

**Exhibit No. KLE-1T
Docket UE-100749
Witness: Kenneth L. Elgin**

**BEFORE THE WASHINGTON STATE
UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

**PACIFICORP D/B/A PACIFIC POWER
& LIGHT COMPANY,**

Respondent.

DOCKET UE-100749

TESTIMONY OF

Kenneth L. Elgin

**STAFF OF WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION**

Fair Rate of Return

October 5, 2010

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Exhibit No. ____ (KLE-2) Experience and Qualification

1 I. INTRODUCTION

2

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

4 A. My name is Kenneth L. Elgin. I am a senior financial analyst for the Washington
5 Utilities & Transportation Commission. My business address is, Richard Hemstad
6 Building, S. 1300 Evergreen Park Drive SW, Olympia, Washington 98504.

7

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

9 A. I earned a B.A. degree in 1974 from University of Puget Sound and an M.B.A. in
10 1980 from Washington State University. I have been employed by the Commission
11 in several different capacities since 1985. My experience is more fully described in
12 my Exhibit No. ____ (KLE-2).

13

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

15 A. The purpose of my testimony is to provide the Commission with a recommendation
16 for the fair rate of return (cost of capital) for PacifiCorp (or “the Company”). I also
17 respond to the analysis and recommendations of the Company’s cost of capital
18 witnesses: Mr. Bruce Williams and Dr. Samuel Hadaway.

1 **II. SUMMARY**

2
3 **A. Staff's Cost of Capital Recommendation**

4
5 **Q. What is the overall cost of capital for the regulated operations of PacifiCorp?**

6 A. The overall cost of capital for PacifiCorp's regulated operations is 7.48 percent. The
7 following table shows the capital structure and cost rates that produce this overall
8 rate of return:

9

<u>Source of Capital</u>	<u>Cap. Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long-term Debt	50.20%	5.89%	2.96%
Short term Debt	3.00%	3.00%	0.09%
Preferred Stock	0.30%	5.41%	0.02%
Common Stock	46.50%	9.50%	4.42%
Weighted Average Cost of Capital	100.00%		7.48%

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16 **B. Comparing Staff and Company Recommendations**

17
18 **Q. Please compare your cost of capital determination with the cost of capital
19 proposal of PacifiCorp's witnesses.**

20 A. There are two major differences between my 7.48 percent cost of capital and the
21 Company's proposed 8.34 percent cost of capital: 1) I recommend a return on equity
22 ("ROE") of 9.50 percent compared to the Company's proposed 10.60 percent; and 2)

1 I recommend a capital structure with 46.50 percent equity, compared to PacifiCorp's
2 proposed 52.10 percent equity ratio.

3 The difference between my ROE estimate and Dr. Hadaway's ROE estimate
4 can be boiled down to one issue: Is the Company's estimate of long-term dividend
5 growth reasonable? I show it is not.

6 I accept the Company's proposed 5.41 percent cost of preferred equity and
7 the Company's proposed cost of long-term debt of 5.89 percent. However, I include
8 a reasonable amount of short-term debt in the capital structure, while Mr. Williams
9 includes no short-term debt in the Company's cost of capital proposal. As a result,
10 there is a difference in the proposed cost of debt between Staff and the Company.

11 12 III. BACKGROUND

13
14 **Q. Please explain the context of the Commission's cost of capital determination for
15 PacifiCorp in this proceeding.**

16 A. This proceeding involves setting the rates for PacifiCorp's regulated electric utility
17 operations in the State of Washington. Because PacifiCorp's common stock
18 (common equity) is a not publicly traded, the cost of equity analysis must focus on a
19 set of comparable companies to determine a fair return to the Company's owners.

20
21 **Q. What are the primary steps involved in the analysis to estimate a fair rate of
22 return for any regulated utility?**

1 A. The process of estimating a utility's cost of capital involves several distinct steps.
2 The first step is to determine the proper capital structure to finance the operations of
3 the utility. The second step is to estimate the cost of preferred and common equity.
4 The final step is to calculate the cost of debt for the rate year, including the cost of
5 both long-term and the short-term debt.

6

7 **A. Economic and Legal Principles**

8

9 **Q. What is the primary principle underlying the Commission's determination of**
10 **the fair rate of return for a regulated utility?**

11 A. Consistent with both economic and legal theory, the primary principle is for the
12 Commission to determine public utility rates in order to provide a utility an
13 opportunity to recover its costs, which includes a fair return on and of the capital
14 investors provide to fund the long-lived assets necessary to provide utility services.
15 *See RCW 80.28.010, 80.04.250 & 80.04.350.*

16 Traditionally, the Commission has implemented this principle using what is
17 commonly referred to as the rate base - rate of return method. Under this method,
18 the Commission in a rate case establishes the relationship between revenue,
19 expenses, and return on capital. The Commission sets rates to provide the utility an
20 opportunity to recover a fair return on the assets, or rate base, the utility uses to
21 provide utility service. This method presumes the utility is efficient and
22 economically managed.

1 This principle is reflected in two significant decisions by the United States
2 Supreme Court. The first decision is *Bluefield Water Works and Improvement Co. v.*
3 *Public Service Commission of West Virginia*, 262 U.S. 679, 692 (1923). This
4 decision established the following concepts to guide the determination of a fair rate
5 of return in the rate setting process: comparable earnings for comparable risks,
6 maintaining financial integrity of the regulated firm, the ability of the firm to raise
7 capital and the expectation that the utility is operated efficiently.

8 The second decision is *Federal Power Commission v. Hope Natural Gas Co.*,
9 320 U.S. 591, 603 (1942). In that decision, the Court affirmed the concepts the
10 Court stated in *Bluefield*, and recognized the concept that regulators should balance
11 consumer and owner interests in determining a fair rate of return.

12
13 **Q. How do these principles and concepts guide your analysis in this case?**

14 **A.** In applying these principles and concepts, I evaluate both capital markets and
15 publicly available financial information of a comparable group of companies to
16 estimate investor requirements for committing their capital. The goal is to estimate a
17 fair return for PacifiCorp's owners for committing their capital to the utility.

18 For the cost of preferred equity and debt, determining the fair return is
19 relatively straightforward. However, there is no precise formula for determining a
20 rate of return on common equity ("ROE"). Consequently, there is uncertainty
21 inherent in the determination of the cost of common equity capital.

1 **B. Methods**

2
3 **Q. What methods for determining ROE have the Commission traditionally used?**

4 A. Based on my review of the Commission's orders on rate of return over the last forty
5 years, the Commission consistently has relied upon the Discounted Cash Flow
6 ("DCF") method in its determination of ROE, though in more recent cases the
7 Commission has considered the results of other methods as a check.

8
9 **Q. Should the Commission use the DCF method in this case?**

10 A. Yes. I strongly support the Commission's policy and practice to use the DCF
11 analysis as the primary method to determine the investor's ROE for utility
12 companies subject to Commission jurisdiction. The DCF method provides the most
13 reliable indicator of investor's rate of return requirements consistent with the legal
14 principles of the court decisions I just discussed. Equity investors are entitled to the
15 firm's profits. The DCF model reflects this fact, by stating that the price an investor
16 will pay for a share of stock represents the expected cash flows from ownership
17 discounted to the present value. The discount rate is the fair rate of return, and it is
18 often called the cost of equity capital.

19 I also consider the results of the Capital Asset Pricing Model ("CAPM") and
20 a risk premium analysis as a check to my DCF results.

21
22 **Q. What methods do you use to determine cost of preferred equity and the cost of**
23 **debt?**

1 A. The method for determining the cost of preferred equity is based on the specific
2 terms and conditions in the contractual obligations of the utility to investors
3 providing the funds.

4 The cost of debt calculation is similarly based on the terms and conditions of
5 specific debt issuances. Moreover, the cost of debt includes an evaluation of the
6 utility's actual debt service requirements, including expenses, and then adjusts for
7 known and measurable changes in the rate year. Nonetheless, a proper pro forma
8 cost of debt calculation is necessary to protect both consumer and utility interests.
9 Consequently, if the Company is not capitalized efficiently, the proper cost of debt
10 should be examined.

11
12 **C. General Economic Conditions**

13
14 **Q. What economic and financial conditions are relevant to your analyses of**
15 **PacifiCorp's cost of capital?**

16 A. In general, I rely upon current economic and financial conditions. These conditions
17 shape investor expectations and are reflected in current security prices. This is
18 important because of what is known as the "efficient market" hypothesis, which
19 states that current security prices reflect all that is known about any particular
20 security. Indeed, most prices for securities reflect what investors currently expect
21 and know about a particular company, not what transpired in prior periods.

22 In addition, my analysis is influenced by the general observation that the cost
23 of capital has declined significantly since in the decade following the inflationary

1 period of the 1980's. Cost of capital declined again, although more modestly, in the
2 2000's, including a decline in the cost of capital after the fallout from the 2008
3 financial crisis.

4 I also note, particularly in the last decade, technology has had a tremendous
5 impact on the cost of capital. Technology now enables capital to flow freely
6 between different investment opportunities in global markets at little cost. The net
7 effect of this efficiency gain has been to further reduce the cost of capital.

8
9 **Q. What is your general conclusion regarding the impact of current financial**
10 **conditions on investor expectations?**

11 A. My general conclusion is the current macro-economic climate will continue as
12 central banks adopt monetary policies designed to stimulate economic activity.
13 These monetary policies, I believe, will continue for the foreseeable future. As a
14 result, capital costs will remain low for an extended period of time - well beyond the
15 2011 rate year. Furthermore, it is my belief that the overall opportunity costs for
16 investors have declined, causing investors to reset future expectations and expect
17 lower returns in investments of all sorts.

18 There may be occasional "blips", including the possibility of another "flight
19 to safety" such as witnessed during the peak of the recent financial crisis. However,
20 if there are temporary blips in capital markets, the effects are immediately seen in
21 markets for fixed income securities and, in particular, securities with shorter
22 duration. These blips have much less effect on a regulated firm's most permanent
23 source of capital: common equity.

1 I am also aware of concerns that interest rates will rise due to swelling federal
2 budget deficits. However, there are several mitigating factors to consider. First,
3 there is also concern about the risk of deflation - not inflation. Second, there is
4 seldom a fully positive correlation between changing interest rates and the cost of
5 equity. Even if Treasury securities cost more due to inflation, these increased costs
6 will be reflected directly on the cost of debt and other fixed income securities, and
7 these increased costs will be reflected in the normal turn-over of fixed income
8 securities in a utility's balance sheet. Furthermore, it is not unusual for utilities to
9 execute hedges to capture low interest costs if there is a reasonable expectation that
10 future interest rates will rise.

11 Third, if there is an increase in the cost of equity due to rising interest rates,
12 the Commission will evaluate that evidence in a future rate case. Equity investors
13 have an advantage over bondholders in this respect because a rate case will "re-
14 price" the entire equity investment supporting utility assets. Bondholders have no
15 such benefit. In fact, bondholders typically are exposed to redemption risk of lower
16 interest rates.

17 Finally, there is a tremendous amount of capital currently invested in
18 government securities as a fall-out of the "flight to safety" from the 2008 financial
19 crisis. Over time, this capital will seek higher returns as the global economic picture
20 improves and investor's appetite for risk returns. Each of these factors lead me to
21 conclude that lower capital costs will prevail in the global economic climate as it
22 recovers from the 2008 recession.

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Q. What specific conclusions should the Commission draw from the current economic and financial conditions?

A. The Commission should conclude that recent economic and financial circumstances will continue to keep capital costs low. Specifically, the overall economic and financial conditions have investors expecting lower returns for their investments.

D. PacifiCorp’s Operations and Risks

Q. Please summarize PacifiCorp and its operations.

A. PacifiCorp is a wholly owned subsidiary of MidAmerican Energy Holdings Corporation (“MEHC”). PacifiCorp is an electric utility company engaged in the distribution, transmission, generation, purchase and sale of electric energy to customers in the central and eastern region of Washington, and other states. It is commonly referred to as a “fully integrated electric utility”.

In my judgment, PacifiCorp’s regulated electric operations are a “lower risk” business than utilities with unregulated operations or significant investments in unregulated operations. This further emphasizes the need to use a proxy group that captures the salient features of the Company’s regulated operations.

1 **Q. Is there any objective evidence of PacifiCorp's low business risk?**

2 A. Yes. Standard & Poor's ("S&P"), as part of its credit rating process, qualifies the
3 business risks of the regulated utilities it analyzes. S&P rates PacifiCorp's business
4 risk profile as "Excellent".

5

6 **IV. CAPITAL STRUCTURE**

7

8 **Q. Please explain what is meant by the term "capital structure".**

9 A. Capital structure is an evaluation of the various sources of capital provided by
10 investors to fund the long-lived assets necessary to deliver utility services. The
11 sources are: common equity, preferred equity, and debt. When all of a utility's
12 capital is considered, the utility's actual capital structure reflects the amount of each
13 source of capital supporting those assets.

14 Consistent with financial theory, a firm's capital structure should achieve the
15 lowest overall cost of capital. Like the determination of the cost rates of equity and
16 debt capital, determining the appropriate capital structure for ratemaking purposes
17 relies upon a combination of analysis and informed judgment.

18

19 **Q. Why is the capital structure issue important in determining a fair rate of return**
20 **for a regulated utility?**

21 A. Capital structure, and particularly the equity ratio, materially impacts the price
22 customers pay for service. Due to the relative difference between the cost of equity

1 and the cost of debt, a capital structure with relatively more debt and less equity will
2 result in a lower overall cost of capital.

3 This relative difference between the cost of equity and the cost of debt capital
4 is further exacerbated by the impact of Federal income taxes in the determination of
5 a utility's revenue requirement. Each dollar of revenue necessary to compensate
6 owners must be supported by revenues to pay Federal income taxes. A utility may
7 deduct its interest expense for Federal income tax purposes, causing an even further
8 reduction in the cost to customers and the utility.

9 Put another way, consistent with modern financial theory, a firm with stable
10 cash flows, particularly those of a regulated utility, should take advantage of its
11 stable cash flows and use financial leverage (debt) to benefit its shareholders. As a
12 result of using financial leverage to enhance shareholder value, customers benefit
13 from both lower capital costs and the federal tax benefit of the interest deduction.

14 The question is the degree of financial leverage that should be employed.
15 The proper capital structure is paramount to the interests of both shareholders and
16 customers.

17
18 **Q. What is the Commission's policy on capital structure for ratemaking purposes?**

19 A. The Commission's policy for determining an appropriate capital structure is to
20 balance the competing interests of safety and economy. The Commission affirmed
21 this policy in Docket UE-050684, the last rate case in which PacifiCorp's cost of
22 capital was contested: "The appropriate capital structure for ratemaking purposes is
23 one that balance economy with safety in view of all of the sources of capital

1 available to a company.” *UTC v. PacifiCorp, Docket UE-050684, Order 04 at pages*
2 *79, ¶ 224 (April 17, 2006); see also page 82, ¶ 230 of that Order.*¹

3 This policy is consistent with a fundamental principle of finance: a properly
4 balanced capital structure ensures the Company efficiently finances its long-lived
5 assets dedicated to public service to achieve the lowest possible cost.

6 This is a very sensible policy. For example, a utility could finance its
7 operations with 100 percent equity, but that capital structure would not meet the
8 objectives of its equity holders, and in addition be very costly to ratepayers. On the
9 other hand, a utility could be financed with significant amounts of debt, and while
10 that would result in a very low cost of capital, that would be very unsafe and likely
11 result in a default.

12 I employ this policy in my capital structure analysis.

13
14 **Q. Are there any other facts the Commission should consider regarding capital**
15 **structure for PacifiCorp?**

16 A. Yes. PacifiCorp does not control its own capital structure. Instead, PacifiCorp’s
17 parent, MEHC, controls PacifiCorp’s capital structure. MEHC’s financial incentive
18 is to capitalize the operations of PacifiCorp with as much equity as possible. Simply
19 put, the more equity in the operating company’s capital structure, the greater the
20 equity returns for MEHC. In light of this incentive, the Commission must evaluate
21 carefully the proposed capital structure of PacifiCorp.

22

¹ The Commission considered a purchased power mechanism for the Company in Dockets UE-061546 and UE-060817 (Consolidated). In that Docket, the Commission left the capital structure unchanged at 46% common equity.

1 **A. Equity Ratio**

2
3 **Q. How do you begin your analysis of PacifiCorp's capital structure?**

4 A. I begin my analysis by considering summary information for the regulated electric
5 and natural gas industry in this country. I review the capital structures of two groups
6 of utilities covered by AUS Utility Reports and SNL Energy Reports: a group of
7 electric utilities and a group of combination utilities providing both electric and gas
8 service.

9 That data show the following for 2009, on average: 1) AUS reports electric
10 companies were capitalized with 46 percent equity and combination electric/gas
11 companies with 45 percent equity; 2) SNL reports the average common equity ratio
12 for electric companies of 43.7 percent. The SNL data includes short-term debt in the
13 calculation of the capitalization ratios.

14 These are per books ratios; none are adjusted for unregulated operations of
15 the companies, or other unique operations, such as merchant plant operations or
16 foreign operations. Adjustments could be made to these ratios in an effort to isolate
17 the capitalization ratios of the utility operations, but I have not done so. The effect
18 of any such adjustment would further reduce the equity ratio actually supporting
19 utility operations.

20
21 **Q. Do you have any other comments with respect to this aggregate capital**
22 **structure data prepared by these reporting services?**

1 A. Yes. I calculated the average capital structure for the companies in my proxy group
2 that I use for estimating PacifiCorp's return on equity. I discuss that proxy group in
3 detail later in my testimony. For the period ending 2009 the average equity ratio for
4 this group is 45.9 percent. SNL does not report the capital structure for one company
5 in my proxy group, Portland General Electric. However, AUS does report the equity
6 ratio for this company and the calculation includes the figure reported by AUS for
7 Portland General Electric.

8

9 **Q. What other factors did you consider?**

10 A. I considered summary credit rating information provided by S&P with respect to the
11 electric companies it follows. S&P indicates the majority of electric companies in
12 this country are rated "BBB". In 2009, approximately 130 utilities were "BBB" and
13 approximately 45 utilities were rated "A". This data indicates that most firms
14 capitalize utility operations in order to maintain ""BBB" investment grade ratings.
15 The group data show that only about 1 in 4 companies pay the extra cost to achieve
16 the added safety of an "A" rating (S&P Rating Direct, April 16, 2010).

17

18 **Q. What preliminary conclusion do you reach from this aggregate data?**

19 A. I conclude that a reasonable equity ratio is in the mid 40 percent range, supporting a
20 "BBB" rating on corporate debt and an "A-" secured rating.

21

1 **Q. What do “secured rating” and “rating on corporate debt” mean?**

2 A. “Secured rating” means the rating on a company’s mortgage. A “rating on corporate
3 debt” means a rating on a company’s unsecured debt. A company may issue either
4 debt secured by its mortgage or it could issue unsecured debt. A company’s debt
5 secured by a mortgage is rated higher than company’s corporate (unsecured) debt
6 and investors require less return for these securities.

7
8 **Q. What is your recommendation for PacifiCorp’s equity ratio?**

9 A. The Commission should use a common equity ratio of 46.5 percent.

10

11 **Q. Is a 46.5 percent equity ratio for PacifiCorp consistent with the Commission’s
12 policy that a capital structure should balance economy and safety?**

13 A. Yes. The capital structure I propose is similar to the actual ratios used by other
14 companies as compiled by AUS and SNL, it is consistent with the capital structures
15 used by the Commission in recent contested proceedings for energy companies, and
16 it is consistent with the equity ratio the Commission determined for PacifiCorp in the
17 Company’s last two contested rate proceedings. A 46.5 percent equity ratio is
18 sufficient to support a solid BBB corporate credit rating and an “A-” secured rating
19 for the Company.

20

21 **Q. Did you analyze the safety of your proposed capital structure containing 46.5
22 percent common equity?**

23 A. Yes.

1

2 **Q. Please explain your analysis.**

3 A. My analysis involved a sensitivity study of PacifiCorp's operating income of my
4 proposed cost of capital and capital structure. Operating income (profit margin) is
5 the most basic measure of any firm's ability to service debt. It captures any
6 significant variation in either utility revenues or costs, and it is amenable to
7 sensitivity analysis in terms of pressure on debt service.

8 The inputs to my analysis are the cost of debt, cost of equity and marginal
9 federal income tax rate. To test the safety of my recommended 46.5 percent equity
10 ratio, I used the 5.89 percent cost of debt proposed by PacifiCorp witness Williams,
11 my estimate of the cost of short-term debt, my 9.50 percent return on equity, and a
12 35 percent federal income tax rate.

13 The results, using my recommended capital structure, produce a pre-tax
14 coverage ratio of approximately 3.30 times.

15 Next, I assume an adverse scenario for PacifiCorp under which the
16 Company's operating income declined dramatically, putting pressure on the
17 Company's ability to issue additional debt.

18

19 **Q. What objective measures did you use to determine when a firm would**
20 **experience difficulty issuing additional debt?**

21 A. Typical bond indenture covenants restrict additional debt issuance when operating
22 income falls below a pre-tax interest coverage ratio of 1.75 to 2.00 times. Therefore,
23 the analysis considers how much operating income would have to decline in order to

1 produce pre-tax interest coverage ratio of 2.0 times. In this instance, PacifiCorp's
2 return on equity would have to fall significantly - to 4 percent - before its coverage
3 ratio would fall below 2.0 times, and thus potentially impede its ability to issue
4 additional debt and finance its ongoing operations.

5
6 **Q. What do you conclude based on this analysis?**

7 A. I conclude that an equity ratio for PacifiCorp of 46.5 percent is safe. It provides
8 significant operating margin (profit margin) for PacifiCorp in the case of a severe
9 decline in operating income that would adversely impact the Company's ability to
10 finance its utility operations.

11
12 **B. Short-Term Debt Ratio**

13
14 **Q. Should the Commission include short-term debt in PacifiCorp's capital
15 structure for ratemaking purposes?**

16 A. Yes. I recommend the Commission include a reasonable amount of short-term debt
17 in the capital structure for ratemaking purposes.

18
19 **Q. What is a reasonable amount of short-term debt in a utility's capital structure?**

20 A. Three to five percent is a reasonable amount of short-term in a utility's capital
21 structure.

1 **Q. Why?**

2 A. Short-term debt is a very low-cost source of funds. A utility that requires new
3 external capital to fund its construction budget should use its short-term borrowing
4 capability to fund these requirements especially in this low interest rate environment.
5 Once the construction cycle is complete, PacifiCorp will roll-over its short-term
6 borrowing with more permanent sources of capital. As I mentioned earlier, the
7 Commission recognizes that an appropriate capital structure examines, "...all the
8 sources of capital available to a company." *UTC PacifiCorp, Docket No. UE-*
9 *050684, Order 04 at page 79, ¶¶ 224 (April 17, 2006).*

10

11 **Q. Does PacifiCorp currently have short-term debt credit facilities?**

12 A. Yes. PacifiCorp has \$1.5 billion worth of short-term debt credit facilities.

13

14 **Q. What amount of short-term debt should the Commission include in
15 PacifiCorp's capital structure for ratemaking purposes?**

16 A. The Commission should include \$500 million, or 3 percent of total capital.

17

18 **Q. What is the basis for this 3 percent level of short-term debt?**

19 A. First, a 3 percent level of short-term debt is the same level the Commission found
20 appropriate in the last PacifiCorp rate case in which the issue was contested: Docket
21 UE-050684. In its order in that docket, the Commission specifically rejected the
22 Company's proposal to exclude short-term debt. *Id., Order 04 at page 79, ¶224.*

1 Second, PacifiCorp's books currently show over \$15 billion in net plant.
2 \$500 million (my recommended level of short-term debt) represents just 3 percent of
3 the total net plant in service, which is a relatively small percentage.

4 Finally, the Company is generating internally \$1.5 billion of cash. Its
5 construction budget is \$2.3 billion and indicates PacifiCorp needs to fund \$800
6 million of its construction budget with external funds (\$2.3 billion - \$1.5 billion =
7 \$800 million). Because PacifiCorp's credit facilities are \$1.5 billion, the Company is
8 able to finance its annual construction budget from internal sources and short-term
9 debt. It is reasonable and cost-effective for a firm to use its short-term borrowing
10 capacity to fund part of its construction budget in the manner I have previously
11 described.

12
13 **Q. What other factors did you consider in determining whether 3 percent is a**
14 **reasonable amount of short-term debt in PacifiCorp's capital structure?**

15 A. Avista and Puget Sound Energy each included short-term debt in the capital structure
16 in their most recent rate cases in Washington. Avista included approximately 3
17 percent short-term debt, and PSE included 3.95 percent short-term debt in their
18 respective proposed capitalization ratios.

19
20 **V. COST OF PREFERRED EQUITY AND COMMON EQUITY**

21
22 **Q. What are the equity components of PacifiCorp's capital structure?**

23 A. PacifiCorp's capital structure contains common equity and preferred equity.

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A. Cost of Preferred Equity

Q. What is the PacifiCorp’s cost of preferred equity?

A. PacifiCorp’s cost of preferred equity is 5.41 percent. This is the same cost figure proposed by PacifiCorp. I reviewed the Company’s cost calculation and find the proposed cost acceptable.

B. Cost of Common Equity

Q. How do you structure your analysis on the cost of common equity for PacifiCorp?

A. My analysis is similar in form to PacifiCorp’s analysis: I rely upon financial information from a group of comparable or “proxy” companies to determine a cost of common equity for PacifiCorp’s regulated utility operations. This is necessary because, as I explained earlier, PacifiCorp is a not a publicly-traded company. Consequently, market information is unavailable for its common stock. It is not possible to estimate PacifiCorp’s cost of common equity using direct evidence nor to compare that direct evidence with that of a comparable group.

1 **1. Selection of the Proxy Group**

2

3 **Q. What proxy group of companies did you select for purposes of your cost of**
4 **common equity analysis?**

5 A. My proxy group consists of the following companies: Alliant Energy Corporation,
6 Avista Corporation, DPL, Inc., IdaCorp, Inc., Portland General Electric Company,
7 Wisconsin Energy Corporation, and Xcel Energy, Inc.

8

9 **Q. Is this the same set of proxy companies the Company used?**

10 A. No.

11

12 **Q. Please explain the difference.**

13 A. For my analysis, I take Dr. Hadaway's proxy group containing 22 companies and
14 derive a group or utilities that I believe are more comparable to PacifiCorp. For
15 example, Dr. Hadaway's proxy group contains certain utilities that have too much
16 unregulated revenue. Moreover, some utilities Dr. Hadaway selected have excessive
17 risks such as exposure to construction of new nuclear generation, while others serve
18 markets that are not at all similar to PacifiCorp's markets. Finally, in my opinion, a
19 proxy group of twenty-two companies is simply too large and too complex for an
20 investor to consider in making a rational investment decision.

21 I therefore applied more refined criteria than Dr. Hadaway used to determine
22 comparability, and the result is a group of six utilities. I then added one additional
23 company: Avista Corporation.

1 My selection criteria produce a smaller proxy group of utilities that are much
2 more comparable to PacifiCorp than the Company's proxy group. Staff's proxy
3 group satisfies the principle I discussed earlier in my testimony: the cost of equity
4 should capture the salient features of the company providing regulated electricity
5 service in this state.

6
7 **Q. What selection criteria did you use to develop your proxy group?**

8 A. I used four selection criteria: 1) each utility must have 85 percent revenues from
9 electric operations; 2) each utility must not be exposed to significant nuclear
10 construction risk; 3) each utility must be primarily an electric utility; 4) each utility
11 must have fully integrated electric utility operations. Finally, I removed the
12 California utilities.

13
14 **Q. Why are your four selection criteria appropriate?**

15 A. They result in a proxy group of utilities similar to PacifiCorp: a relatively low level
16 of unregulated revenue, service to relatively similar markets, no nuclear construction
17 risk and fully integrated electric operations.

18
19 **Q. Would you please summarize the reasons why you removed certain companies
20 from Dr. Hadaway's proxy group to form your proxy group?**

21 A. Yes. I removed the following companies from Dr. Hadaway's proxy group due to
22 excessive (more than 15%) revenue from unregulated operations: ConEdison, DTE,
23 Duke, Edison International, Entergy, FPL, SCANA, SEMPRA, and Vectran. I

1 removed Black Hills because it is primarily a gas distribution company serving
2 significantly more gas than electric customers. I removed Northeast Utilities due to
3 its competitive pressures from high rates and non-integrated electric operations. I
4 removed Nstar because it is a distribution company. I removed PG&E because it is a
5 California utility with high rates and a very concentrated service area. I removed
6 Progress and Southern Company because unlike PacifiCorp, they have investments
7 in nuclear plants and are exposed to nuclear construction risk.

8
9 **Q. Why did you include Avista Corporation in your proxy group?**

10 A. Avista is a public service company with a significant presence in Washington, its
11 business is almost exclusively utility operations and it serves similar markets in
12 Washington to those served by PacifiCorp. While I recognize Avista is a combined
13 electric and gas utility, it is predominantly an electric company, and it has strong
14 similarities to PacifiCorp. In the end, my proxy group consists of seven companies
15 for use in my cost of common equity analysis.

16
17 **2. Discounted Cash Flow Analysis**

18
19 **Q. Please describe the Discounted Cash Flow (DCF) model, and the underlying
20 theory of that model in estimating the cost of equity.**

21 A. The DCF model is based on the “dividend discount model” of financial theory. It
22 relies upon the most fundamental principle of finance: the value (price) of any asset,
23 in this case, a security, is the present value of all future cash flows.

1 If one makes some simplifying assumptions about a company's financial
2 performance and cash flows, the following formula is the common equation used by
3 analysts and accepted by regulatory bodies to estimate cost of equity (K):

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

4
5
6 where: *K* = cost of equity
7 *P* = current price
8 *D* = expected dividend payment
9 *g* = constant rate of expected dividend growth
10

11 Essentially, this formula recognizes that the expected or required return of investors
12 is estimated by considering two factors: expectations of the stock's dividend yield
13 and the long-term constant growth in dividends per share.

14 This same model is used to price any stream of cash flows. For example,
15 with a fixed income security (bond) the dividend (*D*) is determined by the coupon
16 rate (*K*) and the growth rate is zero. As expectations change for future interest rates,
17 the price (*P*) of the bond adjusts to reflect new expectations to provide investor's
18 their required rate of return.

19 The DCF model embraces another fundamental principle of financial theory
20 that I referred to earlier in my testimony. This is known as the "efficient market
21 hypothesis". It assumes that market prices reflect all known information regarding a
22 security. Therefore, the DCF model provides confidence to an analyst that current
23 market prices accurately reflect what investors know about the relevant cash flows

1 and the opportunity cost associated with the investment decision for any particular
2 security.

3
4 **Q. Is the DCF method, or any other cost of common equity estimation method, a**
5 **mechanical process?**

6 A. No. Cost of common equity analysis is a process requiring considerable judgment in
7 producing credible outcomes. It is not a precise process that lends itself to results
8 that are supported by precise calculations and mechanistic formulas. In this regard,
9 my study relies upon published financial information, which, tempered by informed
10 judgment, produces a range of investor expectations for the Commission to consider.

11
12 **Q. Please explain how you used the DCF model to estimate PacifiCorp's cost of**
13 **common equity.**

14 A. I first calculated the expected dividend yield for each company in the proxy group,
15 and then estimated the dividend growth rate. The sum of expected dividend yield
16 and growth rate produces the investors' required rate of return on common equity.

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

19 A. I evaluated the actual dividend paid by each company in the proxy group, and I used
20 a range of "expected" prices to calculate dividend yield. This process accounts for
21 the diversity of expectations investors have with respect to future dividends over
22 time. Finally, as a check, I compare my dividend yield calculation for my proxy

1 group to that provided by both *Value Line* and the estimate of Dr. Hadaway for that
2 group.

3
4 **Q. Have you prepared a table showing your estimate of the expected dividend yield
5 for each utility in the proxy group, and how it compares to other evidence?**

6 A. Yes. The following table shows my expected dividend yield for each utility in my
7 proxy group in the middle column, entitled "Yield (%)". It shows dividend yield
8 from Value Line ("VL Yield (%)") and the indicated yield for each company in my
9 proxy group as presented by Company's witness ("Hadaway Yield (%)"):

10

Company	Price (\$)	Yield (%)	VL	Hadaway
			Yield (%)	Yield (%)
Alliant	32.00-34.00	4.60-4.90	4.7	5.04
Avista	19.50-21.00	4.80-5.10	4.6	N/A
DPL	24.00-25.50	4.75-5.00	4.4	4.57
IdaCorp	32.50-35.00	3.40-3.70	3.8	3.75
PGE	18.00-19.50	5.50-5.80	5.3	5.6
Wisconsin Energy	50.00-54.00	3.00-3.20	3.3	3.45
Xcel	20.00-22.00	4.60-5.00	4.8	4.85
Average		4.40-4.70	4.4	4.54

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18 **Q. What conclusion do you reach regarding dividend yield?**

19 A. I conclude that a reasonable estimate for the investor's expected dividend yield for
20 the proxy group is between 4.50 and 4.75 percent. This is consistent with the
21 average yield based on information from Value Line, as well as Dr. Hadaway for
22 each of the companies in my proxy group.

1 **Q. Turning to dividend growth, please explain the context of this part of the DCF**
2 **formula.**

3 A. In contrast to dividend yield, an investor's expectation for future dividend growth is
4 more difficult to estimate. As a result, this part of the DCF method is more
5 controversial because analysts use different metrics to support their conclusions.

6 It is important, however, to recognize that each investor has a unique
7 perspective on the information used to form their growth expectations, and each
8 investor individually considers and weighs the alternative indicators in deriving their
9 return expectations. This is supported by the fact that markets reflect two distinct
10 and complementary investment decisions simultaneously: a decision to buy stock
11 matched by another decision to sell that same stock. Because two investors reach
12 different decisions at the same market price (one decides to sell; the other decides to
13 buy), their expectations must differ.

14 As a result, no single indicator of growth is used by all investors. Therefore,
15 my analysis is an effort to consider the various alternative financial metrics available
16 to investors. I then infer from this data reasonable expectations of investors for the
17 long-term growth rate of dividends.

18

19 **Q. Is your approach using a broad set of published information consistent with**
20 **how the Commission has recently viewed the problem?**

21 A. Yes. The Commission, in its most recent order where cost of equity was fully
22 contested, indicated a preference for a broad set of data and methodologies to inform

1 its judgment. See *UTC v. Puget Sound Energy, Inc.*, Dockets UE-090704 & UG-
2 090795, Order 11 at page 103, ¶ 292 (April 2, 2010).

3
4 **Q. What financial information did you rely on in estimating investors' expectations**
5 **of long-term sustainable dividend growth in your DCF analysis?**

6 A. I considered several different estimates of growth including dividends, growth in
7 retained earnings, and growth in book value and earnings. This information, when
8 considered as a whole, indicate what investors can reasonably expect as a proxy for
9 long-term sustainable dividend growth in making their investment decision. Each of
10 these prospective indicators reflects the types of information that an investor may
11 consider in making a specific investment decision.

12 However, while each of these financial indicators is important, no single
13 indicator is sufficient or wholly reliable to estimate investor expectations of dividend
14 growth for the group of proxy companies. On the other hand, some indicators are
15 more important than others. For example, investors in utility stocks recognize that
16 utility returns are predominantly a function of historical investment, or book value.
17 Investor expectations for future growth are in large part driven by expectations for
18 growth in book value and the internal rate of growth in retained earnings. This data
19 represents the long-term financial fundamentals of a utility subject to rate base rate
20 of return regulation. Therefore, I give added weight to this metric in my analysis.

1 **Q. What set of financial indicators did you first consider in your DCF analysis?**

2 A. I began by examining *Value Line*'s indicators for dividend and book value growth
3 for the 2007 through 2015 time period for each of my proxy companies.
4

5 **Q. What does Value Line indicate as the expected growth rate for dividends with
6 the proxy group?**

7 A. *Value Line* indicates that the average dividend growth for my proxy group is 6.63
8 percent.
9

10 **Q. Is it appropriate to use this 6.63 percent dividend growth rate in developing the
11 investors' required rate of return?**

12 A. No. Investors recognize dividend growth rates are dramatically affected by dividend
13 policy. Consequently, this 6.63 percent figure cannot be used without further, closer
14 analysis.

15 Specifically, two companies in my proxy group, Avista and Wisconsin
16 Energy, significantly increased their dividends in 2009: 17 percent and 25 percent,
17 respectively. Obviously, neither company can sustain these growth rates over the
18 long term. In other words, investors would not expect Wisconsin Energy to double
19 its dividend every four years, which would occur if Wisconsin Energy sustained a 25
20 percent dividend growth rate.

21 If I exclude *Value Line*'s data points for these two companies, the result is an
22 average for the remainder of the group of 4.40 percent. Alternatively, if Avista and
23 Wisconsin Energy are included using a more reasonable expectation of 5.0 and 6.0

1 percent, respectively (a more reasonable estimate based upon other time series that
2 do not include 2009) the average for the proxy group is 4.75 percent.

3 I conclude from this data that a reasonable expectation for dividend growth
4 rate for my proxy group is 4.75 percent.

5
6 **Q. What does *Value Line* report for growth in book value for your proxy group?**

7 A. *Value Line* reports estimates of the expected growth in book value for the 2007-2015
8 time period as follows:

9

Company	Expected Growth (%)
Alliant	3.50%
Avista	3.50%
DPL	4.00%
IdaCorp	5.00%
PGE	2.50%
Wisconsin Energy	6.00%
Xcel	4.50%
Average	4.14%

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17 The average for the group is 4.14 percent. However, I note that *Value Line*'s
18 estimate for PGE is extremely low and not representative of what would be expected
19 by investors over the long-term. At some point investors should reasonably expect
20 PGE's book value to grow, and if it did not, the price of its stock would drop
21 accordingly. If I remove that data point, the average for the group is 4.41 percent.
22 Therefore, I conclude this data indicates a reasonable expectation for growth in book
23 value is no more than 4.50%.

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Q. What other financial data did you evaluate in developing your estimate for long-term growth in dividends for the proxy group?

A. The next set of data I analyzed is the expected internal rate of growth in retained earnings. This is the traditional “*b times r*” formula used on DCF analysis, where “*b*” is the firm’s retention ratio and “*r*” is the earned rate of return on book equity. In this analysis, I have set a “floor” of earned returns on book equity at 10.0 percent, despite *Value Line*’s indications that some firms are expected to earn below that amount. This provides a lower floor for book returns for a regulated utility because in the long-run (and according to DCF theory), a utility must provide for relatively stable returns on its book equity otherwise, investors over time, will bid the price of the stock down to achieve equilibrium. Therefore, those firms that show either low or excessively high book returns are adjusted to the 10.0 percent “floor” in order to capture expected long-term equilibrium in the relationship between share price and earned returns.

Q. Please provide an example of how you adjusted the earned book returns for a company in your proxy group.

A. One example is IdaCorp. *Value Line* indicates the expected return on book equity for IdaCorp is 7.5 percent. Its shares currently trade around \$32. If IdaCorp cannot increase its earned return on book equity so investors earn their cost of capital, the price of its shares will drop. The dividend yield therefore will increase to reflect the continued low earnings power of the company. Equilibrium will be reached and

1 investors will earn their cost of capital based upon long-term expectations of
2 sustained poor returns on book equity for IdaCorp. Therefore, in my analysis of
3 growth from retained earnings I have adjusted IdaCorp's return on book equity from
4 7.50% to 10.0%.

5 I have made a similar adjustment to the earned return in my internal growth
6 analysis for DPL. *Value Line* indicates an expected 28 percent return on book equity
7 for that company. Similar to, but the opposite of the IdaCorp situation, investors in
8 DPL cannot expect the company to maintain this high level of return on book over
9 the long-term. However, if 28 percent became a reasonable return expectation for
10 DPL investors, the stock price would correspondingly increase as investors
11 internalized high earned returns into long-term growth expectations for it stock.

12 In short, my use of adjusted "r" in the formula is an attempt to achieve long-
13 term equilibrium in the analysis for those firms with either exceptionally low or high
14 earned returns on book equity.

15
16 **Q. What is the growth from retained earnings data for your proxy group?**

17 A. The following data I calculated based upon the traditional "*b times r*" formula for
18 estimating growth from retained earnings:

Company	Expected Growth (%)
Alliant	5.20%
Avista	3.15%
DPL	5.00%
IdaCorp	5.00%
PGE	4.00%
Wisconsin Energy	6.00%
Xcel	4.75%
Average	4.75%

The adjusted internal “b times r” data for the proxy group indicates an average long-term rate of growth from retained earnings of 4.75 percent. Again, the data indicate an outlier - Avista. If I eliminate Avista from the calculation of the average, the average for the group increases to 5.00 percent.

Avista recently increased its dividend, as I discussed earlier in my analysis of dividend growth. Avista has announced it is targeting a 60% payout ratio and investors should recognize this target. Therefore, an adjusted “b times r” for Avista indicates an internal growth rate of 4.00 percent (0.40 x 10.0). If I include that estimate in the calculation of the average for the proxy group, the average increases to 4.90 percent.

Q. What is your conclusion of the financial data for expected internal growth from retained earnings?

A. From my internal growth analysis, I conclude investors can expect growth from retained earnings of no more than 5.00 percent.

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Q. Are analysts' earnings estimates or other earnings targets reliable indicators of long-term sustainable growth in dividends per share for use in the DCF formula?

A. No. Analysts' earnings targets are not a good proxy for long-term dividend growth, and these targets are typically short-term in nature and subject to change over time for many different reasons. Analysts' earnings estimates also tend to "overstate" what investors can reasonably expect because they are provided by persons with an interest in selling securities. In other words, analysts' earnings estimates have an element of hype.

Q. Does PacifiCorp's witness agree with your assessment about the reliability of earnings growth estimates by stock brokers?

A. Yes. PacifiCorp's witness Dr. Hadaway acknowledges the inherent upward bias of earnings estimates:

IBES long-term (earnings) growth estimates are associated with realized growth in the immediate short-term-future. Over long horizons, however, there is little forecastability in earnings, and analysts' estimates tend to be overly optimistic. *Exhibit No. ___ (SCH-1T) at page 36:25-28.*

On the other hand, an earnings estimate is widely publicized information that investors see and consider. In my opinion, an earnings estimate represents the best possible scenario for a firm in the near to medium-term, but it is not a surrogate for long-term sustained growth in dividends that would support an investment decision.

1 **Q. Please describe how you evaluate earnings estimates in your growth in**
2 **dividends analysis.**

3 A. Because I do not have access to published earnings estimates, I reviewed the
4 earnings estimates data PacifiCorp provides for each company in my proxy group.
5 *See Exhibit No. ___ (SCH-6) page 2.*
6

7 **Q. What conclusion do you draw from this data?**

8 A. For my proxy group, the data in Dr. Hadaway's exhibit shows the *Value Line*
9 earnings growth estimate is in the 7.00 to 8.00 percent range. These are too high for
10 use as a proxy for dividend growth. Earnings estimates in the 7.00 to 8.0 percent
11 range are not reasonable or sustainable in the long-run as a proxy for dividend
12 growth.
13

14 **Q. Why do believe that investors consider this figure an unreasonable estimate of**
15 **long-term dividend growth?**

16 A. All one has to do is add 8.00% growth to a 4.75% dividend yield: it produces a
17 12.75% ROE. This is an ROE substantially higher than even Dr. Hadaway proposes.
18 This is not realistic. The bottom line is investors simply do not consider such high
19 earnings estimates as a credible indicator of the rate of long term dividend growth.

20 Alternatively, one could also consider *Value Line's* earnings growth estimate
21 of 8% in the context of an achieved internal growth rate. Assume an 8.00% growth
22 rate and an average retention ratio of 40%. The proxy group would have to realize a

1 20% return on equity in order to achieve that rate of growth. $(0.40 \{b\} \text{ times } 20.0\%$
2 $\{r\} = 8.0\% \{growth\})$.

3 Consequently, I conclude that *Value Line's* earnings estimates are not
4 representative of what an investor could reasonably expect as an estimate of long-
5 term growth in dividends.

6
7 **Q. What other earnings estimates are relevant to investor expectations for future**
8 **dividend growth?**

9 A. I consider earnings estimates from Zacks and Thompson. These firms estimate an
10 average range of earnings growth of 5.60 and 6.00 percent, respectively, for my
11 proxy group. Since I do not have an earnings growth estimate by Thompson for
12 Avista, this average does not include Avista. I have included an IBES² estimate for
13 Avista in the calculation of that group average.

14 I note these services estimate that Wisconsin Energy earnings are expected to
15 grow 8.0 percent. As I explained previously, this is not sustainable, and therefore, it
16 is unreasonable. If I remove this data point the proxy group, the average is 5.10
17 (Zacks) and 5.40 percent (Thompson), respectively.

18 In conclusion, investors see the possibility of near-term earnings growth for
19 the proxy group to not exceed 5.50%.

20
21 **Q. Please summarize the data you considered in estimating investor expectations**
22 **for long-term dividend growth.**

² Institutional Brokers' Estimate System

1 A. The following list indicates the data in a summary form:

Data Considered	Average %
Dividends per share	4.75%
Book Value per share	4.50%
Retained Earnings	5.00%
Earnings per share	5.50%

6

7 **Q. What is your conclusion with respect to investor's long-term growth**
8 **expectations for PacifiCorp?**

9 A. Investors can reasonably expect a long-term growth in dividends in the range of 4.50
10 to 5.00 percent.

11

12 **Q. Please summarize your DCF analyses for PacifiCorp.**

13 A. My estimated average dividend yield for the proxy group is 4.50 to 4.75 percent, and
14 the growth rate in dividends is 4.50 to 5.00 percent. Combining these two elements
15 results in a cost of common equity in the range of 9.00 to 9.75 percent, using the
16 constant growth DCF method. As I testified earlier, consistent with Commission
17 policy and sound financial theory, I place greatest reliance on this DCF analysis and
18 its results. However, I consider two other methods as a check on these results.

19

20 **3. Capital Asset Pricing Model Analysis**

21

22 **Q. Please generally describe the Capital Asset Pricing Model (CAPM) and its**
23 **underlying theory.**

1 A. The CAPM was developed in the 1960s and 1970s as an extension of modern
2 portfolio theory, which studies the relationships between risk, diversification, and
3 expected returns. The essence of modern portfolio theory is to measure risk by
4 volatility, or “variance”, to use a term more commonly associated with statistics.

5 The CAPM also embraces the concept of diversification: investors should
6 only be compensated for those risks that cannot be diversified through a portfolio
7 effect.

8

9 **Q. What is the general form of the CAPM?**

10 A. The general form is:

11
$$K = R_f + \beta(R_m - R_f)$$

12 where: K = cost of equity
13 R_f = risk-free rate
14 R_m = expected return on market
15 β = beta
16 R_m-R_f = expected market risk premium
17
18

19 **Q. Do you have any general comments regarding the CAPM and using CAPM to**
20 **estimate the cost of capital?**

21 A. Yes. The CAPM and modern portfolio theory have made significant contributions to
22 finance and the evaluation of stock prices and returns. The CAPM has significant
23 appeal due to extensive research. However, CAPM is a methodology that should be
24 used with considerable caution. Therefore, while I conduct a CAPM analysis as a
25 “check” to my DCF results, the Commission should view the results of the study
26 with considerable caution.

1

2 **Q. Please explain why the CAPM should be used with considerable caution.**

3 A. First, each of the elements in the formula is difficult to measure because there are
4 simply too many issues surrounding the model's inputs. For example, what is the
5 risk-free rate? What is the return on market? How is *beta* calculated and what
6 adjustments are appropriate to that calculation?

7 Second, most CAPM analyses presented by cost of capital witnesses presume
8 the past is indicative of the future. However, I do not believe it is reasonable to
9 consider, for example, that the long-term returns of stocks over bonds since the
10 1920's are indicative current investor expectations of future market risk premiums.
11 In any event, even if one accepts the historical time series as a proxy for the market
12 risk premium, there is considerable controversy over the calculation of that historical
13 time series, including whether the arithmetic or geometric mean is appropriate.

14 Finally, I am skeptical of any model which estimates an investor's rate of
15 return when the variables of the model are unrelated to the actual and anticipated
16 financial performance of a firm or set of firms in a proxy group. Specifically, β is
17 the only factor in the CAPM that is unique to the specific companies being analyzed.

18

19 **Q. Turning to your CAPM analysis, please explain the "risk-free" rate you used in
20 your application of the CAPM, and indicate what rate you employed.**

21 A. In application of the CAPM, the risk-free rate (R_f) is generally recognized as the rate
22 of United States Treasury securities. However, using the price of long-term Treasury
23 securities as a proxy for the risk-free rate is itself problematic, because these

1 securities are not “risk free”; they still carry interest rate risk for an investor.

2 Nonetheless, two general types of Treasury securities are often used as a proxy for
3 this component - short-term Treasury bills and long-term Treasury bonds.

4
5 **Q. What is the long-term rate for United States Treasury securities you used as a
6 proxy for the risk-free rate in your CAPM analysis?**

7 A. 4.20 percent, which is the yield for long-term Treasury securities at the time I
8 prepared this testimony.

9
10 **Q. What is “beta”, and what figure for beta did you employ in your CAPM
11 analysis?**

12 A. “Beta” is a measure of the relative volatility of a particular stock’s return in relation
13 to the overall return on the market. Modern portfolio theory states that the return of
14 a stock in relation to that of the market is its indication of risk. A company whose
15 stock has a *beta* greater than 1.0 indicates the stock is more volatile than the market
16 as a whole. Conversely, a company whose stock has a *beta* less than 1.0 indicates
17 the stock is less volatile than the market as a whole.

18 Utility stocks traditionally have a *beta* below 1.0. In other words, the returns
19 for utility stocks exhibit less volatility than the market overall, and investors will
20 expect lower returns for investments in these companies. This makes sense because
21 utility companies are highly regulated and have significant protections as
22 monopolies.

1 **Q. What is the average “beta” for your proxy group?**

2 A. The average *beta* for my proxy group is 0.69, based on data reported by *Value Line*.
3 Therefore, I use 0.70 as the *beta* for the proxy group in my CAPM analysis.

4
5 **Q. How did you estimate the market risk premium component in your CAPM
6 analysis?**

7 A. I estimate the market risk premium component ($R_m - R_f$) by considering what
8 represents the premium investors expect for buying common stocks rather than “risk
9 free” government bonds.

10 First, I note that CAPM, like DCF, is an *ex ante* proposition. In other words,
11 investors’ future expectations are relevant. The CAPM requires that the current risk-
12 free rate be analyzed with expected future market returns. Investors’ expectations
13 are shaped by today’s events. Consequently, the relevant data are the current risk-
14 free rate matched with current market return expectations of investors.

15
16 **Q. How did you measure market risk premium?**

17 A. I estimated the long-term expected return of a fully diversified portfolio of stocks as
18 the surrogate for expected return on market component of the CAPM.

19 There is no single factor that points to an objectively verifiable *ex ante*
20 estimate for a return “on the market”. Instead, my CAPM analysis is based upon a
21 range of expectations for investors in current financial markets, including what some
22 would consider aggressive expectations for investor returns in a diversified portfolio
23 of common stocks.

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Q. What did you use as an estimate of investor’s return requirements, or the market, for a fully diversified portfolio of equities?

A. Based upon my research and analysis, a reasonable expectation of a return for a fully diversified portfolio of equities, i.e. “the market”, is currently 10 percent and an “aggressive” estimate for a market return of 12 percent. The latter figure shows the upper bound of what investors might expect for owning a fully diversified portfolio in today’s markets.

Q. Based upon these inputs to the CAPM, what is your estimate of the cost of equity for PacifiCorp Corporation?

A. With a risk-free rate of 4.20 percent, an expected return on the market of 10.0 percent and a *beta* of 0.70, the CAPM produces an expected return on equity of 8.30 percent $\{4.20 + [0.70(10.0-4.20)]\}$. On the “aggressive” side, if investors expect a return on the market of 12 percent, then the CAPM result for PacifiCorp would be 9.70 percent $\{4.20 + [0.70(12.0-4.20)]\}$. The average of these two figures is 9.00 percent.

Q. What is your conclusion concerning the cost of equity for PacifiCorp based on the CAPM?

A. CAPM produces a very wide range of results: 8.30 percent to 9.70 percent. In addition, I would observe that the results are highly dependent upon both future market equity returns and long-term rates on Treasuries. Finally, CAPM shows the

1 extreme impact of the model if very favorable results for overall market returns are
2 expected by investors. In other words, only under current “aggressive” market return
3 expectations, does CAPM produce an estimate consistent with my DCF results. For
4 these reasons, I do not recommend the Commission place high reliance on the
5 CAPM.

6
7 **4. Risk Premium Analysis**

8
9 **Q. Did you undertake a Risk Premium analysis as a check on your cost of equity**
10 **capital recommendation?**

11 A. Yes, though indirectly. I am not an advocate of risk premium methodologies.
12 However, I present a risk premium analysis for the Commission’s consideration that
13 considers the DCF result in comparison to the market cost of long-term debt for
14 PacifiCorp.

15
16 **Q. Please explain what the Commission should consider in the context of a risk**
17 **premium analysis, if the Commission decides to consider this method.**

18 A. First the Commission should consider the current cost of long-term debt investors are
19 willing to accept today when buying PacifiCorp’s long-term securities. This is
20 measured by the coupon rate on the bonds PacifiCorp is issuing currently. The
21 difference between the coupon rate and an ROE recommendation is called the
22 “spread” or “risk premium”, which is an estimate of the *ex ante* market risk

1 premium. The magnitude of this spread indicates whether the ROE figure is
2 reasonable.

3
4 **Q. Please explain your analysis.**

5 A. In 2009, PacifiCorp issued \$650 million of 30-year first mortgage bonds with a
6 coupon rate of 6.00 percent. PacifiCorp sold these securities at a discount, with an
7 effective cost of 6.069 percent. Thus, PacifiCorp has proven it is able to sell new 30-
8 year debt at 6.069 percent.

9 Assuming PacifiCorp's cost of equity is 10.60 percent, as recommended by
10 PacifiCorp's witness Dr. Hadaway, the explicit risk premium in that 10.60 percent
11 cost of equity exceeds 450 basis points ($10.60 - 6.069 = 4.53$ percent, or 453 basis
12 points).

13
14 **Q. In your opinion, is a 450 basis point premium reasonable?**

15 A. No. In my opinion, a 450 basis point spread is excessive compensation for equity
16 owners over those investing in PacifiCorp's long-term bonds.

17
18 **Q. Why do believe that a 450 basis point premium is excessive?**

19 A. First, consider the opportunity costs for investors in long-term securities today. As I
20 previously noted in my CAPM study, long term Treasury securities are
21 approximately 4.20 percent. PacifiCorp sold comparable long-term debt at just over
22 6.0 percent - a 180 basis point premium. PacifiCorp proposes a ROE of 10.60
23 percent - a 453 basis point premium. For equity investors, this 453 basis points

1 represents a spread two and one half times the spread of its debt costs ($2.5 * 180 =$
2 450) and over three and one-half times over that of comparable Treasury securities
3 ($10.60 - 4.20 = 640$ basis points; $3.5 * 180 = 630$).

4 Therefore, the Commission should ask itself the following question: is an
5 equity risk premium of 450 basis points over its debt costs fair? The Commission
6 should come to the same conclusion I reach in today's capital markets. A 450 basis
7 point premium implicit in Dr. Hadaway's case in today's capital markets is
8 excessive.

9
10 **Q. How did you then compare the results of your DCF study in the context of a**
11 **risk premium analysis?**

12 A. My DCF result represents a premium of 300 to 375 basis points over PacifiCorp's
13 long-term debt costs. I conclude that a premium in this range, which is
14 approximately twice the 180 basis point spread of PacifiCorp's long-term debt cost
15 compared to comparable Treasuries, is adequate compensation for equity owners in
16 today's capital markets.

17
18 **5. Summary of Return on Equity Recommendation**

19
20 **Q. Please summarize the results of your cost of common equity analyses.**

21 A. I place primary reliance on my DCF study, which indicates a return on equity range
22 of 9.0 to 9.75 percent. My CAPM study produces a broader range of 8.30 to 9.70
23 percent. Finally, a risk premium analysis supports my DCF estimate.

1 I therefore conclude PacifiCorp's cost of common equity is 9.50 percent.
2 The CAPM and risk premium analysis corroborate the reasonableness of this result.

3
4

VI. COST OF DEBT

5

6 **Q. What is PacifiCorp's overall cost of debt?**

7 A. PacifiCorp's overall cost of debt is 5.73 percent. As I explained earlier in my
8 testimony on capital structure, Staff includes short-term debt in PacifiCorp's capital
9 structure for ratemaking purposes, while PacifiCorp includes no short-term debt.
10 This explains why PacifiCorp calculates its overall cost of debt as 5.89 percent,
11 while I calculate PacifiCorp's overall cost of debt as 5.73 percent.

12

13 **Q. What is PacifiCorp's cost of long-term debt?**

14 A. The Company's cost of long-term debt is 5.89 percent. This is the cost proposed by
15 Company witness Mr. Williams.

16

17 **Q. Does Staff accept the Company's proposed cost of long-term debt?**

18 A. Yes.

19

20 **Q. What cost rate did you use for pricing PacifiCorp's short-term debt?**

21 A. I used 3.00 percent to price short-term debt in PacifiCorp's capital structure.

22

1 **Q. How did you derive this 3.00 percent cost rate?**

2 A. I examined the cost formulas contained in PacifiCorp's short-term debt credit
3 facilities and the cost it achieved when issuing commercial paper. I also considered
4 the actual cost of short-term debt of Avista and Puget Sound Energy based on the
5 costs contained in their most recent rate cases, both of which were either filed or
6 completed this year. According to those filings, Avista's cost of short-term debt is
7 3.40 percent and Puget Sound Energy's cost of short-term debt is 2.50 percent.
8 These figures are all-in costs, which include costs associated with maintaining short-
9 term credit facilities of each company.

10 My 3.00 percent cost of short-term debt is consistent with the terms of the
11 Company's short-term debt credit facilities, and it is within the range achieved by
12 both Avista and Puget Sound Energy.

13
14 **Q. Please summarize your cost of debt calculation.**

15 A. I accepted the Company's cost of long-term debt of 5.89 percent. I then include 3
16 percent of short-term debt in the capital structure at a 3.00 percent cost rate. This
17 results in a 5.73 percent overall cost of debt for PacifiCorp, calculated by combining
18 both the weighted cost of long-term debt and short-term debt as shown in the table
19 in the summary section of my testimony on page 2, beginning at line 6.³

20

³ The overall cost of debt is calculated by combining the weighted cost of short-term and long-term debt divided by the debt ratio $((2.96\% + 0.90\%)/53.2\%) = 5.73\%$.

1 **VII. TOTAL COST OF CAPITAL**

2

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

4 A. PacifiCorp's total cost of capital is 7.48 percent. I provide the components of the
5 capital structure and the corresponding cost rates in the table on page 2 of my
6 testimony.

7
8 **Q. Is a 7.48 percent cost of capital adequate to provide the Company a sufficient**
9 **level of earnings to maintain financial integrity?**

10 A. Yes.

11

12 **VIII. RESPONSE TO COMPANY COST OF CAPITAL TESTIMONY**

13

14 **Q. Have you reviewed the testimony of PacifiCorp's cost of capital witnesses Dr.**
15 **Samuel Hadaway and Mr. Bruce N. Williams?**

16 A. Yes.

17

18 **Q. What are the primary areas of difference between your cost of capital**
19 **recommendations and the Company's proposals?**

20 A. The primary areas of difference are: 1) Equity Ratio – I recommend a 46.5 percent
21 equity ratio; the Company proposes a 52.10 percent equity ratio; 2) Treatment of
22 short-term debt – I include a reasonable amount of short-term debt in the capital
23 structure; the Company excludes short-term debt; 3) Cost of Equity – Dr. Hadaway

1 and I use different proxy groups and derive different estimates for the expected long-
2 term dividend growth rate in our respective DCF studies.

3
4 **A. Equity Ratio**

5
6 **Q. What is the Company's justification for its proposed 52.10 percent equity ratio?**

7 A. Mr. Williams claims his proposed capital structure will provide more flexibility,
8 better access to capital, more competitive cost of debt, more stable credit ratings and
9 enable the Company to maintain its financial metrics. He also claims it will improve
10 the Company's ability to finance its capital budget when it is necessary for the
11 Company to access additional sources of external capital. *Exhibit No. ___ (BNW-1T)*
12 *at pages 13-15.*

13
14 **Q. What is your response?**

15 A. I do not contest the Company's point that a more equity rich capital structure
16 provides more financial flexibility, increased financial stability and higher bond
17 ratings. However, the Company fails to address the issue of economy. Simply put, a
18 52.10 percent equity ratio is too expensive. The Company's analysis fails to show
19 that the benefits of a 52.10 percent equity ratio exceed the costs.

20
21 **Q. In his direct testimony at page 5, Mr. Williams argues for higher equity returns,**
22 **a 52.10 percent equity ratio, and less leverage in its capital structure as**

1 **necessary to cope with the Company's burgeoning capital budget and the**
2 **corresponding need to access capital. What is your response?**

3 A. A burgeoning capital budget is not unique to PacifiCorp. It is the norm for virtually
4 all electric companies today, which are coping with aging infrastructure, new
5 resource requirements, environmental compliance, etc. My recommended 46.5
6 percent equity ratio is appropriate because it is sufficient to achieve a corporate
7 credit rating of "BBB" and an "A-" secured rating, enabling the Company to access
8 new capital and refinance its maturing debt on reasonable terms. These are the credit
9 ratings achieved by the large majority of investor-owned electric utilities operating in
10 this country today.

11
12 **Q. What is the impact on customers of PacifiCorp's proposed capital structure?**

13 A. PacifiCorp's proposed capital structure with 52.1 percent equity increases the
14 Company's Washington revenue requirements by about \$5.1 million. As I
15 previously stated, the Company has failed to show the benefits of this added equity
16 to customers.

17
18 **Q. Did you compare the cost of the Company's 52.01 percent equity ratio to the**
19 **explicit benefits of interest rate savings due to a higher bond rating?**

20 A. Yes. I calculated this figure using the Company's direct case, replacing the
21 Company's proposed 52.10 percent equity ratio with Staff's recommended 46.5
22 percent equity ratio. This \$5.1 million figure represents approximately 8 percent of
23 the Company's total operations.

1 I then estimate Washington's share of total company interest payments to be
2 \$30 million dollars. Based upon this estimate, PacifiCorp's total cost of debt would
3 have to increase approximately 113 basis points to cover the cost of the proposed
4 higher equity ratio. I calculated this basis point figure by adding the \$5.1 million
5 cost to the Washington's estimated share of interest expense, and adjusted it ratably
6 to calculate a new system interest expense. Although this is a rough approximation,
7 it shows the relative high cost of additional equity compared to the lower interest
8 expense that would be achieved by the higher equity ratio.

9
10 **Q. What did you use to consider the added costs of a higher equity ratio compared**
11 **to the estimate of lower interest expense as a measure of reasonableness?**

12 A. Dr. Hadaway has some preliminary information of the spreads between "Aa" and
13 "baa" utility bonds. In his testimony, Exhibit No. ___ (SCH-1T), page 23, Table 2,
14 he depicts the recent spreads between these two ratings for utility debt. Even if
15 customers pay for super-high-quality bond ratings (Aa), the spread over average
16 investment grade bonds (Baa) is very narrow; only 40 to 50 basis points, and in some
17 periods as low as 25 basis points. Only during the height of the financial crisis did
18 the higher rating provide an explicit benefit.

19 Furthermore, it should be noted that any benefit is only captured at the
20 margin of the Company's cost to issue new debt. In other words, customers pay for
21 higher equity and associated Federal income tax all the time, but would have only
22 have received the benefits of the lower interest costs for any incremental debt issued
23 when spreads widened during the financial crisis.

1 In short, a high bond rating is expensive insurance for very rare events
2 indeed.

3
4 **B. Short-Term Debt Ratio**

5
6 **Q. Mr. Williams testifies he did not include short-term debt in the capital structure**
7 **because “the Company does not expect to have any short-term debt during the**
8 **period ending December 31, 2010.” Exhibit No. ___ (BNW-1T) at page 3, lines 9-**
9 **10. Is this an acceptable reason to exclude short-term debt from the capital**
10 **structure for ratemaking purposes?**

11 A. No. As I explained earlier in my testimony on capital structure, the issue is how a
12 utility should finance its operations and take advantage of the low cost source of
13 funds available to it. Short-term debt is a low cost, flexible form of capital that can
14 be accessed promptly. A utility should use this source of capital to keep costs low.

15
16 **Q. Does PacifiCorp currently have short-term debt credit facilities?**

17 A. Yes. As I described earlier, PacifiCorp has \$1.5 billion worth of short-term debt
18 credit facilities in place.

19
20 **Q. How does this compare to your recommendation for including short-term debt?**

21 A. I propose to include \$500 million of short-term debt in the capital structure, which is
22 well within the Company’s capabilities under its current short-term debt credit lines.

1 **C. Proxy Groups**

2
3 **Q. Do you use the same proxy group as Dr. Hadaway for purposes of analyzing the**
4 **cost of equity?**

5 A. No. As I explained earlier in my testimony, Dr. Hadaway uses a proxy group of 22
6 companies. I used more refined criteria, resulting in a group of six companies, and
7 then I added Avista. I explained earlier why my criteria are appropriate.

8
9 **D. DCF Growth Rates**

10
11 **Q. Regarding application of the DCF method, please identify the key areas where**
12 **you and Dr. Hadaway agree and disagree.**

13 A. Dr. Hadaway and I both use the DCF method, though we do not use it in exactly the
14 same way. Nonetheless, for the companies in my proxy group, our dividend yield
15 estimates are very close. For my proxy group, Dr. Hadaway's dividend yield
16 estimate is 4.54 percent, and my estimate is between 4.5 and 4.75 percent. However,
17 we do not agree on the appropriate dividend growth component of the DCF formula.

18
19 **Q. Please critique Dr. Hadaway's DCF constant dividend growth estimate.**

20 A. Dr. Hadaway's constant growth DCF estimate shows tremendous variability: He
21 shows an ROE for ConEdison of 8.4% and a ROE for Wisconsin Energy of 12.3%.
22 This is simply too broad a range for a group of companies that are supposed to be
23 "comparable". *Exhibit No. ____ (SCH-6) at page 2, column (8).* In PacifiCorp

1 Docket UE-050684, the Commission stated: “We note that the divergence in the
2 extremes of analytical results presented by cost of capital witnesses had been
3 growing in our recent proceedings. We find these extreme values to be of little
4 practical use.” *Docket No. UE-050684 Order 04 at page 94, ¶ 260 (April 17, 2006).*
5 Such variability in Dr. Hadaway’s DCF results renders them unreliable as well.

6
7 **Q. Please critique Dr. Hadaway’s dividend growth estimate in his multi-stage DCF**
8 **analysis.**

9 A. In his multi-stage DCF analyses, Dr. Hadaway considers the long-term growth rate
10 in GDP as a proxy for long-term dividend growth of his proxy group. He calculated
11 an estimate of GDP growth of 6.0 percent. To derive this figure, Dr. Hadaway
12 simply uses the average of the last 60 year cumulative decade averages of GDP
13 growth as a proxy for his estimate of long-term dividend growth. *See Exhibit No.*
14 *___ (SCH-1T) at pages 35-38 & Exhibit No. ___ (SCH-5).*

15 This is contrary to the Commission’s order in PacifiCorp’s rate case in 2005,
16 where the Commission stated that if GDP is used, then forward-looking GDP growth
17 estimates should be used: “However, in this case we find persuasive Mr. Gorman’s
18 argument, that if growth in GDP is used for this critical input to the DCF formula, it
19 should be forward-looking, not an historical average.” *Docket No. UE-050684,*
20 *Order 04 at page 94, ¶ 261 (April 17, 2006).*

21 The forward-looking GDP growth estimates are considerably lower than 6
22 percent. For example, the Congressional Budget Office projects average growth in
23 nominal GDP of only 4.25 percent through 2019.¹ The Federal Reserve Open

1 Market Committee projects “long run” real GDP growth in the range of 2.4 to 3.0
2 percent, and its PCE price inflation estimate is 1.5 to 2.0 percent-indicating a
3 nominal GDP growth rate of at most 5%.ⁱⁱ These estimates of long-term GDP
4 growth are consistent with the GDP growth of 4.2 and 4.9 percent respectively for
5 the last twenty-years. *Exhibit No. ___ (SCH-5) at page 1, columns 3, 10 & 20 Year*
6 *Average.*

7 Interestingly, Dr. Hadaway acknowledges that more weight should be given
8 to more recent forecasts of GDP growth. *See Exhibit No. ___ (SCH-1T) at page*
9 *37:8-10 & 22-23.* Yet, Dr. Hadaway shows the average GDP growth for the two
10 most recent decades is 4.55 percent, not the 6 percent figure he used as a proxy for
11 dividend growth. *Exhibit No. ___ (SCH-5) at page 1, columns 3, 10 & 20 Year*
12 *Average.*

13
14 **Q. What is the result of the multi-stage DCF analyses had Dr. Hadaway used a**
15 **GDP growth estimate more in the range of the GDP growth estimates of the**
16 **Congressional Budget Office, the Federal Reserve Open Market Committee,**
17 **and the more recent decades of actual GDP growth?**

18 A. Dr. Hadaway’s multi-stage DCF result would produce an ROE estimate far lower
19 than his testimony suggests. According to the Company’s response to Staff Data
20 Request 105, substituting a 4 percent GDP growth would lower his ROE estimate a
21 full 200 basis points, from 10.60 percent to 8.60 percent. Using a 5 percent GDP
22 would lower his ROE estimate a full 100 basis points, from 10.60 percent to 9.60
23 percent.

1 This also exposes a key flaw in his use of GDP growth as a proxy for
2 dividend growth: a change in the GDP growth estimate produces a one-for-one
3 change in the cost of equity result from the multi-stage DCF model. In other words,
4 under Dr. Hadaway's approach, the use of the GDP growth rate "drives" his multi-
5 stage internal rate of return calculations.

6 In any event, assuming GDP growth is an appropriate proxy for dividend
7 growth in the DCF formula, using more reasonable GDP growth estimates
8 demonstrate Dr. Hadaway's estimate is excessive. Indeed, using a reasonable and
9 rational 5.0 percent GDP growth factor in his multi-stage DCF analysis produces an
10 ROE estimate of 9.60, percent which is consistent with my DCF results.

11
12 **Q. What is your conclusion about the cost of common equity analysis presented by**
13 **PacifiCorp's witness in this case?**

14 A. Dr. Hadaway's use of earnings and GDP as a proxy for investor expectations of
15 growth in dividends produce unreasonable ROE estimates. Even if one accepts GDP
16 growth as a proxy for long-term expectations of dividend growth, had he used more
17 reasonable estimates of GDP growth in his multi-stage DCF analyses, the result
18 would support a return on equity in the mid 9 percent range.

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

21 A. Yes.

22

ⁱ www.cbo.gov/ftpdocs/

ⁱⁱ www.federalreserve.gov/monetarypolicy/fomcminutes