

Exhibit No.____(KGS-1T)
Docket UE-14____
Witness: Kurt G. Strunk

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

PACIFIC POWER & LIGHT COMPANY,
a division of PacifiCorp

Respondent.

Docket UE-14____

**PACIFIC POWER & LIGHT COMPANY
DIRECT TESTIMONY OF KURT G. STRUNK**

May 2014

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ATTACHED EXHIBITS

Exhibit No.__(KGS-2)—Experience
Exhibit No.__(KGS-3)—ROE Recommendation of 10.0 Percent
Exhibit No.__(KGS-4)—Dividend Yields 1993 – Present
Exhibit No.__(KGS-5)—30 Year Treasury Yields 1993 – Present
Exhibit No.__(KGS-6)—Electric Proxy Group of Twenty-Four Companies
Exhibit No.__(KGS-7)—Screening of Proxy Group
Exhibit No.__(KGS-8)—Electric Utility Return on Equity Data
Exhibit No.__(KGS-9)—Sustainable Growth Inputs
Exhibit No.__(KGS-10)—DCF Analysis
Exhibit No.__(KGS-11)—Yield-Plus-Growth-Model
Exhibit No.__(KGS-12)—S&P 500 Forward Looking Market Risk of Premium
Exhibit No.__(KGS-13)—CAPM Results
Exhibit No.__(KGS-14)—Risk Premium Model
Exhibit No.__(KGS-15)—Comparable Earnings Model
Exhibit No.__(KGS-16)—Comparable State Regulatory Returns

1 **Q. Please state your name, business address, and present position with Pacific**
2 **Power & Light Company (Pacific Power or Company), a division of PacifiCorp.**

3 A. My name is Kurt G. Strunk. I am a Vice President at National Economic Research
4 Associates, Inc. (NERA). NERA is a firm of consulting economists with its principal
5 offices in a number of major U.S. and European cities. My business address is 1166
6 Avenue of the Americas, New York, New York 10036.

7 **QUALIFICATIONS**

8 **Q. Please describe your 1ducation.**

9 A. I hold an M.B.A. in Finance with Distinction from INSEAD (The European Institute
10 of Business Administration) and an honors degree in Economics from Vassar
11 College.

12 **Q. Please describe your professional experience.**

13 A. Since the mid-1990s, my work at NERA has focused on strategic and corporate
14 financial issues facing public utilities in the natural gas, oil and electric power sectors.
15 I have served as a testifying expert on public utility rate matters before federal, state
16 and provincial regulatory commissions in the U.S. and Canada, and in several U.S.
17 court proceedings. I have also served as a consulting expert in dozens of
18 administrative law proceedings before North American and European energy
19 regulators. I have served as an advisor in over 50 rate cases.

20 My assignments frequently require that I determine the appropriate return on
21 equity capital for energy companies. I have calculated and supported required rates
22 of return in traditional rate cases for regulated entities and in litigation and advisory
23 work. I also speak on the topic at industry conferences.

1 My current curriculum vitae, which more fully details my educational,
2 consulting and testifying experience, is provided as Exhibit No.__(KGS-2).

3 **PURPOSE OF TESTIMONY AND SUMMARY OF OPINIONS**

4 **Q. Please explain the purpose of your testimony.**

5 A. On behalf of Pacific Power & Light Company (Pacific Power or Company), a
6 division of PacifiCorp, I present my estimate of the cost of equity necessary to
7 provide a fair and reasonable return for the Company's equity investors.

8 I recommend that the Washington Utilities and Transportation Commission
9 (Commission) use this fair return on equity to calculate the Company's revenue
10 requirement and to set rates in this proceeding.

11 **Q. Please summarize how you derive your estimate of the Company's cost of equity.**

12 A. To arrive at the cost of equity, I apply objective criteria to screen for a set of
13 comparable companies, which I refer to as the proxy group. I estimate the expected
14 equity return for these companies using a Discounted Cash Flow (DCF) model and a
15 Capital Asset Pricing Model (CAPM) model. I also use the Risk Premium,
16 Comparable Earnings, and Yield-Plus-Growth models to estimate the cost of equity
17 for electric utilities like Pacific Power. The models I use provide direct and objective
18 ways of determining the fair return. I then put these model results into perspective by
19 comparison to the allowed returns afforded to electric utilities by other state-level
20 regulators in the United States.

21 My estimate relies upon securities prices and analyst earnings forecasts from
22 the capital markets in which the proxy companies' securities trade. These data
23 provide evidence of the returns investors *require* in exchange for providing capital for

1 utility investments. I use the capital market data in a number of models that are fully
2 grounded in financial theory.

3 **Q. What is your recommendation for a fair return on equity for Pacific Power?**

4 A. As shown in Exhibit No.____(KGS-3), I recommend a return on equity of 10.0 percent
5 for the Company. In my opinion, this is a fair return on equity to use in establishing
6 the Company’s revenue requirement. Adoption of this return on equity for
7 determining Pacific Power’s rates will provide appropriate compensation to the
8 Company’s owners—both for the time value of money and for the risks they face—
9 and appropriate protections for customers in the Company’s service territory in
10 Washington. In sum, its adoption will ensure that Pacific Power’s rates will squarely
11 meet the requirements of Washington law that they be “just, fair, reasonable
12 and sufficient.”¹

13 **Q. How is the remainder of your testimony organized?**

14 A. First, I provide the regulatory and theoretical bases for my recommended cost of
15 equity calculation, provide general comments on capital market conditions, and
16 explain how I arrived at an appropriate proxy group from which to estimate cost of
17 equity. I then provide a description of the DCF models I rely upon and the results
18 obtained therefrom. I go on to explain the CAPM and Risk Premium models and
19 their results, as well as the Comparable Earnings Model. These model results all
20 inform my recommended cost of equity. Next, I discuss the business and financial
21 risks faced by the Company as compared to those faced by proxy group companies,
22 and compare my model results to allowed returns in other jurisdictions. I also explain

¹ RCW 80.28.010(1).

1 how my cost of equity recommendation would differ if the Commission adopted a
2 hypothetical capital structure with more debt leverage than currently employed by the
3 Company. I conclude by summarizing my return on equity recommendation for
4 Pacific Power in this case.

5 **BACKGROUND ON THE FAIR RATE OF RETURN ON EQUITY**

6 **Q. Please summarize the legal and regulatory context for your recommendation of**
7 **fair return on equity.**

8 A. Under RCW 80.01.040(3), the Commission is charged with regulating the supply of
9 utility service in the public interest; under RCW 80.28.010(1), the Commission must
10 ensure that rates are just, reasonable, and compensatory. A key tenet in the
11 determination of just and reasonable rates is that owners of regulated companies must
12 be afforded a reasonable opportunity to earn a fair return on their invested capital.
13 Fair return is thus an essential component of a regulated company’s cost of service.

14 In administrative law proceedings in the United States, the practice of
15 determining “fair return” is guided by the landmark Supreme Court decisions in *Hope*
16 and *Bluefield*. These decisions establish that fair return must be sufficient to attract
17 capital and must compensate investors at a level consistent with returns on
18 investments of comparable risk. In *Bluefield*, the Supreme Court held:

19 A public utility is entitled to such rates as will permit it to earn a
20 return on the value of the property which it employs for the
21 convenience of the public equal to that generally being made at the
22 same time and in the same general part of the country on
23 investments in other business undertakings which are attended by
24 corresponding risks and uncertainties; but it has no constitutional

1 right to profits such as are realized or anticipated in highly profitable
2 enterprises or speculative ventures.²

3 In *Hope*, the court found:

4 [T]he return to the equity owner should be commensurate with
5 returns on investments in other enterprises having corresponding
6 risks. That return, moreover, should be sufficient to assure
7 confidence in the financial integrity of the enterprise, so as to
8 maintain its credit and attract capital.³

9 Rates of return that compensate investors for opportunity costs and permit
10 utilities to attract capital are a cornerstone of regulatory practice in the United States.

11 **Q. Does the manner in which fair return is determined in regulatory practice
12 comport with economic and financial theory on cost of capital?**

13 A. Yes. The legal standards for determining a fair rate of return for regulated utilities
14 comport with the theory established in the field of financial economics. Financial
15 economists have long recognized that the cost of capital must be assessed recognizing
16 the opportunity costs of foregoing alternative investments and current consumption.⁴
17 Financial economics also recognizes that investors must be compensated for risk and
18 that returns must be commensurate with the level of risk in order to attract capital. In
19 this regard, regulatory practice and financial theory align well.

20 **Q. Is the cost of equity capital directly observable?**

21 A. No. It is not possible to observe the cost of equity directly in the capital markets.
22 The return expectations of equity investors are not published directly in trade
23 journals, as are some other financial data. They must be estimated or derived

² *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n of W. Va.*, 262 U.S. 679, 692-3 (1923).

³ *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

⁴ See Brealey and Myers, *Principles of Corporate Finance* at 121, 544 (7th ed. 2003). See also Ross, Westerfield, and Jaffe, *Corporate Finance* at 167 (4th ed. 1996).

1 indirectly using financial models and the financial data that are made available to the
2 public. In this regard, it is unlike the cost of debt, which anyone may directly observe
3 from the coupon rates and market prices of long-term debt instruments issued by
4 corporations.

5 **Q. Must the cost of equity be assessed on a forward-looking basis?**

6 A. Yes. The cost of equity can only reflect the forward-looking expectations of investors
7 who demand compensation for the use of their money in risky investments. It is
8 essential that the cost of equity capital be defined as a forward-looking concept.

9 **Q. Please describe the risks that must be considered in assessing the cost of equity.**

10 A. The cost of equity that investors demand is a function of the business and financial
11 risks to which their capital is exposed. “Business risk” refers to the level of risk
12 embedded in the business itself, while “financial risk” refers to risks arising from
13 choices management makes regarding how the firm is financed. If the firm employs a
14 high level of debt leverage in its capital structure, such leverage amplifies risk for the
15 equity investor because the equity investor is a residual claimant, only entitled to the
16 firm’s cash flows after the debt capital providers have been paid.

17 **Q. Did the principles for determining fair return in regulatory practice and those
18 established by financial economics guide your assessment of the Company’s cost
19 of equity?**

20 A. Yes. These principles guided my analysis and assessment of the cost of equity for
21 the Company.

1 **CURRENT CAPITAL MARKET CONDITIONS**

2 **Q. Please describe recent trends in capital market conditions that provide context**
3 **for your recommendations.**

4 A. Current capital market conditions are unique from a historical perspective. Yields on
5 long-term treasury bonds have been suppressed by the Federal Reserve’s bond-buying
6 program and remain at levels well below their historical average. Although
7 statements from the Federal Reserve indicate that this program will be tapered, the
8 agency has moved slowly, and risk-free interest rates—those relied upon by financial
9 analysts to model investor return expectations—remain near all-time lows. At the
10 same time, as demand for stocks has pushed equity prices up, dividend yields have
11 fallen significantly since 2009, both for industrial firms generally and for utilities. I
12 show this in Exhibit No.__(KGS-4) and Exhibit No.__(KGS-5). Since 2009, stock
13 prices for utilities have exhibited more volatility than stock prices for industrial firms.

14 **SELECTION OF A PROXY GROUP OF COMPANIES**

15 **Q. Do you rely on a proxy group of comparable companies when determining the**
16 **cost of equity for Pacific Power?**

17 A. Yes. To determine the cost of equity for the Company, I rely upon a proxy group of
18 comparable companies in the same industry to gauge investors’ return expectations
19 for investments with corresponding risks. The use of a proxy group containing
20 multiple firms assures a stable, reliable and objective estimate of the cost of capital.

21 **Q. What comparable companies do you employ for Pacific Power?**

22 A. As shown in Exhibit No.__(KGS-6), my electric proxy group includes twenty-four
23 companies: (1) Alliant Energy Corporation; (2) American Electric Power Co., Inc.;

1 (3) Avista Corp.; (4) Black Hills Corp.; (5) CenterPoint Energy, Inc.; (6) Cleco Corp.;
2 (7) Consolidated Edison, Inc.; (8) Dominion Resources, Inc.; (9) DTE Energy
3 Company; (10) Duke Energy Corp.; (11) El Paso Electric Company; (12) IDACORP,
4 Inc.; (13) NextEra Energy, Inc.; (14) Northeast Utilities; (15) NorthWestern
5 Corporation; (16) OGE Energy Corp.; (17) Pepco Holdings, Inc.; (18) Pinnacle West
6 Capital Corporation; (19) Portland General Electric Company; (20) SCANA
7 Corporation; (21) The Southern Company; (22) Westar Energy, Inc.; (23) Wisconsin
8 Energy Corporation; and (24) Xcel Energy Inc. Like Pacific Power, each of these
9 companies has substantial electric utility operations.

10 **Q. How did you arrive at this proxy group?**

11 A. I used a series of screening criteria that allowed me to identify firms that have similar
12 characteristics to Pacific Power. The specific characteristics I sought to
13 identify include:

14 **1. That a company is considered an “Electric Utility” by the Value Line**

15 **Investment Survey.** This requirement simply establishes the initial universe of
16 potential proxy companies.

17 **2. That a company has a credit rating from Moody’s or Standard & Poor’s**

18 **(S&P) that is comparable to that of the Company, i.e., not more than one**

19 **rating up or down.** I examined credit ratings so that the proxy companies

20 selected are of comparable creditworthiness to PacifiCorp.

21 **3. That a company has ten quarters of constant or increasing dividends.** This

22 criterion is necessary to assure that the DCF model functions predictably and

23 yields robust results.

- 1 4. **That a company has a positive five-year growth forecast.** Like the criteria
2 above, this is necessary to assure that the DCF model, in its single-stage format,
3 functions predictably and yields robust results.
- 4 5. **That a company does not have merger or other extraordinary activity within**
5 **the past six months significant enough to distort the DCF inputs.** Such a
6 criterion is needed to assure that the DCF results are not biased by idiosyncratic,
7 event-driven stock price movements.
- 8 6. **That a company operates primarily in regulated businesses.** I exclude
9 companies whose operations are primarily unregulated because they do not meet a
10 basic level of comparability. While having some unregulated interests is not
11 sufficient grounds to exclude a company, firms whose businesses are
12 predominantly unregulated do not make suitable comparisons to Pacific Power, a
13 company that derives nearly all of its revenues from regulated operations.
- 14 7. **That there is data available regarding a company to perform DCF analysis.**
15 This criterion is needed because, of course, if the data is unavailable, the DCF
16 model cannot be run. Some companies do not have sufficient analyst coverage
17 for a consensus earnings forecast to be produced. Companies with fewer than two
18 analysts covering their stock are not eligible for inclusion in the proxy group.

19 **Q. Please describe how you applied the screening criteria.**

20 A. I started with the 48 companies classified by Value Line as being in the electric utility
21 industry. The application of the credit rating screen reduced the proxy group to 35
22 companies. Screening for companies with constant or increasing dividends and
23 growth forecast resulted in the elimination of seven companies, bringing the group

1 to 28. I then eliminated three companies whose revenues were primarily generated
2 from businesses outside of the regulated electricity sector. In addition, I excluded
3 ITC Holdings because it is a stand-alone transmission company, not a vertically-
4 integrated utility like Pacific Power. All remaining companies, 24 in all, had data
5 available to run the DCF model, and I adopted them as the proxy group. This
6 screening selection is shown in Exhibit No.__(KGS-7). As noted in this exhibit, the
7 results of screens were only reported if a prospective proxy company passed all
8 prior screens.

9 **DISCOUNTED CASH FLOW AND YIELD-PLUS-GROWTH MODELS**

10 **Overview of the DCF Model**

11 **Q. Please describe the DCF model that you employ.**

12 A. The DCF model is the most commonly used model in North American regulatory
13 practice to determine the cost of equity for public utilities. The DCF model is
14 founded on a well-established principle in financial economics: *i.e.*, that the price of
15 a given asset in a competitive market is the discounted stream of future cash flows it
16 can produce.⁵ Equity investments in public utilities produce cash dividends and
17 capital gains. Hence, the DCF model centers around the dividends and capital gains
18 that can reasonably be expected to accrue to equity investors, which are reflected first
19 in current dividends and second in forecast earnings growth. The stream of expected
20 dividends and growth—taken together with pricing for a utility’s common stock
21 established by competitive trading on a stock exchange—allows financial economists
22 to calculate the implied discount rate at which investors evaluate future dividends and

⁵ For a discussion of the theory underlying the DCF model, see M. Gordon, *The Investment, Financing and Valuation of the Corporation* (1962).

1 growth. The discount rate is precisely the return that investors require for committing
2 their capital as equity in the public utility corporations to which the DCF model
3 is applied.

4 **Inputs into the DCF Calculations**

5 **Q. Please describe the inputs to your DCF calculations for the proxy group**
6 **companies.**

7 A. I rely on the following inputs:

- 8 1. Common stock prices for proxy group companies, obtained from Bloomberg
9 Finance LP;
- 10 2. Current dividends, obtained from Bloomberg Finance LP and/or Factset
11 Data Systems;
- 12 3. Forecast earnings growth rates, summarized by IBES and obtained from Yahoo
13 Finance and Factset Data Systems;
- 14 4. Estimated sustainable growth rates, using data obtained from Value Line.

15 The first two data sets are used to calculate the dividend yield, while the
16 second two represent different ways of assessing investors' growth expectations. The
17 use of consensus forecasts for earnings growth is the first method I utilize. The
18 second is the development of a sustainable growth rate, reflecting the firm's retained
19 earnings as well as expected returns from the sale of new stock at a premium to book
20 value. The sustainable growth inputs can be found in Exhibit No.__(KGS-8) and
21 Exhibit No.__(KGS-9). My DCF analysis relies upon an average of the results
22 (consensus forecasts and sustainable growth) when determining the cost of equity.

1 **Q. Please explain how the stock price data and dividend information is used.**

2 A. I calculate an average dividend yield for each proxy group company by aggregating
3 the dividends earned in the most recent 12-month time period divided by the average
4 stock price during that period. I then convert the historical dividend yields to
5 forward-looking dividend yields by multiplying by one plus the growth rate. The data
6 used in my analysis covers the period through mid-February 2014.

7 **Q. Does the DCF model combine the dividend yields with the growth forecasts to
8 arrive at a cost of equity for the proxy group of electric utilities?**

9 A. Yes. The DCF model is structured to evaluate the cost of equity as “yield” plus
10 “growth.” As noted above, the use of the 12-month stock prices, together with the
11 corresponding dividend per share payments, allows me to calculate the historical
12 yield component, which I then convert to a forward-looking dividend yield by
13 adjusting for one year of growth. As shown in Exhibit No.____(KGS-10), this yields
14 an average cost of equity for the electric utility proxy group of 9.23 percent.

15 **Yield-Plus-Growth Model**

16 **Q. Have you performed a Yield-Plus-Growth model?**

17 A. Yes. The Yield-Plus-Growth model I employ examines the two components of
18 required return for the electric power industry as a whole. Specifically, I rely on the
19 observed dividend yield for the industry (the yield component of the required return)
20 and expectations of earnings growth (the growth component). When combined, these
21 two data points offer an objective reading of investor expectations for the industry.
22 The industry Yield-Plus-Growth estimate is a form of the DCF model. It is among

1 the factors that influence investors' forward-looking expectations about rates of return
2 for companies like Pacific Power.

3 **Q. Please summarize the results of the industry Yield-Plus-Growth model.**

4 A. As shown in Exhibit No.____(KGS-11), the industry Yield-Plus-Growth model yields
5 an expected return on equity of 9.90 percent.

6 **CAPM AND RISK PREMIUM MODELS**

7 **Q. Please describe the Equity Risk Premium approach.**

8 A. The Equity Risk Premium model is a build-up model that starts with the expected
9 return on riskless assets and adds various premia to reflect the increasing levels of
10 risk faced by equity investors. The additional premia added include a general stock
11 market return premium, and in some cases an industry or size-specific premium.⁶

12 **Q. Please describe the Capital Asset Pricing Model.**

13 A. The CAPM starts with the expected return on riskless assets and adds a premium that
14 is company-specific to reflect the increased risks faced by that company's equity
15 investors. The degree of market risk embedded in an individual stock is measured by
16 its beta. Technically, beta measures the level of correlation between the returns on a
17 given stock and the returns on the broader market.⁷ Investors in any given stock,
18 therefore, should expect to earn a return equal to the return on riskless assets plus a
19 premium that depends on beta, the degree of market risk associated with that
20 particular stock. In equation form, the CAPM is represented as follows:

⁶ See, e.g., Ibbotson Associates, *Market Results for Stocks, Bonds, Bills and Inflation, 2011 Valuation Yearbook*.

⁷ The more volatile the return of a particular stock relative to the broader market, the higher the beta.

1 $k_e = R_f + \beta * (R_m - R_f)$

2 Where:

3 k_e is the required return on equity capital;

4 R_f is the current expected return on riskless assets;

5 β is the degree of systematic market risk for the stock (correlation to the
6 broader market);

7 R_m is the expected return on risky equity investments; and

8 $(R_m - R_f)$ represents the premium required by investors in the stock market.

9 CAPM can be viewed as a special case of the Equity Risk Premium model in
10 which the Company's equity risk premium is determined by the beta and the overall
11 premium demanded by investors for holding stocks.

12 **Q. How did you calculate the premium required by investors for holding stocks?**

13 A. I calculate this premium (known as the "Equity Risk Premium" or "Market Risk
14 Premium") as the difference between the expected return on the S&P 500 index and
15 the yield on long-term U. S. treasury bonds. Exhibit No.__(KGS-12) presents
16 this calculation.

17 **Q. Are there other approaches to assessing the premium?**

18 A. Yes, financial analysts also assess market risk premia on a historical basis. They
19 derive this by examining the actual historical performance of stock investments
20 relative to the generally accepted measure of a risk-free return reflected in long-term
21 (e.g., 20- or 30-year) government bonds.

1 **Q. Why have you elected to rely on a forward-looking Market Risk Premium?**

2 A. I rely on the forward-looking premium because in the current interest rate
3 environment, the historical market risk premium does not characterize investors'
4 forward-looking return requirements as accurately as the forward-looking premium
5 does. The spread between the risk-free rate and the required returns for holding
6 equities has broadened as the Federal Reserve System has aggressively acted to keep
7 interest rates at record lows and stimulate the economy. This is reflected in a
8 relatively stable awarding of allowed returns to public utilities in the context of a
9 rapid decline in treasury yields, the market's metric of the "risk-free" rate. As shown
10 in Figure 1 below, since 2006, the average allowed return for electric utilities has
11 hovered in the range of 10.0 to 10.5 percent, while treasury yields fell 200 basis
12 points and then started to recover. If the market risk premium had been unchanged
13 during this period, the allowed returns—which themselves are based on the capital
14 market data put forth by public utilities and intervenors alike—would have declined
15 as precipitously as the treasury yields did. They did not. A constant historical equity
16 risk premium ignores the elevated cost of holding risky securities relative to the
17 riskless security benchmark. The forward-looking premium thus provides financial
18 analysts and this Commission the most accurate gauge of investor demands in the
19 current market environment where required returns on equities have decoupled from
20 treasury yields.

Figure 1

Year	Treasury Yield (30-year)⁸	Electric Utility Allowed ROE⁹
2006	4.91	10.32
2007	4.84	10.30
2008	4.28	10.41
2009	4.08	10.52
2010	4.25	10.37
2011	3.91	10.29
2012	2.92	10.17
2013	3.45	10.02

1 **Q. Have regulators acknowledged the inapplicability of the historical market risk**
2 **premium in the current interest rate environment?**

3 A. Yes, for its part, the Federal Energy Regulatory Commission (FERC) acknowledged,
4 in its ruling in Docket No. ER14-500-000, that the “current low treasury bond rate
5 environment creates a need to adjust the CAPM results, consistent with the financial
6 theory that the equity risk premium exceeds the long-term average when long-term
7 U.S. Treasury bond rates are lower than average, and vice-versa.”¹⁰ The Australian
8 Energy Regulator (AER) also has recently increased its equity risk premium used to
9 determine allowed returns taking into consideration many factors, including analyses
10 of the forward-looking risk premium.¹¹ Moreover, as shown in Figure 1 above, the
11 allowed returns granted by state regulators in the United States demonstrate an
12 implicit recognition of the increased equity risk premium set against the currently low
13 level of treasury yields.

⁸ Treasury yields obtained from the Federal Reserve’s h15 release.

⁹ Allowed returns obtained from Regulatory Research Associates, a division of SNL Energy.

¹⁰ See *Order Accepting Tariff Filing Subject to Condition and Denying Waiver*, 146 FERC ¶ 61,043 at 36, FERC Docket No. ER14-500-000 (Jan. 28, 2014).

¹¹ See *Explanatory Statement, Rate of Return Guideline*, Australian Energy Regulator (Dec. 2013).

1 **Q. Please summarize your CAPM results.**

2 A. As shown in Exhibit No.____(KGS-13), the CAPM model yields an average return on
3 equity of 9.67 percent for the proxy group.

4 **Q. Turning now to the Risk Premium model, how does it differ from the CAPM?**

5 A. I rely on the Risk Premium model to estimate a cost of equity estimate for the electric
6 utility industry broadly, whereas my use of the CAPM model focuses on using
7 observed capital market data to develop the cost of equity for the companies in the
8 proxy group.

9 **Q. Please explain the Risk Premium model.**

10 A. The Risk Premium model uses the historical relationship between electric utility
11 returns and bond yields to predict the cost of equity today using the yields currently
12 observed on bonds. I model this historical relationship by developing a least-squares
13 regression analysis that uses the bond yield to explain the average allowed return for
14 electric utilities as a function of the level of interest rates (as reflected in the yields on
15 government bonds, A-rated utility bonds, and BBB-rated utility bonds). Specifying
16 the model in this fashion takes account of the fact that the equity risk premium varies
17 with the overall level of interest rates. My methodology tracks how the model has
18 been applied by financial economists, as evidenced in the academic literature.¹²

19 **Q. What are the results of your Risk Premium model?**

20 A. The Risk Premium model indicates a cost of equity for electric utilities in the range of
21 10.10 percent to 10.29 percent, with an average of 10.22 percent. The different

¹² See W. Carleton, W. Chambers and J. Lakonishok, *Inflation Risk and Regulatory Lag*, Journal of Finance, (May 1983). A similar approach is presented in R. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return*, Financial Management (Spring 1986).

1 estimates correspond to the use of different bonds as the numéraire for modeling
2 purposes. As noted above and shown in Exhibit No.__(KGS-14), I rely on three
3 different classes of bonds to assess the risk premium associated with electric utility
4 stocks: government bonds, A-rated utility bonds, and BBB-rated utility bonds.

5 **COMPARABLE EARNINGS**

6 **Q. Have you performed a comparable earnings analysis?**

7 A. Yes, I have. I analyzed the returns actually earned by utilities and industrial firms
8 since 2002. The *Hope* decision establishes that a utility must be granted the
9 opportunity to earn returns that are comparable to those earned by *unregulated* firms
10 of similar risk. Consistent with *Hope*, the industrial firms selected for my analysis
11 form an appropriate unregulated peer group for comparison purposes,¹³ while the
12 utilities group contains peers from the same industry.

13 **Q. Please summarize the results of the comparable earnings analysis.**

14 A. As shown in Exhibit No.__(KGS-15), the Comparable Earnings model yields an
15 average return on equity of 9.73 percent for the utility peers and 16.31 percent for the
16 industrials. These earned returns are one of the many factors that influence investors'
17 forward-looking expectations about rates of return.

18 **BUSINESS AND FINANCIAL RISKS RELATIVE TO THE PROXY GROUP**

19 **Q. What is the purpose of this section of your testimony?**

20 A. In this section, I describe at a high level the business risks of the Company and
21 compare them to those of the proxy group companies.

¹³ See, e.g., H. Roseman, *Comparable Earnings and the Fair Rate of Return*, Public Utility Law (ABA 1970).

1 **Q. What are the basic types of business risks applicable to electric utilities?**

2 A. Companies engaged in the generation, distribution and sale of electric power at retail
3 face a variety of risks. These include risks traditionally faced by any regulated utility
4 in North America (e.g., the risk of prudence disallowance, the risk of regulatory lag,
5 the risk that demand for service does not permit full recovery of costs, risk associated
6 with general economic trends, interest rates and financial market conditions). As
7 companies like Pacific Power invest to keep pace with load growth, they also face
8 construction risk, contracting and litigation risk, and potential delays in bringing new
9 plant into service. They face a material risk of future economic obsolescence for new
10 plant that will go into rate base and be depreciated over an assumed useful life, which
11 may or may not turn out to be the actual economic life.

12 **Q. Are the proxy group companies of comparable business risk to Pacific Power?**

13 A. Yes, they are generally comparable in that they share the business risks that are
14 typical of public utilities, as described above. In this regard, Pacific Power is
15 comparable to the Proxy Group and to the industry more broadly. Furthermore, key
16 financial metrics for the Company fall reasonably within the range of those observed
17 for the proxy group companies.

18 Furthermore, Pacific Power faces certain challenges in Washington following
19 the decision in its 2013 Washington rate case, Docket UE-130043. Regulatory

20 Research Associates, a division of SNL Energy, explains these challenges:

21 This Washington Utilities and Transportation Commission (WUTC)
22 decision for PacifiCorp is negative from an investor viewpoint. The
23 rate increase approved by the WUTC is less than one half that
24 supported by PacifiCorp at the end of the case. The authorized 9.5%
25 return on equity (ROE) is significantly below the average of returns
26 authorized electric utilities nationwide during 2013, but is consistent

1 with historical WUTC practice. In addition, the Commission
2 utilized a hypothetical capital structure that is more leveraged than
3 that supported by the company, but the approved capital structure is
4 consistent with that approved in the last rate case decision that
5 specified a ratemaking capital structure for PacifiCorp. Also, the
6 WUTC once again rejected PacifiCorp's request for a power cost
7 adjustment mechanism (PCAM), finding that the company's
8 proposed mechanism was not designed in accordance with prior
9 Commission directives; PacifiCorp is the only electric utility in the
10 U.S. to operate without a fuel adjustment mechanism. On a more
11 favorable note, while the WUTC has historically relied on an
12 average rate base valuation, in the instant case, the WUTC accorded
13 PacifiCorp end-of-period rate base treatment. We raised our rating
14 of Washington regulation in July 2013, to Average/2 from
15 Average/3, following a series of constructive decisions issued for
16 the state's other electric utilities, and we are maintaining our
17 Average/2 rating at this time, despite the negative aspects of the
18 instant decision.¹⁴

19 On balance, Pacific Power, the division of PacifiCorp for which rates are
20 being set in this proceeding, is of comparable risk relative to the proxy group and the
21 industry generally.

22 COMPARISON TO ALLOWED RETURNS

23 **Q. Previously, you showed figures for returns granted to public utilities in other**
24 **jurisdictions. Are such returns relevant to this proceeding?**

25 A. Yes. The returns allowed by other state regulators can influence investor
26 expectations for investments in public utilities in the United States. An examination
27 of the average rate of return granted to investors in public utilities is therefore useful
28 to provide context to my recommendation.

29 **Q. What levels of returns have state regulators awarded to public utilities recently?**

30 A. As shown in Exhibit No.____(KGS-16), return on equity awards in 2013 for electric

¹⁴ SNL Energy's Regulatory Research Associates (RRA) Regulatory Focus, Final Report on Docket UE-130043 (Jan. 17, 2014) (emphasis added).

1 utilities ranged from 8.72 to 12.40 percent, with the average being 10.02 percent.

2 **Q. Is your return on equity recommendation of 10.0 percent consistent with the**
3 **observed return on equity awards from other states?**

4 A. Yes, it is. The average return on equity award of 10.02 percent for electric utilities is
5 derived from a diverse group of utilities that reflect the risk of the industry. The
6 recommended ROE of 10.0 percent is consistent with the specifics of the investment
7 climate context faced by Pacific Power's owners and falls reasonably within the range
8 of equity returns awarded by other state regulators.

9 **HYPOTHETICAL CAPITAL STRUCTURE**

10 **Q. If the Commission were to adopt a hypothetical capital structure in this case, as**
11 **it did in Pacific Power's last Washington rate case, what adjustments would be**
12 **needed to your cost of equity estimate?**

13 A. My cost of equity estimate relies upon the Company's actual capital structure.
14 Imputing a higher debt ratio (e.g., 51 percent) would necessarily raise the cost of
15 equity. This is because, as I note previously, a higher debt ratio raises risk for equity
16 investors, who are contingent claimants and only receive dividends after the utility
17 services debt. A higher debt ratio thus means a lower probability of meeting a given
18 future dividend payment, all else equal. As explain below, I estimate that the
19 imputation of a higher debt ratio would raise the cost of equity by 28 basis points.

20 **Q. Does Pacific Power have an incentive to align its actual capital structure to the**
21 **level approved for ratemaking purposes?**

22 A. Yes. Maintaining a higher equity ratio when the Company is only granted a
23 compensatory return on a smaller, deemed amount of equity does not make sense

1 financially. The Company therefore has an incentive to manage its capital structure
2 over time in a way that does not leave the actual equity percentage above the level
3 approved by the Commission.

4 **Q. Have you quantified by how much a hypothetical capital structure would affect**
5 **the cost of equity?**

6 A. Yes, I have done so for the debt ratio currently allowed by the Commission, *i.e.*,
7 51 percent, using the results of the CAPM model. These show the beta of the proxy
8 group to be 0.71 on average. To assess the incremental risk associated with a
9 51 percent debt ratio (currently allowed by the Commission for Pacific Power), I use
10 the well-established technique of re-levering the beta to a different capital structure.¹⁵
11 I then multiply the difference in beta by the market cost of risk, which yields the basis
12 point increase in cost of equity that investors require at the higher imputed debt ratio.
13 The market cost of risk is the premium required by equity investors relative to the
14 risk-free rate, as shown in Exhibit No.__(KGS-12).

15 The table below summarizes these calculations.

(a)	Proxy Group Beta	0.71
(b)	Corresponding Unlevered Beta	0.49
(c)	Beta differential as between 51.73% and 49% Equity Ratios	0.03
(d)	Market Cost of Risk	8.36%
(e) = (c) *(d)	Incremental Cost of Hypothetical Debt Ratio	0.28%

16 **Q. Does a higher debt ratio affect the cost of debt?**

17 A. Yes, it does. Generally speaking, higher debt ratios correspond to lower credit
18 ratings. Lower credit ratings in turn lead to higher costs of debt. Even within a given

¹⁵ See, e.g., Ross, Westerfield, and Jaffe, *Corporate Finance*, Chapter 17 (4th ed. 1996).

1 ratings bracket, a higher debt ratio can cause a given company to face a higher cost of
2 debt relative to other similarly-situated companies with the same credit rating.

3 **Q. Is there any evidence showing that adopting the hypothetical debt ratio**
4 **currently approved by the Commission could trigger a ratings downgrade?**

5 A. Yes. Although rating agencies consider many factors when rating a company,
6 published rating guidelines suggest that an increase in debt to more than 50 percent of
7 the capital structure could trigger a downgrade for the Company.

8 **Q. Please explain.**

9 A. Debt-to-capital ratio is a key metric considered by ratings agencies in assessing the
10 financial risk of a given firm. S&P, for its part, has outlined ranges of debt-to-capital
11 ratios for which it characterizes various degrees of financial risk. For example, it
12 considers firms with 45 to 50 percent debt in the capital structure to carry
13 “Significant” financial risk, while firms with 50 to 60 percent debt have “Aggressive”
14 levels of financial risk.¹⁶ Hence, if the Company were to increase its debt levels to
15 51 percent, consistent with the approved capital structure, it would pass from the
16 “Significant” financial risk bracket to the “Aggressive” one.

17 When assigning issuer ratings, S&P considers this financial risk ranking
18 together with its assessment of the Company’s business risk. The figure below
19 presents a matrix that S&P uses to guide its assignment of issuer ratings based on the
20 business and financial risk rankings attributed to a given firm.

¹⁶ See *Methodology: Business Risk/Financial Risk Matrix Expanded* at 3-4 Standard & Poor’s Rating Service (Sept. 18, 2012).

Figure 2
Standard and Poor's Business and Financial Risk Matrix¹⁷

Business And Financial Risk Profile Matrix						
Business Risk Profile	--Financial Risk Profile--					
	Minimal	Modest	Intermediate	Significant	Aggressive	Highly Leveraged
Excellent	AAA/AA+	AA	A	A-	BBB	--
Strong	AA	A	A-	BBB	BB	BB-
Satisfactory	A-	BBB+	BBB	BB+	BB-	B+
Fair	--	BBB-	BB+	BB	BB-	B
Weak	--	--	BB	BB-	B+	B-
Vulnerable	--	--	--	B+	B	B- or below

These rating outcomes are shown for guidance purposes only. Actual rating should be within one notch of indicated rating outcomes.

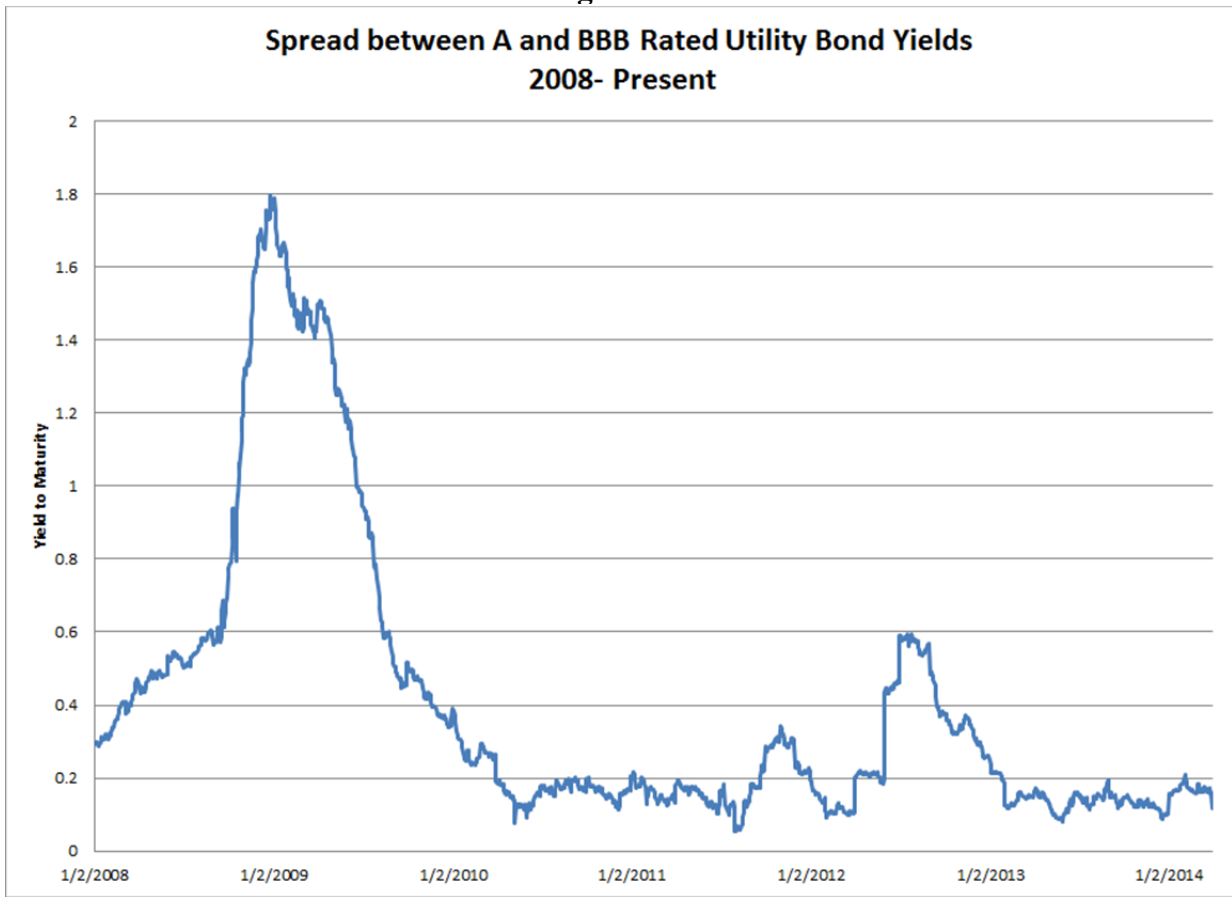
1 This matrix indicates that a higher debt ratio would move the Company to a BBB
2 ratings profile from the A- ratings profile that it currently has.

3 **Q. With a BBB rating, by how much would the Company's cost of debt increase?**

4 A. While the precise increase is difficult to predict on an *ex ante* basis, an examination of
5 historical yields for BBB- and A-rated utilities provides an indication of the likely
6 order of magnitude difference. Of course, much depends on the capital market
7 conditions prevailing at the time the Company needs to raise funds. In the recent
8 past, as shown in Figure 3 below, the spread has resulted in an incremental credit
9 premium for BBB-rated utility bonds (relative to A-rated utility bonds) of on average
10 50 basis points and as high as 60 basis points in July 2012 and 180 basis points during
11 the financial crisis in December 2008.

¹⁷ *Id.* at 2.

Figure 3



1 **Q. Does the graph above convey the true spread that may be faced by a utility**
2 **seeking long-term financing?**

3 A. No. The spreads shown above reflect the average yield differentials for bonds in the
4 BBB- and A-rated utility indices. These indices tend to be heavily weighted with
5 bonds of three to five years remaining to maturity. The spread between A-rated
6 bonds and BBB-rated bonds is higher than the value shown in the graph for bonds of
7 longer duration. A utility seeking long-term debt financing for long-lived utility
8 infrastructure will face an additional premium to reflect the longer term nature of
9 their specific bond issue. For example, as of April 9, 2014, the average yield for
10 BBB-rated utility bonds with remaining terms of greater than twenty five years was

1 approximately 200 basis points higher than that of bonds with five-year terms. The
2 incremental debt cost for a long-term BBB-rated bond relative to a long-term
3 A-rated bond on this same date was nearly fifty basis points, although the index
4 values (also reflecting bonds of shorter-duration) differed by less than twenty
5 basis points.

6 Mr. Bruce N. Williams is sponsoring an analysis of the incremental debt costs
7 associated with financing the Company at an imputed equity ratio of 49.10 percent
8 and a BBB rating. His analysis shows an incremental debt cost of 60 basis points,
9 reflecting a re-pricing of recent debt issues blended with the cost of existing debt that
10 predates the acquisition by MidAmerican Energy Holdings Company. The evidence I
11 present here, particularly the large spreads observed in the marketplace and the
12 premiums that accompany long-term debt issues for utilities financing long-lived
13 infrastructure assets, indicate that 60 basis points is a reasonable estimate of the
14 incremental debt costs that would accompany a reduction in the amount of equity in
15 the Company's capital structure and a corresponding downgrade of the Company's
16 credit rating.

17 **Q. Please summarize the effects of imposing a hypothetical capital structure with a**
18 **higher debt ratio.**

19 A. A hypothetical capital structure with a debt ratio greater than the level currently
20 carried on the Company's books will raise both the cost of debt and the cost of equity.
21 I estimate the incremental equity cost associated with the imposition of a deemed debt
22 ratio of 51 percent to be 28 basis points. My recommended return on equity is shown
23 in the table below at the two capital structures.

Capital Structure	Recommended ROE
Actual Debt Ratio	10.0%
WUTC Imputed Debt Ratio (currently allowed ratio)	10.28%

1

RECOMMENDED RETURN ON EQUITY

2

Q. Please summarize your recommendations for Pacific Power’s return on equity.

3

A. The financial analyses I performed indicate investor return expectations in the range of 9.23 percent to 10.22 percent for the electric proxy group and for the electric industry more broadly, depending on the model. I recommend that the Commission adopt a 10.0 percent return on equity, corresponding to the Company’s actual, applied-for capital structure.

8

Sound public policy and regulatory precedent call for a rate of return that allows the Company to maintain its credit and attract capital. This principle has long been acknowledged by economists, including James C. Bonbright, who noted in his 1961 treatise that both regulatory commissions and company representatives seek “credit-sustaining revenue.”¹⁸ Currently, customers in Washington benefit from the Company’s healthy financial metrics and credit rating. A compensatory return is needed to preserve those benefits for customers.

15

If the Commission were to authorize a less-than-compensatory return on equity, this would put pressure on the Company’s financials and would appear to create a disincentive for the Company to invest in the service territory. However, the Company is committed to maintaining service standards and adequate investment. In this context, inadequate authorized returns and insufficient authorized revenue

16

17

18

19

¹⁸ See J. Bonbright, *Principles of Public Utility Rates*, 50 (1961).

1 requirements can reasonably be expected to have two effects. First, they will lead to
2 a drop in the Company's credit quality, which in turn raises costs for customers.
3 Second, they will cause the Company to need to file repeated rate cases, the
4 consequences of which also harm customers in the long term.

5 In sum, credit-sustaining revenues are not only in the long-term interest of
6 customers because they keep financing costs down, but in their interest because they
7 avoid the additional costs and loss of efficiency incentives that constant rate reviews
8 tend to cause.

9 **Q. Does this conclude your direct testimony?**

10 A. Yes.