.6%
Pinnacle West Capital	2.15%	0.75	5.75%	6.5%
SCANA Corp	2.15%	0.70	5.75%	6.2%
WEC Energy Group	2.15%	0.65	5.75%	5.9%
Mean				6.3%
Median				6.2%
Ahern Proxy Group				
ALLETE	2.15%	0.75	5.75%	6.5%
Alliant Energy Corp	2.15%	0.75	5.75%	6.5%
Ameren Corp	2.15%	0.75	5.75%	6.5%
American Electric Power	2.15%	0.70	5.75%	6.2%
Consolidated Edison Co	2.15%	0.55	5.75%	5.3%
Edison International	2.15%	0.70	5.75%	6.2%
El Paso Electric Co	2.15%	0.75	5.75%	6.5%
Great Plains Energy	2.15%	0.80	5.75%	6.8%
IDACORP	2.15%	0.80	5.75%	6.8%
OGE Energy	2.15%	0.95	5.75%	7.6%
Otter Tail Power	2.15%	0.80	5.75%	6.8%
PG&E Corp	2.15%	0.70	5.75%	6.2%
Pinnacle West Capital Corp	2.15%	0.75	5.75%	6.5%
PNM Resources	2.15%	0.80	5.75%	6.8%
Portland General Electric Co	2.15%	0.80	5.75%	6.8%
SCANA Corp	2.15%	0.70	5.75%	6.2%
Westar Energy, Inc.	2.15%	0.75	5.75%	6.5%
Xcel Energy	2.15%	0.65	5.75%	5.9%
Mean				6.4%
Median				6.5%

Sources: Value Line Investment Survey, Standard & Poor's Analysts' Handbook, Federal Reserve.

20-year Treasury Bonds	
Month	Rate
Apr. 2016	2.21%
May 2016	2.22%
June 2016	2.02%
Average	2.15%

PROXY COMPANIES
RATES OF RETURN ON AVERAGE COMMON EQUITY

COMPANY	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2002-2008 Average	2009-2015 Average	2016	2017	2019-21
Parcell Proxy Group																			
Ameren Corp	10.8%	12.2%	10.0%	10.3%	8.5%	9.3%	8.8%	8.4%	8.5%	7.6%	8.0%	7.7%	8.8%	8.5%	10.0%	8.2%	8.5%	9.0%	9.5%
Consolidated Edison Co	11.5%	10.0%	8.0%	10.2%	9.7%	10.9%	9.9%	8.7%	9.3%	9.3%	9.7%	9.5%	8.5%	9.3%	10.0%	9.2%	8.0%	8.5%	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%	13.5%	12.2%	11.0%	11.0%	11.5%
Entergy Corp	10.7%	10.1%	10.3%	11.9%	14.1%	13.8%	15.0%	14.4%	14.3%	15.4%	11.7%	9.4%	10.5%	10.8%	12.3%	12.4%	9.5%	10.0%	11.0%
Eversource Energy	6.4%	7.1%	5.1%	5.4%	4.5%	8.6%	9.8%	9.6%	4.9%	10.0%	7.3%	8.3%	8.3%	8.6%	6.7%	8.1%	9.0%	9.0%	9.5%
FirstEnergy Corp	10.4%	6.0%	10.8%	10.5%	13.6%	14.6%	15.5%	12.0%	11.6%	6.3%	6.8%	9.6%	2.8%	6.8%	11.6%	8.0%	8.5%	9.0%	9.0%
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%	13.2%	12.8%	10.0%	10.5%	12.0%
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%	7.9%	9.1%	9.5%	9.5%	10.0%
SCANA Corp	11.7%	12.4%	12.6%	12.4%	10.9%	11.0%	11.5%	10.7%	10.5%	10.0%	10.2%	10.5%	11.1%	10.4%	11.8%	10.5%	10.0%	10.0%	10.0%
WEC Energy Group	12.8%	11.8%	9.0%	11.6%	11.1%	11.1%	11.0%	10.8%	12.2%	13.0%	13.3%	13.6%	13.5%	10.0%	11.2%	12.3%	10.5%	10.5%	11.0%
Average	10.9%	10.7%	9.1%	10.9%	11.2%	11.6%	11.4%	10.5%	10.5%	10.5%	10.5%	10.4%	9.9%	9.7%	10.8%	10.3%	9.5%	9.7%	10.2%
Median	11.0%	11.0%	9.5%	11.1%	11.0%	11.1%	11.3%	10.8%	10.6%	10.0%	10.0%	9.8%	9.9%	9.9%	10.8%	10.1%	9.5%	9.8%	10.0%
Ahern 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%		8.6%	8.5%	8.5%	8.5%
Alliant Energy Corp	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%	9.2%	10.5%	10.5%	11.0%	12.5%
Ameren Corp	10.8%	12.2%	10.0%	10.3%	8.5%	9.3%	8.8%	8.4%	8.5%	7.6%	8.0%	7.7%	8.8%	8.5%	10.0%	8.2%	8.5%	9.0%	9.5%
American Electric Power	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%	12.1%	10.1%	9.5%	10.0%	9.5%
Consolidated Edison Co	11.5%	10.0%	8.0%	10.2%	9.7%	10.9%	9.9%	8.7%	9.3%	9.3%	9.7%	9.5%	8.5%	9.3%	10.0%	9.2%	8.0%	8.5%	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%	13.5%	12.2%	11.0%	11.0%	11.5%
EI Paso Electric Co	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%	8.5%	10.5%	8.0%	8.0%	8.5%
Great Plains Energy	15.6%	16.6%	16.9%	13.7%	9.8%	10.6%	5.9%	4.9%	7.3%	5.8%	6.2%	7.3%	6.8%	5.8%	12.7%	6.3%	6.5%	7.0%	7.5%
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%	7.3%	9.9%	9.0%	9.0%	9.0%
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%	13.2%	12.8%	10.0%	10.5%	12.0%
Otter Tail Power	15.2%	12.0%	10.9%	11.6%	10.4%	10.4%	5.9%	3.7%	2.1%	2.7%	6.9%	9.4%	10.3%	9.9%	10.9%	6.4%	9.0%	9.0%	10.5%
PG&E Corp	nmf	20.9%	13.8%	11.7%	13.2%	11.9%	12.8%	11.3%	10.0%	9.6%	6.9%	5.9%	9.5%	6.0%	14.1%	8.5%	9.0%	10.0%	10.0%
Pinnacle West Capital Corp	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%	7.9%	9.1%	9.5%	9.5%	10.0%
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%	7.6%	6.0%	5.9%	7.5%	8.0%	9.5%
Portland General Electric Co					5.9%	11.5%	6.5%	6.2%	8.0%	9.0%	8.3%	7.7%	9.1%	8.2%		8.1%	8.5%	9.0%	9.0%
SCANA Corp	11.7%	12.4%	12.6%	12.4%	10.9%	11.0%	11.5%	10.7%	10.5%	10.0%	10.2%	10.5%	11.1%	10.4%	11.8%	10.5%	10.0%	10.0%	10.0%
Westar Energy, Inc.	5.0%	10.6%	7.7%	9.6%	11.1%	10.0%	6.7%	6.3%	8.6%	8.2%	9.5%	9.8%	9.7%	8.2%	8.7%	8.6%	9.0%	10.0%	10.5%
Xcel Energy	2.8%	10.0%	9.8%	9.1%	9.8%	9.3%	9.7%	9.5%	9.5%	10.1%	10.4%	10.2%	10.3%	10.2%	8.6%	10.0%	10.0%	10.0%	10.5%
Average	9.7%	11.3%	9.9%	10.7%	10.6%	10.6%	9.1%	8.2%	9.0%	9.2%	9.5%	9.5%	9.8%	9.1%	10.3%	9.2%	9.0%	9.3%	9.8%
Median	10.8%	11.3%	9.2%	10.3%	10.1%	11.0%	9.8%	8.6%	9.3%	9.6%	9.7%	9.9%	9.6%	9.6%	10.3%	9.4%	9.0%	9.3%	9.8%

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	2002-2008 Average	2009-2015 Average
Parcell Proxy Group																
Ameren Corp	163%	162%	161%	172%	164%	159%	122%	83%	81%	92%	106%	125%	152%	149%	158%	113%
Consolidated Edison Co	144%	146%	143%	154%	149%	151%	123%	110%	124%	145%	150%	144%	143%	148%	144%	138%
Edison International	117%	108%	153%	205%	194%	208%	149%	101%	111%	117%	146%	166%	177%	182%	162%	143%
Entergy Corp	114%	136%	156%	194%	211%	264%	229%	167%	164%	134%	133%	126%	139%	141%	186%	143%
Eversource Energy	99%	95%	106%	108%	131%	163%	128%	114%	136%	150%	143%	141%	158%	158%	119%	143%
FirstEnergy Corp	131%	132%	154%	169%	195%	230%	221%	161%	145%	138%	145%	127%	118%	122%	176%	137%
OGE Energy	147%	154%	178%	187%	205%	197%	145%	139%	180%	197%	204%	231%	228%	185%	173%	195%
Pinnacle West Capital	116%	114%	130%	130%	129%	127%	100%	90%	113%	125%	141%	153%	158%	160%	121%	134%
SCANA Corp	137%	158%	171%	179%	167%	158%	141%	121%	134%	135%	152%	154%	160%	158%	159%	145%
WEC Energy Group	129%	147%	156%	168%	182%	179%	153%	147%	171%	186%	213%	223%	249%	219%	159%	201%
Average	130%	135%	151%	167%	173%	184%	151%	123%	136%	142%	153%	159%	168%	162%	156%	149%
Median	130%	141%	155%	171%	175%	171%	143%	118%	135%	137%	146%	149%	158%	158%	155%	143%
Ahern Proxy Group																
ALLETE				212%	219%	195%	156%	113%	127%	138%	136%	152%	151%	146%		138%
Alliant Energy Corp	110%	97%	120%	131%	155%	173%	131%	10%	131%	147%	161%	169%	197%	196%	131%	144%
Ameren Corp	163%	162%	161%	172%	164%	159%	122%	83%	81%	92%	106%	125%	152%	149%	158%	113%
American Electric Power	138%	124%	155%	165%	161%	190%	145%	112%	18%	128%	134%	145%	162%	166%	154%	124%
Consolidated Edison Co	144%	146%	143%	154%	149%	151%	123%	110%	124%	145%	150%	144%	143%	148%	144%	138%
Edison International	117%	108%	153%	205%	194%	208%	149%	101%	111%	117%	146%	166%	177%	182%	162%	143%
El Paso Electric Co	140%	120%	148%	176%	179%	179%	134%	102%	134%	164%	163%	161%	158%	152%	154%	148%
Great Plains Energy	163%	198%	218%	189%	181%	173%	113%	73%	87%	89%	97%	102%	116%	116%	176%	97%
IDACORP	134%	112%	125%	122%	139%	132%	104%	94%	113%	119%	123%	136%	159%	158%	124%	129%
OGE Energy	147%	154%	178%	187%	205%	197%	145%	139%	180%	197%	204%	231%	228%	185%	173%	195%
Otter Tail Power	245%	209%	185%	183%	178%	200%	167%	108%	120%	123%	152%	196%	196%	186%	195%	154%
PG&E Corp	149%	203%	196%	179%	201%	203%	144%	149%	148%	146%	145%	143%	147%	161%	182%	148%
Pinnacle West Capital Corp	116%	114%	130%	130%	129%	127%	100%	90%	113%	125%	141%	153%	158%	160%	121%	134%
PNM Resources	95%	93%	124%	147%	134%	125%	72%	50%	68%	86%	100%	109%	127%	129%	113%	96%
Portland General Electric Co					153%	140%	101%	83%	97%	109%	117%	131%	145%	148%		119%
SCANA Corp	137%	158%	171%	179%	167%	158%	141%	121%	134%	135%	152%	154%	160%	158%	159%	145%
Westar Energy, Inc.	67%	109%	132%	142%	139%	140%	107%	91%	111%	119%	133%	138%	155%	153%	119%	129%
Xcel Energy	113%	113%	132%	139%	150%	154%	127%	121%	135%	143%	156%	157%	165%	171%	133%	150%
Average	136%	139%	154%	165%	167%	167%	127%	97%	113%	129%	140%	151%	161%	159%	150%	136%
Median	138%	122%	151%	172%	163%	166%	129%	102%	117%	127%	143%	149%	158%	158%	149%	136%

Source: Calculations made from data contained in Value Line Investment Survey.

**STANDARD & POOR'S 500 COMPOSITE
RETURNS AND MARKET-TO-BOOK RATIOS
2002 - 2014**

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%
Averages:		
2002-2008	12.4%	275%
2009-2014	13.6%	220%

Source: Standard & Poor's Analyst's Handbook, 2015 edition.

RISK INDICATORS

COMPANY	VALUE LINE SAFETY	VALUE LINE BETA	VALUE LINE FINANCIAL STRENGTH		S& P STOCK RANKING	
Parcell Proxy Group						
Ameren Corp	2	0.75	A	4.00	B	3.00
Consolidated Edison Co	1	0.55	A+	4.33	B+	3.33
Edison International	2	0.70	A	4.00	B	3.00
Entergy Corp	3	0.70	B++	3.67	A-	3.67
Eversource Energy	1	0.75	A	4.00	A-	3.67
FirstEnergy Corp	3	0.70	B+	3.33	B	3.00
OGE Energy	2	0.95	A	4.00	A-	3.67
Pinnacle West Capital	1	0.75	A+	4.33	B+	3.33
SCANA Corp	2	0.70	B++	3.67	A	4.00
WEC Energy Group	1	0.65	A+	4.33	A	4.00
	1.8	0.72	A	3.97	B+/A-	3.47
Ahern Proxy Group						
ALLETE	2	0.75	A	4.00	A-	3.67
Alliant Energy Corp	2	0.75	A	4.00	B+	3.33
Ameren Corp	2	0.75	A	4.00	B	3.00
American Electric Power	2	0.70	A	4.00	A-	3.67
Consolidated Edison Co	1	0.55	A+	4.33	B+	3.33
Edison International	2	0.70	A	4.00	B	3.00
El Paso Electric Co	2	0.75	B++	3.67	B	3.00
Great Plains Energy	3	0.80	B+	3.33	B	3.00
IDACORP	2	0.80	A	4.00	A	4.00
OGE Energy	2	0.95	A	4.00	A-	3.67
Otter Tail Power	2	0.80	B++	3.67	B	3.00
PG&E Corp	3	0.70	B+	3.33	B	3.00
Pinnacle West Capital Corp	1	0.75	A+	4.33	B+	3.33
PNM Resources	3	0.80	B	3.00	B	3.00
Portland General Electric Co	2	0.80	B++	3.67	NR	
SCANA Corp	2	0.70	B++	3.67	A	4.00
Westar Energy, Inc.	2	0.75	B++	3.67	A-	3.67
Xcel Energy	1	0.65	A+	4.33	A-	3.67
Average	2.0	0.75	B++/A	3.83	B+	3.37

RISK INDICATORS

GROUP	VALUE LINE SAFETY	VALUE LINE BETA	VALUE LINE FIN STR	S & P STK RANK
S & P's 500 Composite	2.7	1.05	B++	B
Parcell Proxy Group	1.8	0.72	A	B+/A-
Ahern Proxy Group	2.0	0.75	B++/A	B+

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 reflects 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 later representing the highest level.

**ELECTRIC UTILITY COMPANIES RANKED BY SIZE
RISK INDICATORS**

COMPANY	CAP (\$000) Value Line	SAFETY	BETA	FIN STR	S&P STOCK RANKING S&P	S&P BOND RATING AUS	MOODY'S BOND RATING AUS
Otter Tail Corp	\$1,200,000	3	0.80	B++	B	BBB-	Baa2
Empire District Electric Company	\$1,500,000	2	0.70	B++	B+	A-	Baa1
El Paso Electric Co.	\$1,800,000	2	0.75	B++	B	BBB	Baa1
MGE Energy Inc.	\$1,800,000	1	0.70	A	A-	AA-	Aa2
Under \$2 Billion		2.0	0.74	B++	B+	BBB+/A-	A3
Avista Corp.	\$2,500,000	2	0.75	A	A-	A-	Baa1
PNM Resources	\$2,600,000	3	0.80	B	B	BBB	Baa2
ALLETE	\$2,900,000	2	0.75	A	A-	A-	A3
NorthWestern	\$2,900,000	3	0.70	B+	A+	NR	A3
Black Hills Corp.	\$3,000,000	2	0.90	A	B	BBB	A3/Baa1
Hawaiian Electric Industries, Inc.	\$3,500,000	2	0.75	A	B+	BBB-	Baa2
Portland General	\$3,500,000	2	0.80	B++	NR	A-	A3
IDACORP	\$3,700,000	2	0.80	A	A	A-	A3
Vectren	\$4,200,000	2	0.75	A	B+	A/A-	A2
Great Plains Energy Inc.	\$4,500,000	3	0.80	B+	B	BBB	Baa2
\$2 Billion to \$5 Billion		2.3	0.78	B++	B+/A-	BBB+	Baa-/A3
OGE Energy Corp.	\$6,200,000	2	0.95	A	A-	BBB+	A3
TECO Energy, Inc.	\$6,500,000	2	0.80	B++	B	BBB+/BBB	A3
ITC Holdings Corp.	\$6,900,000	2	0.70	B++	A+		
Westar Energy, Inc.	\$7,900,000	2	0.75	B++	A-	A-	A3/Baa1
Pinnacle West Capital Corp.	\$8,300,000	1	0.75	A+	B+	BBB	A3/Baa1
Alliant Energy	\$8,700,000	2	0.75	A	B+	A-	A2/A3
\$5 Billion to \$10 Billion		1.8	0.78	B++/A	B+/A-	BBB+	A3
CenterPoint Energy, Inc.	\$10,000,000	3	0.85	B+	B	A-/BBB+	A3/Baa1
SCANA Corp.	\$10,000,000	2	0.70	B++	A	BBB+	Baa1/Baa2
Ameren Corp.	\$12,000,000	2	0.75	A	B	BBB+/BBB	Baa1
CMS Energy Corp.	\$12,000,000	2	0.70	B++	B	BBB+/BBB	A3/Baa1
Entergy Corp.	\$14,000,000	3	0.70	B++	A-	BBB+/BBB	Baa2/Baa3
FirstEnergy Corp.	\$14,000,000	3	0.70	B+	B	BBB	Baa2
DTE Energy Company	\$17,000,000	2	0.70	B++	A-	A-/BBB+	A2/A3
Eversource Energy	\$18,000,000	1	0.75	A	A-	A-	A3/Baa1
WEC Energy Group	\$19,000,000	1	0.65	A+	A	A-/BBB+	A1/A2
\$10 Billion to \$20 Billion		2.1	0.72	B++	B+/A-	BBB+	Baa1/A3
Xcel Energy Inc.	\$21,000,000	1	0.65	A+	A-	A-	A3
Consolidated Edison, Inc.	\$22,000,000	1	0.55	A+	B+	A-/BBB+	A3
Edison International	\$23,000,000	2	0.70	A	B	BBB+	A2/A3
Public Service Enterprise Group, Inc.	\$23,000,000	1	0.75	A++	B+	A-/BBB+	A2
PPL Corp	\$26,000,000	2	0.70	B++	B+	A-	Baa1/Baa2
Sempra Energy	\$26,000,000	3	0.85	B++	B+	A/A-	A2/A3
PG&E Corp.	\$29,000,000	3	0.70	B+	B	BBB/BBB-	A3/Baa1
American Electric Power Company	\$32,000,000	2	0.70	A	A-	BBB/BBB-	Baa1
Exelon Corp.	\$32,000,000	3	0.65	B++	B	BBB+/BBB	Baa1
Dominion Resources	\$43,000,000	2	0.70	B++	B	A-	A3/Baa1
Southern Company	\$46,000,000	2	0.55	A	A-	A	A3/Baa1
Duke Energy Corp.	\$55,000,000	2	0.60	A	B	BBB+	A3
NextEra Energy, Inc.	\$55,000,000	2	0.70	A	A	A-/BBB+	A2/A3
\$20 Billion or Over		2.0	0.68	A	B+	BBB+/A-	A3

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission, <i>et. al.</i>	:	R-2016-2537349, <i>et al.</i>
v.	:	
Metropolitan Edison Company	:	
Pennsylvania Public Utility Commission, <i>et. al.</i>	:	R-2016-2537352, <i>et al.</i>
v.	:	
Pennsylvania Electric Company	:	
Pennsylvania Public Utility Commission, <i>et. at.</i>	:	R-2016-2537355, <i>et. al.</i>
v.	:	
Pennsylvania Power Company	:	
Pennsylvania Public Utility Commission, <i>et. al.</i>	:	R-2016-2537359, <i>et al.</i>
v.	:	
West Penn Power Company	:	

VERIFICATION

I, David C. Parcell, hereby state that the facts above set forth in my Direct Testimony, OCA Statement No. 2, are true and correct and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

Signature:


David C. Parcell

Consultant Address: Technical Associates, Inc.
1503 Santa Rosa Road, Suite 130
Richmond, Virginia 23229

DATED: July 22, 2016