

Exhibit No. \_\_\_ T (DCP-1T)  
Dockets UE-140762, et al.  
Witness: David C. Parcell

BEFORE THE WASHINGTON  
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,

Complainant,

v.

PACIFIC POWER & LIGHT  
COMPANY,

Respondent.

UE-140762 and UE-140617  
(consolidated)

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In the Matter of the Petition of

PACIFIC POWER & LIGHT  
COMPANY,

For an Order Approving Deferral of  
Costs Related to Colstrip Outage.

DOCKET UE-131384 (consolidated)

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In the Matter of the Petition of

PACIFIC POWER & LIGHT  
COMPANY,

For an Order Approving Deferral of  
Costs Related to Declining Hydro  
Generation.

DOCKET UE-140094 (consolidated)

TESTIMONY

OF

DAVID C. PARCELL

ON BEHALF OF THE STAFF OF WASHINGTON UTILITIES  
AND TRANSPORTATION COMMISSION

*Cost of Capital*

October 10, 2014

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Exhibit No. ___ (DCP-2)	Background and Experience Profile
Exhibit No. ___ (DCP-3)	PacifiCorp Total Cost of Capital
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Exhibit No. ___ (DCP-8)	Proxy Companies Basis for Selection
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Exhibit No. ___ (DCP-15)	PacifiCorp Rating Agency Ratios
Exhibit No. ___ (DCP-16)	Allowed Return on Equity and Common Equity Ratios for Electric Utilities in 2013

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 580, 9030 Stony Point Parkway,  
6 Richmond, Virginia 23235.

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 an M.B.A. (1985) from Virginia  
11 Commonwealth University. I have been a consulting economist with Technical  
12 Associates since 1970. 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 500 utility proceedings before about 50 regulatory  
15 agencies in the United States and Canada. I have previously filed testimony on behalf of  
16 Commission Staff in proceedings involving Puget Sound Energy and Avista Corp.  
17 Exhibit No. \_\_\_\_ (DCP-2) provides a more complete description of my education and  
18 relevant work experience.

19  
20 **Q. What is the purpose of your testimony in this proceeding?**

21 A. I have been retained by the Staff of the Washington Utilities and Transportation  
22 Commission ("Commission") to evaluate the cost of capital aspects of the current general  
23 rate case of Pacific Power & Light Company ("Pacific Power"), a division of PacifiCorp

1 (“PacifiCorp”). I have performed independent studies and I am making  
2 recommendations of the current cost of capital for PacifiCorp. In addition, since  
3 PacifiCorp is owned by Berkshire Hathaway Energy (“BHE”), I have also evaluated this  
4 entity in my analyses.

5  
6 **Q. Have you prepared any exhibits in support of your testimony?**

7 A. Yes. In addition to Exhibit No. \_\_\_\_ (DCP-2), identified above, I have prepared Exhibit  
8 Nos. \_\_\_\_ (DCP-3) through (DCP-16). These exhibits were prepared either by me or  
9 under my direction. The information contained in these exhibits is correct to the best of  
10 my knowledge and belief.

11  
12 **II. RECOMMENDATIONS AND SUMMARY**

13  
14 **Q. What are your recommendations in this proceeding?**

15 A. My overall cost of capital recommendations for PacifiCorp are shown on Exhibit No. \_\_\_\_  
16 (DCP-3) and are summarized below:

17

	<u>Percent</u>	<u>Cost</u>	<u>Return</u>
18 Long-Term Debt	50.62%	5.19%	2.63%
19 Preferred Stock	0.28%	6.75%	0.02%
Equity	49.10%	9.0-9.5%	4.42-4.66%
20 Total	100.0%		7.07-7.31%

21 PacifiCorp’s application requests a return on common equity of 10.0 percent and an  
22 overall rate of return of 7.67 percent. I propose a return on common equity of 9.0 percent  
23 and an overall rate of return of 7.07 percent.

1 **Q. Please summarize your cost of capital analyses and related conclusions for**  
2 **PacifiCorp.**

3 A. This proceeding is concerned with PacifiCorp's regulated electric utility operations in  
4 Washington. My analyses address the Company's total cost of capital. The first step in  
5 performing an analysis of the Company's cost of capital is the development of the  
6 appropriate capital structure. PacifiCorp's proposed capital structure is its five-quarter  
7 average capital structure ending December 31, 2014. I do not employ this capital  
8 structure in my analyses. Instead, I utilize the same capital structure used by the  
9 Commission in the last two rate proceedings of PacifiCorp.

10 The second step in a cost of capital calculation is a determination of the embedded  
11 costs of debt and preferred stock. PacifiCorp's application uses a cost of 5.19 percent for  
12 long-term debt and 6.75 percent cost of preferred stock, which reflect its December 31,  
13 2014 cost rates. I use these rates in my analyses.

14 The third step in the cost of capital calculation is the estimation of the cost of  
15 common equity. I have employed three recognized methodologies to estimate the cost of  
16 equity for PacifiCorp. Each of these methodologies is applied to two groups of proxy  
17 utilities. The first group is compiled of publicly-traded electric utilities (or holding  
18 companies) that I have selected based on operating and risk characteristics that are  
19 similar to PacifiCorp. The second group is the electric utilities sample group used by  
20 PacifiCorp witness Strunk in his analyses. These three methodologies and my findings  
21 are:

Methodology	Range	Mid-Point
Discounted Cash Flow	8.75-9.25%	9.0%
Capital Asset Pricing Model	7.2-7.4%	7.3%
Comparable Earnings	9.0-10.0%	9.5%

1 Based upon these findings, I conclude that the cost of common equity for PacifiCorp is  
2 within a range of 9.0 percent to 9.50 percent (9.25 percent mid-point). This range  
3 incorporates the respective mid-points of the DCF and CE analyses. I recommend a  
4 return at the low end of this range, or 9.0 percent, in order to reflect the lower risk of  
5 PacifiCorp relative to the two proxy groups.

6 Combining these three steps into a weighted cost of capital results in an overall  
7 cost of capital range of 7.07 percent to 7.31 percent. My recommended 9.0 percent cost  
8 of equity results in an overall cost of capital of 7.07 percent.

### 9 10 **III. ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES**

11  
12 **Q. What are the primary economic and legal principles that establish the standards for**  
13 **determining a fair rate of return for a regulated utility?**

14 **A.** Public utility rates are normally established in a manner designed to allow the recovery of  
15 their costs, including capital costs. This is frequently referred to as “cost of service”  
16 ratemaking. Rates for regulated public utilities traditionally have been primarily  
17 established using the “rate base–rate of return” concept. Under this method, utilities are  
18 allowed to recover a level of operating expenses, taxes, and depreciation deemed  
19 reasonable for rate-setting purposes, and are granted an opportunity to earn a fair rate of  
20 return on the assets that are used and useful (i.e., rate base) in providing service to their  
21 customers.

22 The rate base is derived from the asset side of the utility’s balance sheet as a  
23 dollar amount and the rate of return is developed from the liabilities/owners’ equity side

1 of the balance sheet as a percentage. The revenue impact of the cost of capital is thus  
2 derived by multiplying the rate base by the rate of return (including income taxes).

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

7 Technically, "fair rate of return" is a legal and accounting concept that refers to an  
8 *ex post* (after the fact) earned return on an asset base, while the cost of capital is an  
9 economic and financial concept which refers to an *ex ante* (before the fact) expected or  
10 required return on a liability base. In regulatory proceedings, however, the two terms are  
11 often used interchangeably, as I do in my testimony.

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

17 Although I am not a lawyer and I do not offer a legal opinion, my testimony is  
18 based on my understanding that two United States Supreme Court decisions provide the  
19 main standards for a fair rate of return. The first decision is *Bluefield Water Works and*  
20 *Improvement Co. v. Public Serv. Comm'n of West Virginia*, 262 U.S. 679 (1923). In this  
21 decision, the Court stated:

22 What annual rate will constitute **just compensation** depends upon many  
23 circumstances and must be **determined by the exercise of fair and**  
24 **enlightened judgment**, having regard to all relevant facts. A public  
25 utility is entitled to such rates as will permit it to **earn a return** on the



1 value of the property which it employs for the convenience of the public  
2 equal to that **generally being made** at the same time and in the same  
3 general part of the country on **investments in other business**  
4 **undertakings** which are **attended by corresponding risks and**  
5 **uncertainties**; but it has no **constitutional right to profits** such as are  
6 realized or anticipated in **highly profitable enterprises or speculative**  
7 **ventures**. The **return** should be reasonably sufficient to assure  
8 confidence in the **financial soundness** of the utility, and should be  
9 adequate, **under efficient and economical management**, to maintain and  
10 **support its credit** and **enable it to raise the money** necessary for the  
11 proper discharge of its public duties. A rate of return may be reasonable at  
12 one time, and become too high or too low by changes affecting  
13 opportunities for investment, the money market, and business conditions  
14 generally. (Emphasis added.)  
15

16 It is my understanding that the *Bluefield* decision established the following standards for  
17 a fair rate of return: comparable earnings, financial integrity, and capital attraction. It  
18 also noted the changing level of required returns over time as well as an underlying  
19 assumption that the utility be operated in an efficient manner.

20 The second decision is *Federal Power Comm'n v. Hope Natural Gas Co.*, 320  
21 U.S. 591 (1942). In that decision, the court stated:

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

34 The *Hope* case is also frequently credited with establishing the "end result" doctrine,  
35 which maintains that the methods utilized to develop a fair return are not as important as  
36 long as the end result is reasonable.

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 regulation is intended to act  
8           as a surrogate for competition.

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

11 **A.**   Neither the courts nor economic/financial theory have developed exact and mechanical  
12       procedures for precisely determining the cost of capital. This is the case because the cost  
13       of capital is an opportunity cost and is prospective-looking, which dictates that it must be  
14       estimated.

15           There are several useful models that can be employed to assist in estimating the  
16       cost of equity capital, which is the capital structure item that is the most difficult to  
17       determine. These include the Discounted Cash Flow (“DCF”), Capital Asset Pricing  
18       Model (“CAPM”), Comparable Earnings (“CE”) and Risk Premium (“RP”) methods.  
19       Each of these methods (or models) differs from the others and each, if properly  
20       employed, can be a useful tool in estimating the cost of common equity for a regulated  
21       utility.

1 **Q. Which methods have you employed in your analyses of the cost of common equity in**  
2 **this proceeding?**

3 A. I have utilized three methodologies to determine PacifiCorp's cost of common equity:  
4 the DCF, CAPM, and CE methods. For reasons I will explain later in my testimony, I  
5 have not strictly employed a RP model in my analyses, although, as I indicate later, my  
6 CAPM analysis is a form of the RP methodology. Each of these methodologies will be  
7 described in more detail in my testimony that follows.

8

9 **IV. GENERAL ECONOMIC CONDITIONS**

10

11 **Q. Are economic and financial conditions important in determining the cost of capital**  
12 **for a public utility?**

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

- 17 • The level of economic activity (i.e., growth rate of the economy);
- 18 • The stage of the business cycle (i.e., recession, expansion, or transition);
- 19 • The level of inflation;
- 20 • The level and trend of interest rates; and
- 21 • Expected economic conditions.

22 My understanding is that this position is consistent with the *Bluefield* decision that  
23 noted “[a] rate of return may be reasonable at one time and become too high or too low

1 by changes affecting opportunities for investment, the money market, and business  
2 conditions generally.” *Bluefield*, 262 U.S. at 693.

3  
4 **Q. What indicators of economic and financial activity did you evaluate in your**  
5 **analyses?**

6 A. I examined several sets of economic statistics from 1975 to the present. I chose such a  
7 relatively long time period because it permits the evaluation of economic conditions over  
8 four full business cycles, allowing for an assessment of changes in long-term trends.  
9 Consideration of economic/financial conditions over a relatively long period of time  
10 allows me to assess how such conditions have had impacts on the level and trends of the  
11 cost of capital. This period also approximates the beginning and continuation of active  
12 rate case proceedings initiated by public utilities, which generally began in the mid-  
13 1970s.

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

19  
20 **Q. Please describe the timeframe of the four prior business cycles and the current**  
21 **cycle.**

22 A. The four prior complete cycles and current cycle cover the following periods:  
23

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

Source: National Bureau of Economic Research, "Business Cycle Expansions and Contractions"

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

A. Yes, I do. Until the end of 2007, the United States economy had for the most part enjoyed general prosperity and stability since the early 1980s.<sup>1</sup> 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 bankruptcy of national companies such as Circuit City and automotive manufacturers Chrysler and General Motors.

<sup>1</sup> There was a so-called "Tech Bubble" in 1999-2000, in which prices of many technology stocks encountered a dramatic run-up that was followed by an equally dramatic decline in 2001-2002.

1 This decline has been described as the worst financial crisis since the Great  
2 Depression and has been referred to as the “Great Recession.” Since 2008, the United  
3 States and other countries have implemented and continue to implement unprecedented  
4 actions to attempt to correct or minimize the scope and effects of this recession.

5 The recession reached its low point in mid-2009 and the economy has since begun  
6 to expand again, although at a slow and uneven rate.<sup>2</sup> However, the length and severity  
7 of the recession, as well as a relatively slow and uneven recovery, indicates that the  
8 impacts of the recession have been and will be felt for an extended period of time.

9  
10 **Q. Please describe recent and current economic and financial conditions and their**  
11 **impact on the cost of capital.**

12 A. It is apparent from the discussion that follows that one impact of the Great Recession has  
13 been a reduction in actual and expected investment returns and a corresponding reduction  
14 in the costs of capital. This decline is evidenced by a reduction in both short-term and  
15 long-term interest rates and in cost of equity model results emanating from the DCF,  
16 CAPM and CE. It is also evident, as described in a later section, that regulatory agencies  
17 throughout the United States, have recognized the decline in capital costs by authorizing  
18 lower returns on common equity for regulated utilities.

19 Exhibit No. \_\_\_\_ (DCP-4) shows several sets of relevant economic and financial  
20 statistics for the cited time periods. Pages 1 and 2 contain general macroeconomic  
21 statistics; pages 3 and 4 show interest rates; and pages 5 and 6 contain equity market  
22 statistics.

---

<sup>2</sup> The U.S. Economy, as measured by changes in Gross Domestic Product (“GDP”), declined in the first quarter of 2014.

1           Pages 1 and 2 show that 2007 was the sixth year of an economic expansion but, as  
2 I previously noted, the economy subsequently entered a significant decline, as indicated  
3 by the growth in real (i.e., adjusted for inflation) Gross Domestic Product (“GDP”),  
4 industrial production, and an increase in the unemployment rate. This recession lasted  
5 until mid-2009, making it a longer-than-normal recession, as well as a much deeper-than-  
6 normal recession. Since then, economic growth has been erratic and slower than the  
7 initial periods of prior expansions.

8           Pages 1 and 2 also show the rate of inflation. As reflected in the Consumer Price  
9 Index (“CPI”), inflation rose significantly during the 1975-1982 business cycle and  
10 reached double-digit levels in 1979-1980. The rate of inflation has declined substantially  
11 since 1981. Since 2008, the CPI has been 3 percent or lower; in 2013 it was as low as 1.5  
12 percent. It is thus apparent that the rate of inflation has generally been declining over the  
13 past several business cycles. Current levels of inflation are at the lowest levels of the past  
14 35 years, which is reflective of lower capital costs.<sup>3</sup>

15  
16 **Q.   What have been the trends in interest rates over the four prior business cycles and**  
17 **at the current time?**

18 A.   Pages 3 and 4 show several series of interest rates. Rates rose sharply to record levels in  
19 1975-1981 when the inflation rate was high and generally rising. Interest rates declined  
20 substantially in conjunction with inflation rates during the remainder of the 1980s and  
21 throughout the 1990s and 2000s.

---

<sup>3</sup> 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            Since 2008, the Federal Reserve has maintained the Federal Funds rate (i.e., short-  
2 term rate) at 0.25 percent, an all-time low. The Federal Reserve has also purchased U.S.  
3 Treasury securities to stimulate the economy.<sup>4</sup> As seen on pages 3 and 4, in 2012 both  
4 U.S. and utility bond yields declined to their lowest levels in the past four business cycles  
5 and in more than 35 years. Interest rates rose somewhat from those lows in 2013, but  
6 have again declined over the past several months. Even with the 2013 increases, both  
7 government and utility lending rates remain at historically low levels, again reflective of  
8 lower capital costs.

9  
10 **Q.    What does Exhibit No. \_\_\_ (DCP-4) show for trends of common share prices?**

11 A.    Pages 5 and 6 show several series of common stock prices and ratios. These indicate that  
12 stock prices were essentially stagnant during the high inflation/high interest rate  
13 environment of the late 1970s and early 1980s. The 1983-1991 business cycle and the  
14 more recent cycles witnessed a significant upward trend in stock prices. The beginning  
15 of the recent financial crisis saw stock prices decline precipitously, as stock prices in  
16 2008 and early 2009 were down significantly from peak 2007 levels, reflecting the  
17 financial/economic crisis. Beginning in the second quarter of 2009, prices have  
18 recovered substantially and have ultimately reached and exceeded the levels achieved  
19 prior to the “crash.”

20  

---

<sup>4</sup> This is referred to as Quantitative Easing (“QE”), in which the FED initially purchased some \$85 billion of U.S. Treasury Securities per month in order to stimulate the economy. The FED has recently announced its intention to “taper” its purchase of U.S. Treasury securities through October of 2014.



1 **Q. What conclusions do you draw from your discussion of economic and financial**  
2 **conditions?**

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

16  
17 **Q. How do these economic/financial conditions impact the determination of the cost of**  
18 **capital for regulated utilities?**

19 A. The costs of capital for regulated utilities have declined in recent years. For example, the  
20 current debt costs that utilities pay on new debt is near the low point of the last several  
21 decades. In addition, it is apparent that the results of the traditional cost of equity models  
22 (i.e., DCF, CAPM, CE) are lower than was the case prior to the Great Recession. In light

---

<sup>5</sup> The 2014 increase in Social Security benefits is 1.5 percent – near an all-time low.

1 of this, it is not surprising that the average cost of equity authorized by state regulatory  
2 agencies has continued to decline into 2014, as shown in a later section of my testimony.

3  
4 **V. PACIFICORP'S OPERATIONS AND BUSINESS RISKS**

5  
6 **Q. Please describe PacifiCorp and its operations.**

7 A. PacifiCorp is a regulated electric utility that generates, transmits and distributes  
8 electricity to customers in Washington. Pacific Power is a division of PacifiCorp and  
9 operates as a "trade name" of PacifiCorp in Washington, California and Oregon.  
10 PacifiCorp also operates in Utah, Wyoming and Idaho under the "trade name" of Rocky  
11 Mountain Power. Prior to March 21, 2006, PacifiCorp was owned by ScottishPower.

12  
13 **Q. Please describe PacifiCorp's ownership structure.**

14 A. As noted above, Pacific Power is a division of PacifiCorp, which is an indirect subsidiary  
15 of BHE.<sup>6</sup> BHE's other U.S. utility subsidiaries are:

16 Nevada Power;  
17 Sierra Pacific Power;  
18 Mid-American Energy;  
19 Northern Natural Gas;  
20 Kern River Pipeline; and  
21 Mid-American Transmission.

22  
23 In 2013, 89 percent of BHE's operating income was generated by rate-regulated  
24 businesses.

---

<sup>6</sup> BHE was previously named Mid-American Energy Holding Company.

1 BHE also has several other subsidiaries. The major non-U.S. subsidiaries are:

2 Northern Powergrid Holdings (United Kingdom);  
3 MidAmerican Renewables, LLC;  
4 CalEnergy Philippines;  
5 MidAmerica Transmission; and  
6 Home Services of America, Inc.  
7

8 **Q. What are the current security ratings of Pacific Power and PacifiCorp?**

9 A. Pacific Power, as a division of PacifiCorp, does not issue its own securities directly to  
10 investors, but rather is a component of PacifiCorp. It follows that Pacific Power does not  
11 have rated securities. The current ratings of PacifiCorp are as follows:

12

<u>Rating Agency</u>	<u>Senior Unsecured</u>	<u>Senior Secured</u>
Moody's	A3	A1
S&P	A-	A
Fitch	BBB+	A-

13  
14  
15  
16  
17 (Source: Response to UTC Data Request 21)

18

19 **Q. What have been the recent trends in PacifiCorp's debt ratings?**

20 A. This is shown on Exhibit No. \_\_\_ (DCP-5). PacificCorp's debt has been rated in the  
21 "Single A" category by all three rating agencies since at least 2000.  
22

23 **Q. How do the bond ratings of PacifiCorp compare to other electric utilities?**

24 A. As I indicated in a previous answer, PacifiCorp has single A bond ratings on its senior  
25 debt, which are investment grade (i.e., Triple-B or above). Of the 50 electric utilities and

1 combination gas and electric utilities covered by AUS Utility Reports, the following  
2 numbers of bond ratings currently exist:

3	Moody's	Number of	S&P	Number of
4	Rating	Companies	Rating	Companies
5	Aa2	1	AA-	1
	A1*	1	A+	--
6	A2	7	A*	3
	A3	19	A-	18
7	Baa1	12	BBB+	11
	Baa2	7	BBB	10
8	Baa3	--	BBB-	2
	Ba or less	--	BB	--
9	NR	3	NR	4

\* PacifiCorp's ratings.

10  
11 This comparison indicates that PacifiCorp's ratings are above the common rating  
12 categories of most electric utilities. This is indicative of a lower financial risk for  
13 PacifiCorp.

## 14 15 VI. CAPITAL STRUCTURE

16  
17 **Q. What is the importance of determining a proper capital structure in a regulatory**  
18 **framework?**

19 A. A utility's capital structure is important because the concept of rate-base, rate-of-return  
20 regulation requires that a utility's capital structure be determined and utilized in  
21 estimating the total cost of capital. Within this framework, it is proper to ascertain  
22 whether the utility's capital structure is appropriate relative to its level of business risk  
23 and relative to other utilities.

1 As discussed in Section III of my testimony, the purpose of determining the  
2 proper capital structure for a utility is to help ascertain its capital costs. The rate-base  
3 rate-of-return concept recognizes the assets employed in providing utility services and  
4 provides for a return on these assets by identifying the liabilities and common equity (and  
5 their cost rates) used to finance the assets. In this process, the rate base is derived from  
6 the asset side of the balance sheet and the cost of capital is derived from the  
7 liabilities/owners' equity side of the balance sheet. The inherent assumption in this  
8 procedure is that the dollar values of the capital structure and the rate base are  
9 approximately equal and the former is utilized to finance the latter.

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

15  
16 **Q. Have you evaluated the capital structure of PacifiCorp and BHE?**

17 **A.** Yes. I have examined the five year historic (2009-2013) capital structure ratios of  
18 PacifiCorp and BHE. These are shown on Exhibit No. \_\_\_ (DCP-6). I have summarized  
19 below the common equity ratios for PacifiCorp since March 31, 2006; i.e., time of merger  
20 with BHE. These are seen to be as follows:

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18  
19

Year	PacifiCorp	
	Incl. S-T	Excl. S-T
	Debt	Debt
03/31/06	48.8%	51.3%
2006	48.4%	51.4%
2007	49.2%	51.2%
2008	51.1%	52.1%
2009	50.7%	50.7%
2010	53.1%	53.2%
2011	51.3%	53.9%
2012	52.5%	52.6%
2013	53.2%	53.2%

This indicates that PacifiCorp's equity ratio was 49 percent or less (including short-term debt) at the time of its purchase by BHE and remained below 49 percent until 2008.

Page 2 shows BHE's equity ratios over the past five years:

Year	Berkshire Hathaway Energy	
	Incl. S-T	Excl. S-T
	Debt	Debt
2009	38.7%	38.9%
2010	40.0%	40.4%
2011	41.4%	42.5%
2012	42.1%	43.2%
2013	36.7%	36.9%

Page 3 of Exhibit No. \_\_\_\_ (DCP-6) reflects the 2013 capital structure ratios of PacifiCorp and the other utility subsidiaries of BHE. As is shown there, this indicates that PacifiCorp has the highest equity ratio of BHE's electric subsidiaries.

1 Q. How do PacifiCorp's actual capital structures compare to those of investor-owned  
2 electric utilities?

3 A. Exhibit No. \_\_\_ (DCP-7) shows the common equity ratios (including short-term debt in  
4 capitalization) for the two groups of electric utilities covered by AUS Utility Reports.

5 These are:

6

7	Year	Electric	Combination Gas And Electric
8	2009	46%	45%
9	2010	46%	46%
10	2011	47%	46%
11	2012	47%	46%
12	2013	48%	47%

(Source: AUS Utility Reports)

11

12 These equity ratios are lower than those of PacifiCorp.

13 In addition, Exhibit No. \_\_\_ (DCP-8) indicates that the 2013 average common  
14 equity ratio (including short-term debt) is 49 percent for my proxy group and 46 percent  
15 for PacifiCorp witness Strunk's proxy group.

16

17 Q. What capital structure is PacifiCorp requesting?

18 A. PacifiCorp is proposing the following capital structure ratios, which reflect a "five-  
19 quarter average spanning the 12 months ending December 31, 2014 (per testimony of

20 PacifiCorp witness Williams):

21

22	Short-Term Debt	0.19%
23	Long-Term Debt	48.06%
24	Preferred Stock	0.02%
25	Common Equity	51.73%

1 This proposed capital structure contains a higher common equity ratio than the structure  
2 recognized by the Commission in recent general rate cases (i.e., 49.1 percent). It is also  
3 higher than the average common equity ratios of publicly-traded combination electric/gas  
4 utilities, as well as the respective proxy groups utilized by myself and Mr. Strunk.

5  
6 **Q. What capital structure should the Commission use to develop PacifiCorp's cost of  
7 capital in this proceeding?**

8 A. I recommend that the Commission use the same capital structure ratios adopted in prior  
9 cases, which is 49.1 percent common equity. This 49.1 percent common equity ratio is  
10 similar to that of the industry-wide electric and combination electric utilities I just cited.  
11 I note that the Commission again evaluated and recognized the appropriateness of this  
12 capital structure very recently in PacifiCorp's last general rate proceeding, which was  
13 decided in December of 2013.

14  
15 **Q. What is your understanding of this Commission's recent policy on the proper  
16 capital structure to use to determine the cost of capital?**

17 A. It is my understanding that the Commission's policy on determining a capital structure  
18 balances safety (the preservation of investment quality credit ratings and access to  
19 capital) against economy (the lowest overall cost to attract and maintain capital). *WUTC*  
20 *v. Puget Sound Energy, Inc.*, Dockets UE-040640 and UG-040641, Order 06, at ¶27  
21 (February 18, 2005). The Commission noted that the appropriate capital structure can  
22 either be the Company's historical capital structure, the projected capital structure, or a  
23 hypothetical capital structure.



1 **Q. Is your recommended capital structure consistent with this policy?**

2 A. Yes. The capital structure that I use is similar to recent actual ratios and is consistent  
3 with the capital structure of other utilities. I also believe that the actual capital structure  
4 that I propose provides a “balance of safety and economy” as cited above.

5  
6 **Q. Please contrast your recommendation with that of PacifiCorp witness Williams.**

7 A. Mr. Williams proposes a capital structure that contains 51.73 percent common equity.  
8 This 51.73 percent common ratio exceeds the 49.1 percent common equity ratios  
9 approved by the Commission in several recent rate proceedings of the Company.

10  
11 **Q. Are you proposing to include short-term debt in PacifiCorp’s capital structure?**

12 A. No, I am not. I am aware that Commission Staff has, in prior cases, proposed to include  
13 short-term debt in PacifiCorp’s capital structure. I note that I generally agree with this  
14 position. On the other hand, I am also aware that the Commission, in approving a  
15 hypothetical capital structure with 49.1 percent common equity in PacifiCorp’s last  
16 proceeding (Order 05 in Docket UE-130043), indicated that “we continue to be  
17 concerned about PacifiCorp’s relatively spare and infrequent use of the lowest cost form  
18 of capital, short-term debt...” My reading of the Commission’s decision in that  
19 proceeding indicates that the Commission believes that its use of a 49.1 percent common  
20 equity component in a hypothetical capital structure (which contains a lower common  
21 equity ratio than the company’s actual capital structure) gives consideration to the effects  
22 of including short-term debt. As a result, I am not proposing to include short-term debt in  
23 my cost of capital recommendations in this proceeding.

1 I again note that my capital structure proposal is consistent with the capital  
2 structure utilized in PacifiCorp's last three rate proceedings. As noted above, I have  
3 correspondingly not focused on the actual levels or percentages of short-term debt  
4 employed by PacifiCorp.

5  
6 **Q. What are the costs of debt and preferred stock of PacifiCorp?**

7 A. The Company's filing utilizes a cost of long-term debt of 5.19 percent and a cost of  
8 preferred stock of 6.75 percent – the costs as of December 21, 2014.

9  
10 **VII. SELECTION OF PROXY GROUPS**

11  
12 **Q. How have you estimated the cost of common equity for PacifiCorp?**

13 A. PacifiCorp is not publicly-traded. Consequently, it is not possible to directly apply cost  
14 of equity models to this entity. BHE is also not publicly-traded. As a result, it is  
15 generally preferred to analyze groups of comparison or "proxy" companies as a substitute  
16 for PacifiCorp to determine its cost of common equity.

17 I have examined two such groups for comparison of PacifiCorp. I selected one  
18 group of electric utilities using the criteria listed on Exhibit No. \_\_\_ (DCP-8). These  
19 criteria are as follows:

- 20 (1) Market "cap" of \$5 billion to \$15 billion;  
21 (2) Electric revenues 50% or greater;  
22 (3) Common equity ratio 40% or greater;  
23 (4) Value Line Safety of 1 or 2;

- 1 (5) S&P stock ranking of A or B;
- 2 (6) Moody's or S&P's bond ratings of A; and
- 3 (7) Currently pays dividends, and has not reduced dividends in past
- 4 five years.

5 Second, I have conducted studies of the cost of equity for the same electric

6 utilities proxy group that was selected by PacifiCorp witness Strunk.

7

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

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

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

11 conclusions and recommendations, in turn, are based upon the results of both proxy

12 groups.

13

14 **VIII. DISCOUNTED CASH FLOW ANALYSIS**

15

16 **Q. What is the theory and methodological basis of the discounted cash flow model?**

17 A. The discounted cash flow ("DCF") model is one of the oldest, as well as the most

18 commonly-used, models for estimating the cost of common equity for public utilities.

19 The DCF model is based on the "dividend discount model" of financial theory, which

20 maintains that the value (price) of any security or commodity is the discounted present

21 value of all future cash flows.

22 The most common variant of the DCF model assumes that dividends are expected

23 to grow at a constant rate. This variant of the dividend discount model is known as the

1 constant growth or Gordon DCF model. In this framework cost of capital is derived by  
2 the following formula:

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

3  
4 where: K = discount rate (cost of capital)

5 P = current price (\$)

6 D = current annual dividend (\$)

7 g = constant rate of expected growth (%)

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

11  
12 **Q. Please explain how you have employed the DCF model.**

13 A. I have utilized the constant growth DCF model. In doing so, I have combined the current  
14 dividend yield for the groups of proxy utility stocks described in the previous section  
15 with several indicators of expected dividend growth.

16  
17 **Q. How did you derive the dividend yield component of the DCF equation?**

18 A. There are several methods that can be used for calculating the dividend yield component.  
19 These methods generally differ in the manner in which the dividend rate is employed;  
20 i.e., current versus future dividends, or annual versus quarterly compounding of  
21 dividends. I believe the most appropriate dividend yield component is the version listed  
22 below:

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

1  
2 This dividend yield component recognizes the timing of dividend payments and dividend  
3 increases (i.e., time value of money).

4 The  $P_0$  in my yield calculation is the average (of high and low) stock price for  
5 each proxy company for the most recent three month period (July-September, 2014). The  
6  $D_0$  is the current annualized dividend for each proxy company.

7  
8 **Q. Does your dividend yield calculation incorporate the “time value of money”?**

9 A. Yes, it does. By increasing the current “raw” yield (i.e., current annualized dividends  
10 divided by current stock prices) by one-half of the expected growth rate, the “next-  
11 period” dividend rate is utilized and I have thus reflected the time value of money in my  
12 yield calculation.

13 I also note that the DCF model itself is a time value concept. The “K” value in  
14 the DCF equation represents the “discounted value” of all future cash flows (i.e.,  
15 “discounted cash flow” model), which is a measure of the time value of money.

16  
17 **Q. How have you estimated the dividend growth component of the DCF equation?**

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

1 every investment decision resulting in the purchase of a particular stock is matched by  
2 another investment decision to sell that stock. Obviously, since two investors reach  
3 different decisions at the same market price, their expectations differ.

4 A wide array of indicators exists for estimating the growth expectations of  
5 investors. As a result, it is evident that no single indicator of growth is always used by all  
6 investors. It therefore is necessary to consider alternative indicators of dividend growth  
7 in deriving the growth component of the DCF model.

8 I have considered five indicators of growth in my DCF analyses. These are:

- 9 1. 2009-2013 (5-year average) earnings retention, or fundamental growth  
10 (per Value Line);
- 11 2. 5-year average of historic growth in earnings per share (“EPS”), dividends  
12 per share (“DPS”), and book value per share (“BVPS”) (per Value Line);
- 13 3. 2014, 2015 and 2017-2019 projections of earnings retention growth (per  
14 Value Line);
- 15 4. 2011-2013 to 2017-2019 projections of EPS, DPS, and BVPS (per Value  
16 Line); and
- 17 5. 5-year projections of EPS growth (per First Call).

18 I believe this diverse combination of growth indicators is a representative and  
19 appropriate set with which to begin the process of estimating investor expectations of  
20 dividend growth for the groups of proxy companies. I also believe that these growth  
21 indicators reflect the types of information that investors consider in making their  
22 investment decisions. As I indicated previously, investors have an array of information

1 available to them, all of which should be expected to have some impact on their decision-  
2 making process.

3  
4 **Q. Please describe your DCF calculations.**

5 A. Exhibit No. \_\_\_ (DCP-9) presents my DCF analysis. Page 1 shows the calculation of the  
6 “raw” (i.e., prior to adjustment for growth) dividend yield for each proxy company.  
7 Pages 2 and 3 show the various growth rates for the groups of proxy companies. Page 4  
8 shows the DCF calculations, which are presented on several bases: mean, median, and  
9 low/high values. These results can be summarized as follows:

10

	<u>Mean</u>	<u>Median</u>	<u>Mean Low<sup>7</sup></u>	<u>Mean High<sup>8</sup></u>	<u>Median Low<sup>8</sup></u>	<u>Median High<sup>9</sup></u>
Proxy Group	8.7%	8.4%	7.9%	9.9%	7.0%	9.0%
Strunk Group	8.5%	8.4%	7.7%	9.2%	7.4%	8.6%

11  
12  
13 I note that the individual DCF calculations shown on Exhibit No. \_\_\_ (DCP-9)  
14 should not be interpreted to reflect the expected cost of capital for the proxy groups;  
15 rather, the individual values shown should be interpreted as alternative information  
16 considered by investors.

17 The results in Exhibit No. \_\_\_ (DCP-9) indicate average (mean and median) DCF  
18 cost rates of 8.4 percent to 8.7 percent. The “high” DCF rates (i.e., using the highest  
19 growth rates only) are 8.6 percent and 9.9 percent on an average basis and median basis.

20  

---

<sup>7</sup> Using only the lowest growth rate.

<sup>8</sup> Using only the highest growth rate.

1 **Q. What do you conclude from your DCF analyses?**

2 A. This analysis reflects a broad DCF range of 8.4 percent to 9.9 percent for the proxy  
3 groups. This is approximated by the average/mean value and high values for the proxy  
4 groups examined in the previous analysis. I give less weight to the low values and  
5 average values of the groups, as well as the highest DCF cost (i.e., 9.9 percent, which  
6 primarily reflects a single growth rate [12.0%] of a single company [Wisconsin Energy]).  
7 I believe that 8.75 percent to 9.25 percent (9.0 percent mid-point) reflects the proper DCF  
8 cost for PacifiCorp. This primarily reflects the highest DCF results.

9

10 **Q. Why do you focus on the highest DCF rates?**

11 A. I focus on the highest DCF rates, as well as highest CE rates later in my testimony, in  
12 order to be conservative. Had I emphasized mean/median values, as other analysts might  
13 reasonably have done, my recommended cost of equity for PacifiCorp would have been  
14 lower.

15

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

17

18 **Q. Please describe the theory and methodological basis of the capital asset pricing**  
19 **model.**

20 A. The Capital Asset Pricing Model ("CAPM") is a version of the risk premium method.  
21 The CAPM describes and measures the relationship between a security's investment risk  
22 and its market rate of return. The CAPM was developed in the 1960s and 1970s as an



1 extension of modern portfolio theory ("MPT"), which studies the relationships among  
2 risk, diversification, and expected returns.

3

4 **Q. How is the CAPM derived?**

5 A. The general form of the CAPM is:

6 
$$K = R_f + \beta(R_m - R_f)$$

7 where: K = cost of equity

8  $R_f$  = risk free rate

9  $R_m$  = return on market

10  $\beta$  = beta

11  $R_m - R_f$  = market risk premium

12 As noted previously, the CAPM is a variant of the risk premium method. I  
13 believe the CAPM is generally superior to the simple risk premium method because the  
14 CAPM specifically recognizes the risk of a particular company or industry (i.e., beta),  
15 whereas the simple risk premium method assumes the same risk premium for all  
16 companies exhibiting similar bond ratings.

17

18 **Q. What groups of companies have you utilized to perform your CAPM analyses?**

19 A. I have performed CAPM analyses for the same two groups of proxy utilities evaluated in  
20 my DCF analyses.

21

1 **Q. Please explain the risk-free rate as used in your CAPM and indicate what rate you**  
2 **employed.**

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

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

8 I have performed CAPM calculations using the most recent three-month average  
9 yield (July-September, 2014) for 20-year U.S. Treasury bonds. I used 20-year U.S.  
10 Treasury bonds yields since this is the maturity level employed by the MorningStar  
11 source used, in part, to develop the market risk premium. Over this three-month period,  
12 these bonds had an average yield of 3.01 percent.

13

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

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

20

21 **Q. How did you estimate the market risk premium component in your CAPM analysis?**

22 A. The market risk premium component ( $R_m - R_f$ ) represents the investor-expected premium  
23 of common stocks over the risk-free rate, or government bonds. For the purpose of

1 estimating the market risk premium, I considered alternative measures of returns of the  
2 S&P 500 (a broad-based group of large U.S. companies) and 20-year U.S. Treasury  
3 bonds.

4 First, I have compared the actual annual returns on equity of the S&P 500 with the  
5 actual annual yields of U.S. Treasury bonds. Exhibit No. \_\_\_ (DCP-10) shows the return  
6 on equity for the S&P 500 group for the period 1978-2013 (all available years reported  
7 by S&P). This schedule also indicates the annual yields on 20-year U.S. Treasury bonds,  
8 as well as the annual differentials (i.e., risk premiums) between the S&P 500 and U.S.  
9 Treasury 20-year bonds. Based upon these returns, I conclude that this version of the risk  
10 premium is about 6.75 percent.

11 I have also considered the total returns (i.e., dividends/interest plus capital  
12 gains/losses) for the S&P 500 group as well as for long-term (20-year) government  
13 bonds, as tabulated by MorningStar (formerly Ibbotson Associates), using both arithmetic  
14 and geometric means. I have considered the total returns for the entire available 1926-  
15 2013 period, which are as follows:

	<u>S&amp;P 500</u>	<u>L-T Gov't Bonds</u>	<u>Risk Premium</u>
Arithmetic	12.1%	5.9%	6.2%
Geometric	10.1%	5.5%	4.6%

16  
17  
18  
19 I conclude from this that the expected risk premium is about 5.85 percent (i.e., average of  
20 all three risk premiums). I believe that a combination of arithmetic and geometric means  
21 is appropriate since investors have access to both types of means and, presumably, both  
22 types are reflected in investment decisions and thus stock prices and cost of capital.

1 Investors are routinely provided investment return rates using both arithmetic and  
2 geometric averages. I note, for example, that mutual funds report returns on a geometric  
3 basis. In addition, Value Line calculates both its historic and estimated EPS growth rates  
4 on a compound (i.e., geometric basis).

5  
6 **Q. What are your CAPM results?**

7 A. Exhibit No. \_\_\_ (DCP-11) shows my CAPM calculations. The results are:

	<u>Mean</u>	<u>Median</u>
Proxy Group	7.4%	7.4%
Strunk Group	7.2%	7.4%

8  
9  
10  
11 **Q. What is your conclusion concerning the CAPM cost of equity?**

12 A. The result of my CAPM analyses collectively indicates a cost of 7.2 percent to 7.4  
13 percent for the groups of proxy utilities. I conclude that the CAPM cost of equity for  
14 PacifiCorp is 7.2 percent to 7.4 percent.

15  
16 **X. COMPARABLE EARNINGS ANALYSIS**

17  
18 **Q. Please describe the basis of the CE methodology.**

19 A. The CE method is derived from the "corresponding risk" concept discussed in the  
20 *Bluefield* and *Hope* cases. This method is thus based upon the economic concept of  
21 opportunity cost. As previously noted, the cost of capital is an opportunity cost: the  
22 prospective return available to investors from alternative investments of similar risk.

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

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

12  
13 **Q. How do you apply the CE methodology in your analysis of PacifiCorp's common**  
14 **equity cost?**

15 A. I apply the CE methodology by examining realized returns on equity for the two groups  
16 of proxy electric utilities, as well as unregulated companies, and evaluating investor  
17 acceptance of these returns by reference to the resulting market-to-book ratios. In this  
18 manner it is possible to assess the degree to which a given level of return equates to the  
19 cost of capital. It is generally recognized for utilities that market-to-book ratios of greater  
20 than one (i.e., 100 percent) reflect a situation where a company is able to attract new  
21 equity capital without dilution (i.e., above book value). As a result, one objective of a  
22 fair cost of equity is the maintenance of stock prices at or above book value. There is no

1 regulatory obligation to set rates designed to maintain a market-to-book ratio  
2 significantly above one.

3 I further note that my CE analysis is based upon market data (through the use of  
4 market-to-book ratios) and is thus essentially a market test. As a result, my CE analysis  
5 is not subject to the criticisms occasionally made by some who maintain that past earned  
6 returns do not represent the cost of capital. In addition, my CE analysis also uses  
7 prospective returns and thus is not backward looking.  
8

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

10 A. My CE analysis considers the experienced equity returns of the proxy groups of utilities  
11 for the period 2002-2013 (i.e., the last 12 years). The CE analysis requires that I examine  
12 a relatively long period of time in order to determine trends in earnings over at least a full  
13 business cycle. Further, in estimating a fair level of return for a future period, it is  
14 important to examine earnings over a diverse period of time in order to avoid any undue  
15 influence from unusual or abnormal conditions that may occur in a single year or shorter  
16 period. Therefore, in forming my judgment of the current cost of equity, I focused on  
17 two prior periods: 2009-2013 (the current cycle) and 2002-2008 (the most recent  
18 complete business cycle). I have also considered prospective returns on equity for 2014,  
19 2015, and 2017-2019.  
20

1 **Q. Please describe your CE analysis.**

2 A. Exhibit Nos. \_\_\_ (DCP-12) and (DCP-13) contain summaries of experienced returns on  
3 equity for three groups of companies, while Exhibit No. \_\_\_ (DCP-14) presents a risk  
4 comparison of utilities versus unregulated firms.

5 Exhibit No. \_\_\_ (DCP-12) shows the earned returns on average common equity  
6 and market-to-book ratios for the groups of proxy utilities. These can be summarized as  
7 follows:

	Proxy Group	Strunk Group
Historic ROE		
Mean	9.4-10.1%	10.2-10.3%
Median	9.4-9.6%	9.8-10.1%
Historic M/B		
Mean	137-146%	147-149%
Median	133-135%	138-146%
Prospective ROE		
Mean	10.5-11.1%	10.2-10.5%
Median	9.5-10.0%	9.5-10.0%

14 These results indicate that historic returns of 9.4 percent to 10.3 percent (page 1 of  
15 Exhibit No. \_\_\_ (DCP-12)) have been adequate to produce market-to-book ratios of 133  
16 percent to 149 percent (page 2 of Exhibit No. \_\_\_ (DCP-12)) for the groups of utilities.  
17 Furthermore, projected returns on equity for 2014, 2015 and 2017-2019 are within a  
18 range of 9.5 percent to 11.1 percent for the utility groups. These relate to 2013 market-  
19 to-book ratios of 153 percent or greater (page 2 of Exhibit No. \_\_\_ (DCP-12)).

20  
21 **Q. Do you also review the earnings of unregulated firms?**

22 A. Yes. As an alternative, I also examined the S&P 500 Composite group. This is a well  
23 recognized group of firms that is widely utilized in the investment community and is

1 indicative of the competitive sector of the economy. Exhibit No. \_\_\_\_ (DCP-13) presents  
2 the earned returns on equity and market-to-book ratios for the S&P 500 group over the  
3 past twelve years (i.e., 2002-2013). As this schedule indicates, over the two business  
4 cycle periods, this group's average earned returns ranged from 12.4 percent to 13.6  
5 percent, with average market-to-book ratios ranging between 209 percent and 275  
6 percent.

7  
8 **Q. How can the above information be used to estimate PacifiCorp's cost of equity?**

9 A. The recent earnings of the proxy utilities and S&P 500 groups can be viewed as an  
10 indication of the level of return realized and expected in the regulated and competitive  
11 sectors of the economy. In order to apply these returns to the cost of equity for the proxy  
12 utilities, however, it is necessary to compare the risk levels of the electric utilities and the  
13 competitive companies. I do this in Exhibit No. \_\_\_\_ (DCP-14), which compares several  
14 risk indicators for the S&P 500 group and the electric utility groups. The information on  
15 page 2 of Exhibit No. \_\_\_\_ (DCP-14) indicates that the S&P 500 group is more risky than  
16 the electric proxy groups.

17  
18 **Q. What cost of equity is indicated by your CE analysis?**

19 A. Based on recent earnings and market-to-book ratios, my CE analysis indicates that the  
20 cost of equity for the proxy utilities is no more than 9.0 percent to 10.0 percent. Recent  
21 returns of 9.4 percent to 10.3 percent have resulted in market-to-book ratios of more than  
22 133 percent. Prospective returns of 9.5 percent to 11.1 percent have been accompanied  
23 by most recent market-to-book ratios over 150 percent. As a result, it is apparent that



1 authorized returns below this level would continue to result in market-to-book ratios of  
2 well above 100 percent. As I indicated earlier, the fact that market-to-book ratios  
3 substantially exceed 100 percent indicates that historic and prospective returns of over  
4 10.0 percent reflect earnings levels that are well above the actual cost of equity for those  
5 regulated companies. I also note that a company whose stock sells above book value can  
6 attract capital in a way that enhances the book value of existing stockholders, thus  
7 creating a favorable environment for financial integrity. Finally, I note that my 9.0  
8 percent to 10.0 percent CE finding does not incorporate any market-to-book  
9 "adjustment," as it approximates the historic and projected returns on equity for the  
10 electric proxy groups.

## 11 12 XI. RETURN ON EQUITY RECOMMENDATION

13  
14 **Q. Please summarize the results of your three cost of equity analyses.**

15 **A.** My three analyses produce the following results:

16	DCF	8.75-9.25%	(9.0% mid-point)
17	CAPM	7.2-7.4%	(7.3% mid-point)
18	CE	9.0-10.0%	(9.5% mid-point)

19  
20 These results indicate an overall broad range of 7.2 percent to 10.0 percent, which  
21 focuses on the respective ranges of my individual model results. Focusing on the  
22 respective midpoints, the range is 7.3 percent to 9.5 percent. I recommend a return on  
23 equity range of 9.0 percent to 9.5 percent for PacifiCorp. Though this recommendation is  
24 higher than my CAPM findings, it approximates the mid-point of my DCF range (9.0  
25 percent) and the mid-point of my CE range (9.5 percent). For the purposes of this

1 proceeding, I recommend the low end of this range, or 9.0 percent. This is justified for  
2 the following reasons:

- 3 • PacifiCorp has above-average debt ratings;
- 4 • My DCF and CE conclusions focus on the highest results; and
- 5 • Possible implementation of a Power Cost Adjustment Mechanism  
6 (PCAM).

7  
8 **Q. Your CAPM results are less than your DCF and CE results. Does this imply that**  
9 **the CAPM results should not be considered in determining the cost of equity for**  
10 **PacifiCorp?**

11 A. No. There are two reasons for the lower CAPM results. First, risk premiums are lower  
12 currently than was the case in prior years. This is also reflective of a decline in investor  
13 expectations of equity returns and risk premiums. Second, the level of interest rates on  
14 U.S. Treasury bonds (i.e., the risk-free rate) has been lower in recent years. This is  
15 partially the result of the actions of the Federal Reserve to stimulate the economy. This  
16 also impacts investor expectations of return in a negative fashion. I note that, initially,  
17 investors may have believed that the decline in Treasury yields was a temporary factor  
18 that would soon be replaced by a rise in interest rates. However, this has not been the  
19 case as interest rates have remained low and, even with the 2013 increases, continue to be  
20 at historically low levels. As a result, it cannot be maintained that low interest rates (and  
21 low CAPM results) are temporary and do not reflect investor expectations.

22 Consequently, the CAPM results should be considered as one factor in determining the  
23 cost of equity for PacifiCorp. At the very least, the CAPM results indicate that capital

1 costs continue at historically low levels and that PacifiCorp's cost of equity is less than in  
2 prior years. This is another reason to consider a cost of equity slightly below the median  
3 DCF and CE results.  
4

## 5 XII. TOTAL COST OF CAPITAL

6

7 **Q. What is the total cost of capital for PacifiCorp?**

8 A. Exhibit No. \_\_\_ (DCP-3) reflects the total cost of capital for the Company using the  
9 capital structure along with the cost of debt and common equity costs my analyses  
10 support. The resulting total cost of capital is a range of 7.07 percent to 7.31 percent. I  
11 recommend that a 7.07 percent total cost of capital be established for PacifiCorp, which  
12 incorporates a 9.0 percent cost of equity.  
13

14 **Q. Does your cost of capital recommendation provide the company with a sufficient  
15 level of earnings to maintain its financial integrity?**

16 A. Yes, it does. Exhibit No. \_\_\_ (DCP-15) shows the pre-tax coverage that would result if  
17 my cost of capital recommendation is employed. As the results indicate, my  
18 recommended range would satisfy a coverage level at the benchmark range for an A rated  
19 utility. In addition, the debt ratio exceeds the benchmark for an A rated utility.  
20  
21

1 **XIII. CRITIQUE OF COMPANY TESTIMONY**

2  
3 **Q. What cost of equity is PacifiCorp requesting in this proceeding?**

4 A. PacifiCorp is requesting a cost of equity of 10.0 percent. This is proposed by PacifiCorp  
5 witness Strunk. His 10.0 percent recommendation is derived as follows:

6

<u>Cost of Equity Model</u>	<u>Result</u>
DCF Analysis	9.23%
Yield + Growth	9.90%
CAPM Analysis	9.67%
Risk Premium	10.22%
CE Analysis – Utilities	9.73%
CE Analysis – Industrials	16.31%
Allowed Returns for Electrics	10.02%

7  
8  
9  
10  
11

12  
13 **Q. What are your general responses to Mr. Strunk’s analyses and conclusions?**

14 A. It is apparent that Mr. Strunk’s DCF, CAPM and CE (Utilities) analyses are generally  
15 consistent with my own results.

16  
17 **Q. Do you have any comments about Mr. Strunk’s risk premium methodology and  
18 conclusions?**

19 A. Yes, I do. Mr. Strunk’s risk premium methodology reflects a historical comparison  
20 (1994-2013) of allowed returns on equity granted by state regulators in the United States  
21 and three alternative indicators of bond yields in order to estimate the required risk  
22 premium to be applied to the current level of interest rates. Based upon his risk premium

1 analyses, Mr. Strunk concludes that the cost of equity for PacifiCorp is within a range of  
2 10.10 percent to 10.29 percent.

3 It is apparent that Mr. Strunk's risk premium methodology is inconsistent with  
4 other parts of his testimony. Mr. Strunk claims elsewhere in his testimony (e.g., pages  
5 14-16) that the current and recent interest rate environment "does not characterize  
6 investors' forward-looking return requirements . . . as the Federal Reserve has  
7 aggressively acted to keep interest rates at record lows and stimulate the economy." Yet,  
8 over the period 2008 – 2013 Mr. Strunk used these same "low" interest rates to measure  
9 his recommended spread between allowed returns and interest rates. Thus, using Mr.  
10 Strunk's own logic, his risk premium spread is inflated over the "forward-looking return  
11 requirements" of investors.

12  
13 **Q. Do you have any comments on Mr. Strunk's CE – industrials results?**

14 A. Yes, I do. As I have demonstrated in my own CE analyses, the risks (and thus required  
15 returns) are larger for unregulated industrials than is the case for regulated utilities. As a  
16 result, his 16.31 percent result for the CE – industrials is not a proper standard for  
17 PacifiCorp.

18  
19 **Q. What is your response to Mr. Strunk's "Yield + Growth" method and results?**

20 A. Mr. Strunk's Yield + Growth method combines the average dividend yield of Value  
21 Line's "Electric Utility (West) Industry" with the projected growth in EPS (as reported in  
22 Zack's). This is essentially an industry DCF analysis using only one measure of growth –  
23 analysts' projections of EPS. I note that this is a very narrow and simplistic interpretation

1 of the DCF model and assumes that all investors rely exclusively on EPS forecasts in  
2 making investment decisions. Mr. Strunk has made no demonstration that all investors  
3 rely exclusively on EPS forecasts. As I have discussed earlier, investors rely on multiple  
4 factors in making investment decisions.

5 The flawed simplicity of Mr. Strunk's Yield + Growth method is further  
6 highlighted in a comparison of his results (i.e., 9.90 percent) with his more broadly-based  
7 DCF results (i.e., 9.23 percent).

8  
9 **Q. Do you have any response to Mr. Strunk's "Allowed Returns for Electric Utilities,**  
10 **2013" method?**

11 **A.** Yes, I do. Mr. Strunk has averaged the return on equity awards of 48 electric utility cases  
12 in 2013, and concluded that the 10.02 percent result relates to the required cost of equity  
13 for PacifiCorp. However, seven of the 48 results he cites are for Virginia Electric and  
14 Power Company and Appalachian Power Company proceedings in Virginia.

15 These seven proceedings are not "general rate case" proceedings, but rather  
16 reflect the results of legislative mandates that the Virginia State Corporation Commission  
17 must consider in these proceedings. The uniqueness of these mandates is recognized by  
18 SNL Financial (the source of Mr. Strunk's data). As a demonstration of this, SNL  
19 Financial noted in its January 15, 2014, "Regulatory Focus" the following:

20 "We note that the data includes several surcharge/rider generation cases in  
21 Virginia that incorporate plant-specific ROE premiums. Virginia statutes  
22 authorize the State Corporation Commission to approve ROE premiums of  
23 up to 200 basis points for certain generation projects."  
24

1 Mr. Strunk's Exhibit No. \_\_\_ (KGS-16) (source of his data for this methodology)  
2 indicates that, excluding the three Virginia Power decisions, only 15 of the remaining 41  
3 decisions have an allowed ROE as high as 10 percent. In fact, the average (mean) and  
4 median allowed ROE of the remaining decisions is 9.8 percent, as is shown on Exhibit  
5 No. \_\_\_ (DCP-16).

6  
7 **Q. What has been the trend of authorized returns on equity of electric utilities over the**  
8 **past several years?**

9 A. The authorized returns on equity found appropriate for electric utilities over the past  
10 several years as shown below:

11	2008	10.46%
12	2009	10.48%
13	2010	10.34%
14	2011	10.22%
15	2012	10.01% <sup>9</sup>
16	2013	9.80% <sup>10</sup>
17	2014 (1Q)	9.57% <sup>10</sup>

18 Source: Regulatory Research Associates, Regulatory Focus

19 The table above shows commission-authorized returns on equity have declined over  
20 recent years.

21 **Q. What is the collective impact of the deficiencies you have demonstrated in Mr.**  
22 **Strunk's analyses?**

A. Each of the deficiencies I have described above demonstrates that Mr. Strunk's analyses  
all over-state the cost of equity for PacifiCorp.

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<sup>9</sup> Excludes rider/surcharge cases in Virginia, as noted by RRA.

1 **Q. Have you reviewed the testimony of PacifiCorp witness Bruce N. Williams?**

2 A. Yes, I have. In particular, I have evaluated Mr. Williams statements that, should the  
3 Commission set rates based upon a 49.10 percent common equity ratio, PacifiCorp's  
4 ratings will decline. In particular, Mr. Williams states, on page 11, lines 11-12:

5 With only 49.10 percent common equity in the capital structure, PacifiCorp's  
6 current rating would be lowered.

7  
8 Mr. Williams also states, on page 12, line 4, that if the Company actually financed  
9 itself with a capital structure containing 49.1 percent equity:

10 Certainly there would be a downgrade in the credit ratings.

11  
12 **Q. Do you agree with Mr. Williams' assertion that PacifiCorp's securities will be**  
13 **downgraded if a 49.10 percent common equity ratio is utilized by the Commission in**  
14 **establishing the Company's cost of capital?**

15 A. No, I do not. I note, first of all, that in the three most recent PacifiCorp decisions the  
16 Commission has employed a 49.10 percent common equity ratio. Throughout this time  
17 the Company's ratings have remained at single A.

18 In addition, I note that PacifiCorp's common equity ratio prior to its 2006 merger  
19 with BHE was below 49 percent. In fact, as Exhibit No. \_\_\_ (DCP-6), page 1, indicates,  
20 PacifiCorp's equity ratio did not exceed 49 percent until 2008. Again, PacifiCorp  
21 maintained its single A ratings throughout this time period.

22 Finally, Exhibit No. \_\_\_ (DCP-16) indicates that the average common equity ratio  
23 authorized for electric utilities in 2013 (i.e., the electric utility 2013 rate cases employed  
24 by PacifiCorp witness Strunk in his "Allowed Returns for Electrics" analysis) was about  
25 49 percent.



1 **Q. PacifiCorp witness Williams also maintains, on page 3 of his testimony (wherein he**  
2 **quotes PacifiCorp witness Strunk), that the utilization of a hypothetical capital**  
3 **structure (with 49.1 percent common equity) should be accompanied by a higher**  
4 **cost of common equity. Do you agree with this assertion?**

5 A. No, I do not. As I indicate on Exhibit No. \_\_\_ (DCP-8), the average common equity  
6 ratios of the two groups of proxy utilities is 49 percent or below. As a result, the 49.1  
7 percent equity ratio in the hypothetical capital structure as used by the Commission in the  
8 past three PacifiCorp rate proceedings and recommended by me in the current  
9 proceeding, is consistent with the proxy companies whose financial data is utilized to  
10 estimate PacifiCorp's cost of equity. As a result, no adjustment to the cost of equity is  
11 either proper or justified.

12  
13 **Q. Do the 2013 electric utility decisions cited in Exhibit No. \_\_\_ (DCP-16) indicate any**  
14 **utilities rated single A that have common equity ratios below 50 percent?**

15 A. Yes. There are several decisions cited on Exhibit No. \_\_\_ (DCP-16) where an electric  
16 utility had an equity ratio of less than 50 percent and had single A ratings.

17  
18 **Q. Are there any other factors in PacifiCorp's financial structure that impact the**  
19 **proper capital structure to use for setting cost of capital?**

20 A. Yes. As I indicated previously, PacifiCorp is indirectly owned by BHE. It is apparent,  
21 from BHE's financial statements, that this entity has issued about \$9 billion of debt in the  
22 form of senior debt and junior subordinated debentures. This \$9 billion of BHE debt  
23 represents nearly 30 percent of BHE's consolidated long-term debt. This \$9 billion of

1 BHE debt represents “leverage” at the holding company level, which is in turn available  
2 to invest in its subsidiaries. This is referred to as “double leverage” and reflects a  
3 situation where a holding company has debt at both the holding company level and  
4 subsidiary level. A case can be made that this holding company debt is supporting  
5 subsidiary common equity and therefore receiving an equity return on capital that  
6 actually carries a lower cost.

7 This is demonstrated on Exhibit No. \_\_\_\_ (DCP-6), page 4. This indicates that the  
8 2013 consolidated common equity of BHE was about \$18.8 billion. In turn, the  
9 combined common equity of BHE’s utility subsidiaries was over \$19.3 billion, a figure  
10 that does not include the non-utility subsidiaries’ common equity. Thus, the reported  
11 book common equity of BHE’s subsidiaries exceeds the consolidated common equity of  
12 BHE.

13 I am not proposing a “double leverage” adjustment for PacifiCorp in this  
14 proceeding. On the other hand, the existence of double leverage in the PacifiCorp/BHE  
15 financial structure is another reason for the continuation of the use of a hypothetical  
16 capital structure for PacifiCorp.

17  
18 **Q. Does this conclude your direct testimony?**

19 **A.** Yes, it does.