Exh. DCP-1T
Dockets UE-230172 and UE-210852
Witness: David C. Parcell

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PACIFICORP d/b/a PACIFIC POWER AND LIGHT COMPANY,** **Respondent.**	**DOCKETS UE-230172 and UE-210852 (*Consolidated*)**
In the Matter of **ALLIANCE OF WESTERN ENERGY CONSUMERS'** **Petition for Order Approving Deferral of Increased Fly Ash Revenues**	

TESTIMONY OF

DAVID C. PARCELL

ON BEHALF OF STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION

Cost of Capital

September 14, 2023

TABLE OF CONTENTS

I. INTRODUCTION 1

II. RECOMMENDATIONS AND SUMMARY 3

III. ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES 5

IV. GENERAL ECONOMIC CONDITIONS 8

V. PACIFICORP'S OPERATIONS AND RISKS 17

VI. CAPITAL STRUCTURE, COST OF DEBT 26

VII. SELECTION OF PROXY GROUP 32

VIII. DISCOUNTED CASH FLOW ("DCF") ANALYSIS 33

IX. CAPITAL ASSET PRICING MODEL ("CAPM") ANALYSIS 39

X. COMPARABLE EARNINGS ("CE") ANALYSIS 45

XI. RISK PREMIUM ("RP") ANALYSIS 51

XII. RETURN ON EQUITY RECOMMENDATION 57

XIII. TOTAL COST OF CAPITAL RECOMMENDATIONS 59

XIV. COMMENTS ON COMPANY TESTIMONY 59

LIST OF EXHIBITS

Exh. DCP-2 Background and Experience Profile

Exh. DCP-3 Total Cost of Capital

Exh. DCP-4 Economic Indicators

Exh. DCP-5 PacifiCorp - History of Credit Ratings

Exh. DCP-6 PacifiCorp - Capital Structure Ratios

Exh. DCP-7 Proxy Companies - Common Equity Ratios

Exh. DCP-8 Proxy Companies - Basis for Selection

Exh. DCP-9 Proxy Companies - DCF Cost Rates

Exh. DCP-10 Standard & Poor's 500 ROE and 20-Year Treasury Bond Returns

Exh. DCP-11 Proxy Companies - CAPM Cost Rates

Exh. DCP-12 Proxy Companies - ROE and M/B

Exh. DCP-13 Standard & Poor's 500 ROE and M/B

Exh. DCP-14 Risk Indicators

Exh. DCP-15 Risk Premium Analysis

Exh. DCP-16 PacifiCorp response to UTC Staff Data Request No. 4

Exh. DCP-17 PacifiCorp response to UTC Staff Data Request No. 6

Exh. DCP-18 PacifiCorp response to UTC Staff Data Request No. 145

Exh. DCP-19 PacifiCorp response to UTC Staff Data Request No. 14

Exh. DCP-20 PacifiCorp response to UTC Staff Data Request No. 15

Exh. DCP-21 PacifiCorp response to UTC Staff Data Request No. 77

Exh. DCP-22 PacifiCorp response to UTC Staff Data Request No. 78

Exh. DCP-23 PacifiCorp response to UTC Staff Data Request No. 79

Exh. DCP-24 Standard & Poor's June 20, 2023, Research Update on PacifiCorp

Exh. DCP-25 PacifiCorp response to UTC Staff Data Request No. 147

I. INTRODUCTION

Q. Please state your name and address.

A. My name is David C. Parcell. My address is 2218 Worchester Rd., Midlothian, VA 23113.

Q. By whom are you employed and in what capacity?

A. I am a Principal and Senior Economist of Technical Associates, Inc.

Q. Please state your qualifications to provide testimony in this proceeding

A. I hold B.A. (1969) and M.A. (1970) degrees in economics from Virginia Polytechnic Institute and State University (Virginia Tech) and an M.B.A. (1985) from Virginia Commonwealth University. I have been a consulting economist with Technical Associates since 1970. I have provided cost of capital testimony in public utility ratemaking proceedings dating back to 1972, and I have previously filed testimony and/or testified in over 600 utility proceedings before more than 50 regulatory agencies in the United States and Canada.

Q. Have you testified previously before the Commission?

A. Yes. I have previously filed testimony on behalf of the Staff of the Washington Utilities and Transportation Commission (Commission) in several proceedings involving Avista Utilities, Cascade Natural Gas, and Puget Sound Energy, as well as PacifiCorp d/b/a

Pacific Power & Light Company (PacifiCorp). Exh. DCP-2 provides a more complete description of my education and relevant work experience.

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

A. I have been retained by the Commission Staff to evaluate the cost of capital ("COC") aspects of the current electric Multi-year Rate Plan ("MYRP") filing of PacifiCorp. I have performed independent studies and I am making recommendations of the COC for PacifiCorp. In my testimony, I derive the COC for the first year (*i.e.*, December 31, 2024) of the Company's MYRP. Staff has requested information from PacifiCorp necessary to perform COC analyses for the second year of the MYRP (*i.e.*, December 31, 2025) but to-date this has not been provided.[1] When this information is provided, I will update my testimony to reflect the 2025 COC. For the time being, I recommended to Commission Staff that they use my 2024 COC recommendations for both years. In addition, since PacifiCorp is a wholly owned subsidiary of Berkshire Hathaway Energy ("BHE"), I have also evaluated this entity in my analyses.

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

A. Yes. In addition to Exh. DCP-2, identified above, I have prepared Exh. DCP-3 through Exh. DCP-15. These exhibits were prepared by me. The information contained in these exhibits is correct to the best of my knowledge and belief. Exh. DCP-16 through DCP-25 are several PacifiCorp responses to UTC Staff data requests in this matter that I have utilized in the preparation of my Direct Testimony and exhibits.

[1] Parcell, Exhs. DCP-20 through 23 (UTC Staff Data Requests 15, 77, 78 and 79).

II. RECOMMENDATIONS AND SUMMARY

Q. What are your COC recommendations in this proceeding?

A. My overall COC recommendations for PacifiCorp are shown in Exh. DCP-3 and can be summarized as follows:

Item	Percent	Cost	Weighted Cost
December 31, 2024			
Short-Term Debt	0.76%	3.90%[2]	0.03%
Long-Term Debt	50.13%	4.77%	2.39%
Preferred Stock	0.01%	6.75%	0.00%
Common Equity	49.10%	9.50%	4.66%
Total	100.00%		7.09%

Q. How does your proposed COC compare with the MYRP COC proposed by PacifiCorp?

A. PacifiCorp's proposed COC for the 2024 Test Period is as follows:[3]

Item	Percent	Cost	Weighted Cost
December 31, 2024			
Preferred Stock	0.01%	6.75%	0.00%
Long-Term Debt	48.72%	4.77%	2.32%
Common Equity	51.27%	10.30%	5.28%
Total	100.0%		7.60%

Note that PacifiCorp does not provide a COC for the second year of the MYRP.

Q. Please summarize the major differences between your COC recommendations and those of PacifiCorp.

[2] Staff has requested PacifiCorp's December 31, 2024, cost of short-term debt (Parcell, Exhs. DCP-20, 22, and 23 (WUTC Data Requests 15, 78 and 79) but to date this information has not been provided. This figure reflects the December 31, 2022, cost of short-term debt as provided in response to WUTC Data Request 14. Parcell Exh. DCP-19.

[3] Kobliha, Exh. NLK-1T at 2, Table 1.

A. The first major difference between my COC analyses and those of PacifiCorp is the appropriate capital structure to be used in calculating the COC for each year of the MYRP. PacifiCorp proposes use of a capital structure incorporating 51.27 percent common equity. This differs from the capital structures that were approved in the last several litigated proceedings of PacifiCorp, where the Commission has consistently adopted a capital structure with 49.1 percent common equity.[4] I use the 49.1 percent common equity ratio from the previously adopted capital structures, which I believe remains the proper capital structure for the Company.

The second major difference between my COC analyses and those of PacifiCorp lies in our respective recommendations of the return on equity ("ROE") for PacifiCorp. I recommend a 9.5 percent ROE and PacifiCorp requests a 10.30% percent ROE. I employ four recognized methodologies to estimate PacifiCorp's ROE, each of which I apply to a proxy group of electric and combination electric/gas utilities. These four methodologies and my findings are:

Methodology	Range
Discounted Cash Flow ("DCF")	9.6%-9.9% (9.75% mid-point)
Capital Asset Pricing Model ("CAPM")	9.7%-9.8% (9.75% mid-point)
Comparable Earnings ("CE")	9.0%-9.5% (9.25% mid-point)
Risk Premium ("RP")	10.0%-10.5% (10.25% mid-point)

Based upon these findings, I conclude that PacifiCorp's ROE is within a range of 9.5 percent to 10.0 percent. This figure is supported collectively by the results of all four of the methodologies. I further conclude that a reasonable ROE for PacifiCorp is 9.5 percent, the low end of my ROE range, in order to recognize the risk-reducing attributes

[4] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-152253, Order 12, 3 (Sept. 1, 2016).

of the multiyear rate plans (MYRPs) required by SB 5295, as well as the Commission's long-standing principle of gradualism.

III. ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES

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

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

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

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

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

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

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

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

It is generally understood that the *Bluefield* decision established the following standards for a fair rate of return: comparable earnings, financial integrity, and capital attraction. It also noted that required returns change over time, and there is an underlying assumption that the utility be operated efficiently.

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

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

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

Q. How can the *Bluefield* and *Hope* parameters be employed to estimate the COC for a utility?

A. Neither the courts nor economic/financial theory has developed exact and mechanical procedures for precisely determining the COC. This is the case because the COC is an opportunity cost and is prospective looking, which dictates that it must be estimated. However, there are several useful models that can be employed to assist in estimating the ROE, which is the capital structure item that is the most difficult to determine. These include the DCF, CAPM, CE and RP methods. Each of these methodologies will be described in more detail later in my testimony.

IV. GENERAL ECONOMIC CONDITIONS

Q. Are economic and financial conditions important in determining the COC for a public utility?

A. Yes. The COCs for both fixed-cost (i.e., debt) components and common equity are determined in part by current and prospective economic and financial conditions. At any given time, each of the following factors has an influence on the COC:

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

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

low by changes affecting opportunities for investment, the money market, and business conditions generally."[5]

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

A. I examined several sets of economic and financial statistics from 1975 to the present. I chose this time period because it permits the evaluation of economic conditions over five full business cycles, allowing for an assessment of changes in long-term trends. Consideration of economic/financial conditions over a relatively long period of time permits an assessment of how such conditions have impacted the level and trends of the COC. This period also approximates the beginning and continuation of rate case activities by public utilities that generally began in the mid-1970s.

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

Q. Please describe the time frames of the five prior business cycles and the beginning of the current cycle.

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

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

Business Cycle	Expansion Period	Contraction Period
1975-1982	Mar. 1975-July 1981	Aug. 1981-Oct. 1982
1982-1991	Nov. 1982-July 1990	Aug. 1990-Mar. 1991
1991-2001	Mar. 1991-Mar. 2001	Apr. 2001-Nov. 2001
2001-2009	Nov. 2001-Nov. 2007	Dec. 2007-June 2009
2009-2020	July 2009-Feb. 2020	Mar. 2020-Apr. 2020
Current	May 2020 -	

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

Q. Please describe how you have examined recent and current economic and financial conditions and their impact on the COC.

A. Exh. DCP-4 shows several sets of relevant economic and financial statistics for the cited time periods. Page 1 contains general macroeconomic statistics, page 2 shows interest rates, and page 3 contains equity market statistics.

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

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

The economic/financial data shown on Exh. DCP-4 indicates the following averages for the cited business cycles:

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

Cycle[7]	No. of Months Exp.	No. of Months Rec.	Real GDP Growth	CPI[8]	A-Rated Utilities Bond Yield
1975-1982	77	15	2.1%	8.3%	11.62%
1983-1991	93	8	3.2%	3.9%	11.04%
1992-2001	121	8	3.6%	2.5%	7.85%
2002-2009	73	19	1.7%	2.6%	6.31%
2010-2020	127	2	1.8%	1.7%	4.22%

This indicates that the most recent business cycle, while having a longer-than-normal expansion period, experienced a lower average annual growth rate of Gross Domestic Product ("GDP") in comparison to the prior cycles. This cycle also experienced the shortest recession period. In addition, both the rate of inflation and yields on utility bonds declined significantly over the most recent three business cycles. This is further indicative of a declining cost of equity capital, as is reflected in declining authorized ROEs for regulated electric and natural gas utilities:

Authorized Returns on Equity[9]

Year	Electric Average	Electric Median	Natural Gas Average	Natural Gas Median
2007	10.32%	10.23%	10.22%	10.20%
2008	10.37%	10.30%	10.39%	10.45%
2009	10.52%	10.50%	10.22%	10.26%
2010	10.29%	10.26%	10.15%	10.10%
2011	10.19%	10.14%	9.91%	10.05%
2012	10.02%	10.00%	9.93%	10.00%
2013	9.82%	9.82%	9.68%	9.72%
2014	9.76%	9.75%	9.78%	9.78%
2015	9.60%	9.53%	9.60%	9.68%
2016	9.60%	9.60%	9.53%	9.50%
2017	9.68%	9.60%	9.73%	9.60%
2018	9.56%	9.58%	9.59%	9.60%
2019	9.65%	9.65%	9.72%	9.72%
2020	9.39%	9.45%	9.46%	9.42%
2021	9.39%	9.39%	9.56%	9.60%
2022	9.52%	9.50%	9.53%	9.60%

[7] Annual periods corresponding to the respective business cycle periods.
[8] Consumer Price Index ("CPI").
[9] *See* S&P Global, Market Intelligence: "Regulatory Focus," February 2, 2021, General Rate Cases; "Major Energy Rate Case Decisions – January-December 2021," February 10, 2022; "Major Energy Rate Case Decisions – January - December 2022," February 2023. Data for electric and natural gas general rate cases.

Q. Please describe the two most recent business cycles and their impact on the COC for utilities and other enterprises.

A. Since 2008, there have been two significant economic events which have impacted capital costs. First, in 2008 and 2009, the U.S. economy declined significantly, initially as a result of the 2007 collapse of the "sub-prime" mortgage market and the related liquidity crisis in the financial sector of the economy and followed by a significant decline in most sectors of the U.S. and global economies. This decline has been described as the worst financial crisis since the Great Depression of the 1930s and has been referred to as the "Great Recession." This was both a substantial (in terms of GDP decline) and longer-lasting recession that resulted in unprecedented Federal Reserve System ("Federal Reserve") and other governmental actions to stimulate the economy. These actions included the Federal Reserve's maintenance of the "Fed Funds Rate" at a near-zero level and the purchase of longer-term U.S. Treasury securities[10] in an effort to stimulate the economy through increasing the money supply and lowering interest rates on federal debt.

Second, in the first quarter of 2020, the U.S. economy entered another recession. This was largely driven by the Coronavirus Disease 2019 (COVID-19) pandemic and the result that the economic and financial consequences of this serious health crisis created a recession as nations, including the U.S., instituted significant travel, social, and commercial restrictions designed to slow the spread of COVID-19. Beginning in March and lasting into June of 2020, much of the world and U.S. were in "lock down" as a

[10] A process known as Quantitative Easing ("QE"). The Federal Reserve implemented three QDE programs following the financial crisis of 2007-2008 (QE 1 through QE 3) and one additional time (QE 4) during the COVID-19 pandemic/recession. *See, e.g.*, https://americandeposits.com.

significant portion of both businesses and governments operated under restrictive conditions in some instances and remained closed in other instances. In addition, the U.S. Federal government instituted two multi-trillion-dollar stimulus programs (i.e., the CARES Act in 2020 and the American Relief Act in 2021) to aid businesses, individuals, and state/local governments during this crisis. Further, the Federal Reserve implemented several financial and stimulus tools to help maintain the U.S. financial system, again through the near-zero Fed Funds Rate and the purchase of U.S. Treasury securities. As before, the effect of the Federal Reserve actions was the maintenance of lower interest rates on federal debt. It is also noteworthy that the 2020 COVID-19 recession was the shortest on record but was one of the most pronounced recessions in terms of degree of economic contraction.[11]

Q. Are there any unique aspects of the COVID-19 recession and the subsequent recovery and aftermath?

A. Yes, there were several unique aspects of this recession. First, as noted, this was the shortest recession on record. This partially reflects the fact that much of the U.S., as well as other countries' economies were purposely "shut down" in order to limit the spread of the COVID-19 virus. Second, the series of stimulus payments and other economic incentives created a rapid apparent recovery, although the U.S. economy showed a decline in GDP for the entire calendar year 2020. Third, the sequential mutations of COVID-19 (e.g., Alpha, Delta, and Omicron variants) continued to create uncertainty in

[11] *See, e.g.*, "U.S. Economic Recovery in the Wake of COVID-19: Successes and Challenges," dated May 31, 2022, Congressional Research Service. *Available at*: https://crsreports.congress.gov.

terms of public health and financial markets. Fourth, the COVID-19 pandemic continues to have an impact on both capital markets and the economy.[12]

Q. Please describe the recent increases in the inflation rate and its impact on the COC.

A. As noted previously, the rate of inflation (e.g., Consumer Price Index ("CPI")) has been relatively low by recent historic standards since the Great Recession and COVID-19 pandemic occurred. Beginning in early 2021, on the other hand, the rate of inflation increased. Initially, it was generally believed that the increase in the inflation rate was related to the impacts of COVID-19 (e.g., "transition" and "supply chain" effects resulting from the economic effects of the COVID-19 pandemic), and the ongoing impact of the Russia-Ukraine conflict.[13] It appears that policymakers (e.g., Federal Reserve) initially believed the initial increase in inflation in 2021 was "transitory" and chose not to react to inflation but instead left existing monetary policy and fiscal stimulus in place to guard against the economic recovery becoming derailed by the ongoing threat of the pandemic.[14] As inflation became more widespread in 2021 and 2022, however, the Federal Reserve reversed this position and turned its attention to containing the rate of inflation. Since the beginning of 2022, the Federal Reserve increased the Fed Funds rate several times in an effort to combat the rate of inflation. This has had a somewhat significant impact on short-term interest rates and has also impacted longer-term interest rates, as is shown on Exh. DCP-4. The Federal Reserve policies also initially had the

[12] *Id.*
[13] *See, e.g.*, "Inflation in the U.S. Economy: Causes and Policy Options," dated October 6, 2022, Congressional Research Service. *Available at*: https://crsreports.congress.gov.
[14] *Id.*

effect of depressing common stock prices, with some indices enduring "bear market" status in 2021.[15]

I note that the past several months have seen a decline from the inflation rate experienced in the first portion of 2022. It is noteworthy that "consensus" forecasts of inflation have been in a declining range from about 3.75 percent made in 2022 to 2.4 percent in the early portions of this year.[16] The most recent annual rate of inflation (3 percent) is well below the highest level (9 percent) in existence in the middle of 2022. In addition, forecasts of Baa bonds are also at a lower level than current levels.[17] These forecasts of declining rates is relevant in the context of a MYRP which considers future levels of property, capital expenditures and capital costs, as described in a later section of my testimony.

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

A. Concurrent with the Great Recession, there was a decline in capital costs and returns which significantly reduced the values of most retirement accounts, investment portfolios, and other assets. One significant aspect of this was a decline in investor expectations of returns even with the return of stock prices to levels achieved prior to the 2008 "crash." The COVID-19 recession and its recovery have seen a continuation of these lower COCs. Specifically, authorized utility ROEs and utility bond interest rates (even reflecting some recent increases) are still at levels well below those prevailing prior

[15] A "bear market" is generally defined as a decline of at least 20 percent from recent highs.
[16] *See* Blue Chip Financial Forecasts, September 1, 2022 and June 30, 2023.
[17] *Id*.

to the financial crisis of late 2008 to early 2009 and remain near the lowest levels over most of the past 45 years.

Q. How do these economic/financial conditions impact the determination of an ROE for regulated utilities?

A. The COCs for regulated utilities have declined in recent years. As an indication of this decline, the results of the traditional ROE models (i.e., DCF, CAPM, CE and RP) are lower than was the case prior to the Great Recession. As a result, it is not surprising that the average ROEs authorized by state regulatory agencies have declined and continued to remain relatively low, as noted previously.

Q. Do current capital market conditions reflect the impact of recent increases in the rate of inflation and certain interest rates?

A. Yes, they do. Security markets (e.g., stock market and interest rates) reflect the collective impact of investors' perceptions of all relevant information.[18] As a result, any perceived impacts of inflation and interest rates are already incorporated in stock and other security prices and, as a result, an analysis of the current COC (using market-based methodologies such as DCF, CAPM, RP, and my version of CE) incorporates these factors. I also note that, even though interest rates have increased in recent months, they are still below the levels preceding the Great Recession and the COVID-19 pandemic, as well as recent years.

[18] This is known as the Efficient Market Hypothesis ("EMH").

V. PACIFICORP'S OPERATIONS AND RISKS

Q. Please describe PacifiCorp and its operations.

A. PacifiCorp is a regulated electric utility that generates, transmits, and distributes electricity to 2 million customers in Washington, Utah, Oregon, Wyoming, Idaho and California. Pacific Power is a division of PacifiCorp and operates as a "trade name" of PacifiCorp in Washington, California and Oregon. PacifiCorp also operates in Utah, Wyoming and Idaho under the "trade name" of Rocky Mountain Power.[19] Prior to March 21, 2006, PacifiCorp was owned by ScottishPower.

Q. Please describe PacifiCorp's ownership structure.

A. As noted above, Pacific Power is a division of PacifiCorp, which is an indirect subsidiary of BHE.[20] BHE's other U.S. utility subsidiaries are:

Nevada Power;
Sierra Pacific Power;
MidAmerican Energy;
Northern Natural Gas;
Kern River Gas Transmission; and,
BHE GT&S.

In 2022, 80 percent of BHE's adjusted earnings was generated by rate-regulated businesses.[21] Within the BHE Utility System, PacifiCorp accounted for 22 percent of 2022 operating revenues[22] and the Washington operations account for 7 percent of PacifiCorp's 2022 operating revenues.[23]

[19] Berkshire Hathaway Energy Co., Dec. 31, 2022, Form 10-K, page 3.
[20] BHE was previously named Mid-American Energy Holding Company.
[21] Berkshire Hathaway Energy Co., Dec. 31, 2022, Form 10-K, page 1.
[22] *Id*. at 89.
[23] *Id*. at 3.

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

Northern Powergrid (United Kingdom);
BHE Transmission (Canada);
BHE Renewables; and,
Home Services.

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

A. Pacific Power, as a division of PacifiCorp, does not issue its own securities directly to investors, but rather is a component of PacifiCorp. It follows that Pacific Power does not have rated securities. The current ratings of PacifiCorp are as follows:[24]

Rating Agency	Senior Unsecured	Senior Secured	Issuer
Moody's	A3	A1	A3
S&P	BBB+	A	BBB+

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

A. This is shown on Exh. DCP-5, page 1. PacifiCorp's senior secured debt has been rated in the "Single A" category by both Moody's and Standard & Poor's since at least 2005.

Q. Please explain your understanding of the recent downgrade of certain of PacifiCorp's securities by S&P.

A. On June 30, 2023, Standard & Poor's (S&P) downgraded PacifiCorp's securities (Issuer Credit rating from A- to BBB+, first mortgage bonds from A+ to A, and senior secured debt from A to BBB+). The stated reason for these downgrades was an Oregon jury

[24] *See*, Exh. DCP-18 (UTC Data Request 145).

verdict that found "PacifiCorp liable for damages in a class action lawsuit related to four wildfires in 2000…The jury's findings that the company acted in a grossly negligent manner reflects safety performance that does not meet stakeholder standards."[25] It is noteworthy that these downgrades result from a jury finding that PacifiCorp acted in a "grossly negligent and reckless manner."[26] I note that, even though this downgrade was the result of a jury verdict relating to Company activities in Oregon, it appears that Washington ratepayers may in the future be required to pay for the "higher financing costs" related to the downgrades.[27]

Q. How do PacifiCorp's ratings compare to the other utilities in BHE?

A. This is shown on page 2 of Exh. DCP-5. As this indicates, PacifiCorp's ratings are higher than three of those of the BHE utility family and less than one utility.

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

A. As I indicated in a previous answer, PacifiCorp has single A (Moody's) and BBB+ (S&P) bond ratings on its issuer credit. Of the 37 electric utilities covered by Value Line (Standard Edition), the following Moody's and Standard & Poor's issuer credit ratings currently exist:

[25] Standard & Poor's, "PacifiCorp Downgraded to 'BBB+', Outlook Revised to Negative; Berkshire Hathaway Energy Co. Outlook Also Negative," June 20, 2023. *See*, Exh. DCP-24, from S&P's website.
[26] *Id*.
[27] *See*, Exh. DCP-25, UTC Data Request 147.

Moody's Ratings	Number of Companies	S&P Rating	Number of Companies
A1	1	AA-	1
A3*	1	A-	10
Baa1	9	BBB+*	16
Baa2	21	BBB	18
Baa3	3	BBB-	1
Ba1	1	BB-	1
Ba2	1		

(* denotes ratings of PacifiCorp)

This comparison indicates that PacifiCorp's ratings are above the most common rating categories of most electric utilities. This is indicative of a lower financial risk for PacifiCorp, even after the recent S&P downgrades.

Q. How do PacifiCorp's ratings compare to other electric utilities operating in Washington?

A. PacifiCorp's ratings (issuer rating) compare to other Washington electric utilities as follows:

	Moody's	S&P
Avista	Baa2	BBB
Puget Sound Energy	Baa1	BBB

It is thus apparent that PacifiCorp's ratings are superior to those of Avista and Puget Sound Energy (PSE), Washington's other major electric utilities.

Q. Please briefly describe the "recent legislation in Washington" and explain how this impacts the risks and costs of capital for PacifiCorp and other Washington utilities.

A. In May of 2021, the Washington legislature passed SB 5295,[28] which:

- Requires a gas or electric company (utilities) to pursue MYRPs that set rates and align cost recovery for several years at a time;
- Allows the Commission to set performance measures to assess a utility under the MYRP;
- Allows utilities to expand bill assistance programs and to invest in programs that achieve energy conservation and improve the energy efficiency of single-family and multifamily rental housing; and,
- Allows utilities to provide financial assistance to organizations who represent highly impacted communities and vulnerable populations in regulatory proceedings.

It is my understanding that this legislation provides the impetus for the two-year Rate Plan that forms the basis for PacifiCorp's current application.

It is also my belief that this legislation is largely beneficial to Washington utilities, including PacifiCorp, as it provides a more stable regulatory and financial environment. In this regard, Moody's stated:

> On 3 May 2021, Washington State Governor Jay Inslee signed into law a senate bill (SB 5295) aimed at reforming the regulatory framework for utilities in the state by paving the way for multi-year rate plans (MYRP) and performance based ratemaking (PBR). The bill could enhance the consistency and predictability of utility regulation and provides credit positive opportunities for Washington's utilities, including Puget Energy Inc's (Puget, Baa3, stable) primary subsidiary Puget Sound Energy, Inc. (PSE, Baa1, stable) and Avista Corp. (Avista, Baa2, stable), to reduce regulatory lag and earn returns closer to their authorized returns on equity (ROE). However, improved regulatory and financial outcomes for these utilities remain subject to the bill's implementation by the Washington Utilities and Transportation Commission (WUTC), the state's utility regulator.

[28] Codified as RCW 80.28.425.

> The bill requires the WUTC to develop, in collaboration with utilities and other interested stakeholders, a policy statement on alternatives to traditional cost of service rate making, including performance measures, incentives, and penalty mechanisms. The WUTC must provide an update to the relevant legislative committees by 1 January 2022.
>
> Importantly, beginning 1 January 2022, utilities are required to include a proposal for a MYRP between two and four years in length in every general rate case filing. The bill allows for property that is deemed used and useful as of the rate effective date of the first year of a MYRP to be included in rate base, with the remainder of the rate plan based on forecasted information. This would be a material improvement over the historical test year currently used by utilities in rate cases and help reduce regulatory lag, a credit positive. The terms approved by the WUTC for the first two years of a MYRP are binding, but utilities must update power costs at the beginning of the third year and may file a new multi-year rate plan for the third and fourth rate year, if applicable. In addition, if a utility earns a rate of return 50 basis points higher than authorized, excess revenues must be deferred for customer refund or other uses as determined by the WUTC in a subsequent proceeding.
>
> ….
>
> This new law follows Washington's Clean Energy Transformation Act (CETA), signed into law in May 2019, that requires utilities to eliminate coal-fired electricity by 2025 and commits to a carbon free electricity supply by 2045. While the CETA also clarified the WUTC's authority to consider and implement various constructive regulatory mechanisms including MYRPs and PBR regulation, SB 5295 provides more enforceable guidance. We view the PBR construct as credit positive because MYRPs with performance targets and the potential to earn performance incentives will not only work to reduce regulatory lag, but also aid PSE's and Avista's renewable transition, improve operational efficiency and enhance cash flow and profitability, all while considering customer cost and service.[29]

It is apparent from these statements that Moody's considers the recent regulatory mechanisms to be credit supportive, and therefore risk reducing for Washington electric utilities.

[29] Moody's Investors Service, Issuer Comment, dated 10 May 2021, "Puget Sound Energy Inc. and Avista Corp. Legislation supporting multi-year rate plans has positive credit implications for Washington's investor-owned utilities."

Q. Did Moody's and S&P comment specifically on the impact of SB 5295 as it relates to PacifiCorp?

A. No. Most of the Moody's and S&P comments centered on PSE and Avista as these two entities derive a much larger portion of their revenues, income and assets from their respective Washington operations than does PacifiCorp. On the other hand, S&P made the following comments about the impact of regulatory mechanisms on PacifiCorp's ratings:

> From a regulatory standpoint, PacifiCorp operates under generally constructive regulatory environments that offer opportunities to recover capital and operating costs with minimal regulatory lag. The constructive mechanisms provided by regulators vary by state and include decoupling, fuel cost recovery mechanisms, and renewable adjustment clauses. These mechanisms support the company's operating cash flows and allow it to achieve returns close to its authorized levels.[30]

Q. You mentioned the impact of SB 5295 on PSE and Avista, the two entities that have a much larger portion of their operations in Washington. Have Moody's and S&P commented specifically on Avista's and PSE's expected impact from SB 5295?

A. Yes. Moody's also stated the following in a report on PSE:

> The more recently passed SB 5295 (enacted on 3 May 2021) followed the clean energy bill and aims at reforming the regulatory framework for utilities in the state by paving the way for multiyear rate plans (MYRP) and performance based ratemaking (PBR). We view the bill as credit positive as it could enhance the consistency and predictability of utility regulation. Specifically, we view the PBR construct as a credit supportive rate making mechanism because MYRPs with performance targets and the potential to earn performance incentives will work to reduce regulatory lag. It could also aid PSE's renewable transition, improve operational efficiency and enhance cash flow and profitability, all while considering customer cost and service.[31]

[30] Standard & Poor's Global Ratings, "Ratings Direct, PacifiCorp," dated April 21, 2022.
[31] Moody's Investors Service, Credit Opinion, dated 26 August 2021, "Puget Sound Energy, Inc., Update to credit analysis."

Moody's also noted:

> Puget Sound Energy, Inc.'s (PSE) credit profile reflects its low risk regulated utility operations with a number of credit supportive cost recovery mechanisms authorized by its primary regulator, the Washington Utilities and Transportation Commission (WUTC).[32]

S&P issued similar analyses and statements:

> **Rating Action Rationale**
> **Washington's SB 5295 includes the mandatory filing of an MYRP that we view as credit supportive.** We expect Puget will file its first MYRP in January 2022, with new rates effective the following year. Under the new legislation, utilities must file an MYRP between two and four years long. We expect the commission will approve the MYRPs, reducing regulatory lag and cash flow volatility. Furthermore, power costs are trued-up after the second year, improving cash flow predictability. We believe Washington's new law, predicated on the commission implementing it in a credit supportive way, could improve the regulatory environment.[33]

It is correspondingly clear that Moody's and S&P regard the recent legislation as risk-reducing to Avista and PSE. It follows that PacifiCorp's Washington operations also benefit from SB 5295.

Q. What is the significance of this legislation as it impacts PacifiCorp and its ROE in this proceeding?

A. It is apparent that SB 5295, as well as several other favorable regulatory mechanisms (as cited by Moody's and S&P) the Company has access to, provides favorable risk-reducing attributes to PacifiCorp. The impact of these mechanisms, on both an individual and collective basis, is to transfer a significant portion of PacifiCorp's risks from its shareholders to its ratepayers. This risk transfer is not voluntary from the ratepayer

[32] *Id.*
[33] S&P Global Ratings, "RatingsDirect, Research Update, Puget Energy Inc. And Subsidiary Outlooks Revised To Stable Following New Rate Plan Legislation; Rating Affirmed," dated May 27, 2021.

perspective. I correspondingly believe that ratepayers should receive some benefit for their acceptance of this risk transfer.

Q. How do you propose that PacifiCorp's ratepayers be compensated for this risk transfer?

A. I first note that the most relevant impact of the recent legislation is to reduce the overall level of risks to PacifiCorp, compared to what the risks were prior to the implementation of the legislation. In other words, PacifiCorp is less risky on a "post-legislation" basis than it was on a "pre-legislation" basis.

I recommend that the ROE established in this proceeding be set at a level that is no higher than the lower end of the market-determined ROE for the proxy group, as established by the various ROE models employed in this proceeding, which is 9.5 percent. The Commission recognizing the impact of SB 5295 would be consistent with the reduced risk PacifiCorp is now exposed to in conjunction with the MYRP legislation's elimination of regulatory lag, as well as the PBR ratemaking mechanisms.[34] This is also consistent with the Commission's preference for the concept of gradualism, as cited in a later portion of my Direct Testimony.

[34] I note that in the initial MYRP application of PSE (Dockets UE-220066 *et.al.*) I recommended that PSE's ROE for its proposed MYRP be set at a level no greater than the mid-point of a market-determined ROE for the proxy group. At that time the MYRP had not been implemented in Washington by the Commission such that the positive impacts of the MYRP concept were not fully recognized. Now that the MYRP has been implemented it is proper to recognize the concept in a lower portion of the ROE range.

VI. CAPITAL STRUCTURES AND COSTS OF DEBT

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

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

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

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

Q. What are the historic capital structure ratios of PacifiCorp and BHE?

A. I have examined the historic actual capital structure ratios of PacifiCorp and BHE. These are shown on Exh. DCP-6. I have summarized below the common equity ratios for PacifiCorp since March 31, 2006; *i.e.*, time of merger with BHE. These are seen to be as follows:

	PacifiCorp	
Year	Incl. S-T Debt	Excl. S-T Debt
03/31/06	48.8%	51.3%
2006	48.4%	51.4%
2007	49.2%	51.2%
2008	51.1%	52.1%
2009	50.7%	50.7%
2010	53.1%	53.2%
2011	51.3%	53.9%
2012	52.5%	52.6%
2013	53.2%	53.2%
2014	52.4%	52.4%
2015	51.1%	51.2%
2016	50.1%	51.0%
2017	51.5%	51.7%
2018	52.5%	52.6%
2019	51.8%	52.3%
2020	51.1%	51.4%
2021	53.0%	53.0%
2022	52.4%	52.4%

This indicates that PacifiCorp's equity ratio was 49 percent or less (including short-term debt) at the time of its purchase by BHE and remained at or below 49 percent until 2008. Since then, it has been in the range of 50 percent to 53 percent.

Page 2 of Exh. DCP-6 shows BHE's equity ratios over the past five years:

	Berkshire Hathaway Energy	
Year	Incl. S-T Debt	Excl. S-T Debt
2018	43.3%	46.4%
2019	43.3%	46.8%
2020	41.3%	43.1%
2021	45.7%	47.3%
2022	46.2%	48.3%

This indicates that BHE, PacifiCorp's parent, has been capitalized with much lower levels of equity, on a consolidated basis, than has been the case for PacifiCorp.

Page 3 of Exh. DCP-6 reflects the 2022 capital structure ratios of PacifiCorp and the other utility subsidiaries of BHE. As is shown there, this indicates that PacifiCorp has similar equity ratios to those of BHE's other electric subsidiaries.

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

A. Exh. DCP-7 shows the common equity ratios (excluding short-term debt in capitalization) for the group of proxy electric utilities used in developing my cost of equity models and related conclusions. These are:

	Period	Average	Median
Proxy Group	2018-2022	49.2%	48.7%
	2026-2028	48.4%	48.0%

The equity ratios for my proxy group are slightly lower than those of PacifiCorp (excluding short-term debt).

Q. What have been the average common equity ratios adopted by U.S. State Regulatory Agencies in recent years?

A. Over the past several years, the average common equity ratios cited in U.S. state regulatory electric rate proceedings have been:[35]

	Electric
2012	50.69%
2013	49.25%
2014	50.28%
2015	49.54%
2016	48.91%
2017	48.90%
2018	48.95%
2019	49.94%
2020	49.66%
2021	50.06%
2022	50.36%

These are slightly lower than those of PacifiCorp's common equity ratios. It is noteworthy, on the other hand, that these equity ratios reflect a combination of approved capital structures, some of which include short-term debt and some of which exclude short-term debt.

Q. What capital structure is PacifiCorp requesting?

A. PacifiCorp is proposing the following capital structure ratios, which reflect a "five-quarter average spanning the 12 months ending December 31, 2024:[36]

Long-Term Debt	48.72%
Preferred Stock	0.01%
Common Equity	51.27%

[35] S&P Global, Market Intelligence, as cited in footnote 9.
[36] Kobliha, Exh. NLK-1T at 2: Table 1; 9-13.

This proposed capital structure contains a higher common equity ratio than the structure recognized by the Commission in the most recent litigated general rate cases (*i.e.*, 49.1 percent).[37] It is also higher than the average common equity ratios of publicly traded combination electric/gas utilities, as well as the proxy group. Finally, it is higher than the currently authorized equity ratios of the other Washington electric utilities Avista (48.5 percent) and PSE (49.0 percent).

I note that PacifiCorp has not provided a COC for the second year of its MYRP (December 31, 2025). It is my understanding that Staff prefers to incorporate COC analyses for each year of the proposed MYRP as part of its evaluation of the filings. I note that both Staff and the utility provided COC analyses for each year of the MYRP of PSE.[38] I further note that Staff has requested from PacifiCorp the information necessary to perform a 2025 COC for the Company[39] but, to date, this information has not been provided. If and when PacifiCorp provides the requested information, I intend to prepare a December 31, 2025 COC for the Company.

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

A. I recommend that the Commission use the same capital structure ratios adopted in prior litigated cases, which is 49.1 percent common equity. This 49.1 percent common equity ratio is similar to that of the industry-wide electric and combination electric utilities I just

[37] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-152253, Order 12, 3 (Sept. 1, 2016).
[38] *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy Inc.*, Dockets UE 220066 & UG 220067, Bulkley, Exh. AEB-1T; Parcell, Exh. DCP-1T (Dec. 22, 2022).
[39] Parcell, Exhs. DCP-20 through 23 (UTC Data Requests 15, 77, 78 and 79).

cited. I note that the Commission again evaluated and recognized the appropriateness of this capital structure in PacifiCorp's last litigated general rate proceeding, which was decided in 2016.[40]

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

A. It is my understanding that the Commission's policy on determining a capital structure balances safety (the preservation of investment quality credit ratings and access to capital) against economy (the lowest overall cost to attract and maintain capital).[41] The Commission noted that the appropriate capital structure can either be the Company's historical capital structure, the projected capital structure, or a hypothetical capital structure.

Q. Are your recommended capital structures consistent with this policy?

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

Q. What are the cost rates of debt and preferred stock in the Company's application?

A. PacifiCorp's filing requests a cost of long term debt of 4.77 percent and a cost of preferred stock of 6.75 percent. Each of these is the Company's actual cost rates for the

[40] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-152253, Order 12, (Sept. 1, 2016).
[41] *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy, Inc.*, Dockets UE-040640 and UG-040641, Order 06, at 13, ¶ 27 (Feb. 18, 2005).

December 31, 2024, period.[42] I propose use of these cost rates in my COC analyses. For the cost of short-term debt, I am using the December 31, 2022, cost rate for PacifiCorp, pending the receipt of the requested cost rate for December 31, 2024.

Q. Can the ROE be determined with the same degree of precision as the costs of debt?

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

VII. SELECTION OF PROXY GROUP

Q. How have you estimated the ROE for PacifiCorp?

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

I have selected one such group for comparison to PacifiCorp. I selected a group of electric utilities using the criteria listed on Exh. DCP-8. These criteria are as follows:

1. Market "cap" of $1 billion to $30 billion;
2. Common equity ratio 40% to 60%;

[42] Kobliha, Exh. NLK-1T at 2, Table 1.

3. Value Line Safety of 1 or 2;

4. Moody's or S&P's bond ratings of A or BBB; and

5. Currently pays dividends and has not reduced dividends in the past five years.

Exh. DCP-8 also indicates the reasons that I did not select several of Company witness Bulkley's proxy companies in my proxy group.

VIII. DCF ANALYSIS

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

A. The DCF model is one of the oldest and most commonly used models for estimating the ROE for public utilities.

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

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

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

where: P = current price

D = current dividend rate

K = discount rate (cost of capital)

g = constant rate of expected growth

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

Q. Please explain how you employ the DCF model.

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

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

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

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

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

The P_0 in my yield calculation is the average of the high and low stock price for each proxy company for the most recent three-month period (May – July 2023). The D_0 is the current annualized dividend rate for each proxy company.

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

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

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

1. Years 2018-2022 (5-year average) earnings retention, or fundamental growth (per Value Line);

2. Five-year average of historic growth in earnings per share (EPS), dividends per share (DPS), and book value per share (BVPS) (per Value Line);

3. Years 2023, 2024 and 2026-2028 projections of earnings retention growth (per Value Line);

4. Years 2020-2022 to 2026-2028 projections of EPS, DPS, and BVPS (per Value Line); and

5. Five-year "consensus" projections of EPS growth (per First Call and Zacks, as reported in Yahoo! Finance and Zack's websites, respectively).

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

Q. Please describe your DCF calculations.

A. Exh. DCP-9 presents my DCF analysis. Page 1 shows the calculation of the "raw" (*i.e.*, prior to adjustment for growth) dividend yield for each proxy company. Pages 2, 3 and 4 show the various growth rates for the group of proxy companies. Page 5 shows the DCF calculations, which are presented on several bases: mean, median, low and high values. These results can be summarized as follows:

	Mean	Median	Mean Low[43]	Mean High[44]	Median Low[45]	Median High[46]
Proxy Group	8.4%	8.4%	7.4%	9.6%	7.5%	9.9%

I note that the individual DCF calculations shown on Exh. DCP-9 should not be interpreted to reflect the expected cost of capital for individual companies in the proxy group; rather, the individual values shown should be interpreted as alternative information considered by investors.

[43] Using only the lowest average growth rate.
[44] Using only the highest average growth rate.
[45] Using the lowest median growth rate.
[46] Using only the highest median growth rate.

Q. What do you conclude from your DCF analyses?

A. The DCF rates resulting from the analysis of the proxy group fall into a wide range between 7.4 percent and 9.9 percent. The highest DCF rates, on both a mean and median basis, are 9.6 percent to 9.9 percent.

I believe a range of 9.6 percent to 9.9 percent (9.75 percent mid-point) represents the current DCF-derived ROE for the proxy group. This range includes the highest DCF rates and exceeds the low and mean/median DCF rates. I note that the upper end of the DCF range reflects the EPS forecasts for the proxy group and exceeds the average and medial results. As a result, my use of this set of growth rates results in a favorable DCF ROE result for the proxy group.

Q. Does PacifiCorp witness Bulkley also perform DCF analyses?

A. Yes. Company witness Bulkley cites DCF results within a broad range of 8.11 percent to 10.53 percent.[47]

Q. What are your disagreements with Company witness Bulkley's DCF analyses?

A. Company witness Bulkley's constant growth DCF analyses are based on 30-day, 90-day, and 180-day average stock prices for the periods ending January 31, 2023, annualized dividends per share as of January 31, 2023[48] The DCF analyses are applied to a proxy group of seventeen electric utility holding companies.

Company witness Bulkley's constant growth DCF analyses are shown on Exhibit AEB-6. It is apparent from a review of this exhibit that the "Low DCF ROE" for each

[47] Bulkley, Exh. AEB-1T at 36, Figure 7.
[48] *Id*. at 34:9-11.

proxy company reflects the dividend yield and the lowest of the three growth rates. The "Mean DCF ROE" considers the average of all three growth rates and the "High DCF ROE" only considers the highest growth rate for each company. Stated differently, the "High DCF" result considers only the highest of the three growth rates for each individual company and ignores the other two growth rates for that company. Thus, for example, the "Mean High DCF" result for one proxy company may reflect only the Zacks EPS Growth, while the "Mean High DCF" result for another proxy company may reflect only the Value Line growth result.

Q. Is it appropriate to focus on the highest growth rate, on a company-to-company basis, to determine the cost of equity for an electric utility such as PacifiCorp?

A. No. Even though Company witness Bulkley purports to use three sets of growth rates in the DCF analyses, in reality it is only using one growth rate – the expected growth rate in EPS. The three sets of growth rates are actually three separate sets of "consensus" estimates of EPS growth. I note that, when Company witness Bulkley performs DCF analyses using all three sets of EPS growth estimates, the DCF results (mean and median) are in a range of 8.17 percent to 10.53 percent[49] which is similar to my DCF conclusions of 9.6 percent to 9.9 percent. It is only by selecting the highest of the EPS projections for each proxy company from the range of such projections that Company witness Bulkley derives DCF results above 9.5 percent.

Focusing only on the highest growth rate projections on a company-by-company basis implicitly assumes that investors rely exclusively on the "rosiest" estimate of EPS

[49] *Id*. at 36, Figure 7.

growth in making investment decisions. This is an unlikely assumption of investor behavior. In fact, a case could be made that a "prudent" investment strategy would be to place more reliance on the lower or lowest value of "consensus" EPS estimates.

I note that, of Company witness Bulkley's various DCF results, the "mean" results (i.e., 9.40 percent to 9.54 percent) are slightly lower than my DCF results. It is only by considering the "high" DCF (i.e., the most "rosy" results) that a higher DCF result than my findings can be justified.

IX. CAPM ANALYSIS

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

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

Q. How is the CAPM derived?

A. The general form of the CAPM is:

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

where: K = cost of equity

R_f = risk free rate

Rm = return on market

β = beta

R_m-R_f = market risk premium

The CAPM is a variant of the RP method. They differ in the sense that the CAPM specifically recognizes the risk of a particular company or industry (i.e., beta), whereas the simple RP method assumes the same ROE for all companies exhibiting similar bond ratings or other characteristics.

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

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

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

I have performed CAPM calculations using the three-month average yield (May – July 2023) for 20-year U.S. Treasury bonds. I use the yields on long-term Treasury bonds since this matches the long-term perspective of ROE analyses. Over this three-month period, these bonds had an average yield of 4.05 percent.

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

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

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

A. The market risk premium component (R_m-R_f) represents the investor-expected premium of common stocks over the risk-free rate, or long-term government bonds. For the purpose of estimating the market risk premium, I considered alternative measures of returns of the S&P 500 (a broad-based group of large U.S. companies) and 20-year U.S. Treasury bonds (*i.e.*, same timeframe as employed in SBBI Yearbook[50] source used to develop risk premiums).

First, I compared the actual annual ROEs of the S&P 500 with the actual annual income returns of U.S. Treasury bonds. Exh. DCP-10 shows the ROEs for the S&P 500 for the period 1978-2022 (all available years reported by S&P). This schedule also indicates the annual yields on 20-year U.S. Treasury bonds and the annual differentials (i.e., risk premiums) between the S&P 500 and U.S. Treasury 20-year bonds. Based upon these returns, I conclude that the risk premium from this analysis is 7.8 percent.

I next considered the total returns (i.e., dividends/interest plus capital gains/losses) for the S&P 500 as well as for long-term government bonds, as tabulated by SBBI, using both arithmetic and geometric means. I considered the total returns for the entire 1926-2022 period reported by this source, which are as follows:

	S&P 500	L-T Gov't Bonds	Risk Premium
Arithmetic	12.0%	5.6%	6.4%
Geometric	10.1%	5.2%	4.9%

[50] 2023 SBBI Yearbook, Stocks, Bonds, Bills and Inflation. U.S. Capital Markets Performance by Asset Class, 1926-2022, published by Kroll (formerly Duff and Phelps, Morningstar, and Ibbotson Associates).

I conclude from this analysis that the expected risk premium is about 6.4 percent (i.e., average of all three risk premiums: 7.8 percent from Exh. DCP-10; 6.4 percent arithmetic and 4.9 percent geometric from SBBI). I believe that a combination of arithmetic and geometric means is appropriate since investors have access to both types of means[51] and presumably, both types are reflected in investment decisions and thus, stock prices and the ROE.

Q. What are your CAPM results?

A. Exh. DCP-11 shows my CAPM calculations. The results are:

	Mean	Median
Proxy Group	9.7%	9.8%

Q. What is your conclusion concerning the CAPM ROE?

A. The CAPM results collectively indicate a ROE of 9.7 percent to 9.8 percent (9.75 percent midpoint) for the group of proxy utilities. I conclude that an appropriate CAPM ROE estimation for PacifiCorp is 9.75 percent.

Q. Are you proposing that these CAPM conclusions be given consideration in your ROE recommendations in this proceeding?

A. Yes, I am. Over the past several years, I have not given the CAPM results weight in my final ROE recommendations. As I have noted, recent U.S. Treasury bond yields have been heavily impacted by Federal Reserve monetary policies designed to stimulate the

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

economy from the implications of the Great Recession and the COVID-19 pandemic. In recent months, the Federal Reserve has somewhat reversed this monetary policy strategy, partly in response to the increase in inflation rates,[52] such that yields on U.S. Treasury bonds now more accurately reflect the "market" cost of federal debt. As a result, I now believe that CAPM ROE results should receive weight in the ROE determination for utilities, including PacifiCorp.

Q. How do your CAPM results compare to the CAPM results of Company witness Bulkley?

A. Company witness Bulkley's testimony reaches CAPM conclusions of 10.33 percent to 11.66 [53] These greatly exceed the CAPM results my testimony supports.

Q. Do you have any comments concerning Company witness Bulkley's CAPM analyses?

A. Yes, I do. I primarily disagree with Witness Bulkley's risk premium estimates. I also disagree with the use of the "empirical" CAPM ("ECAPM").

Q. What are your concerns with Company witness Bulkley's market risk premium component?

[52] Due, in part, to "transition" impacts from COVID-19 shut-down, "supply-chain" effects, and the impact of the Russia-Ukraine conflict.
[53] Bulkley Exh. AEB-1T at 42: Figure 9.

A. Company witness Bulkley computes a market risk premium (range of 8.60 percent to 8.79[54]) by calculating a constant growth DCF for the S&P 500 companies (using EPS forecasts as the growth component) of 12.50 percent.[55, 56] I have previously indicated that Company witness Bulkley's DCF methodology over-states the required ROE. In addition, the use of U.S. Treasury securities as the baseline for the market risk premium is improper during the time period utilized due to the effects of the Federal Reserve's policies and the related impact on U.S. Treasury yields. As I note elsewhere in my testimony, the yields on U.S. Treasury securities over the past several years have been impacted by the Federal Reserve monetary policies designed to offset the impacts of the Great Recession and the COVID-19 pandemic. As a result, these yields should not be used to develop a risk premium and doing so results in inflated risk premiums. This is further reflected in the market risk premium results (i.e., 8.60 percent to 8.79 percent) which are well above the historic levels of risk premiums between the 1926-2022 returns on the S&P 500 and long-term U.S. Treasury bonds, as I described above.

Q. Why do you disagree with Company witness Bulkley's use of the ECAPM?

A. Company witness Bulkley also performs an "empirical" CAPM analysis, which assigns 75 percent weight to actual betas for the proxy group of electric utilities and a 25 percent weigh to an assumed beta of 1.0.[57] I disagree with the ECAPM, since it arbitrarily ignores the actual betas of the proxy utilities and, instead, assigns hypothetical betas to them. It also assumes that investors, such as those who subscribe to and rely on

[54] *Id*.; Exh. AEB-7.
[55] *Id*. at 39:2-10.
[56] *Id*. at 39:8-10.
[57] *Id*. at 40:2-9.

investment services such as Value Line, do not use the actual published Value Line betas but rather "modify" the published betas in an arbitrary fashion.

X. CE ANALYSIS

Q. Please describe the basis of the CE methodology.

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

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

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

Q. How do you apply the CE methodology in your analysis of PacifiCorp's ROE?

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

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

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

A. My CE analysis considers the experienced ROEs of the proxy group of utilities for the period 2002-2022 (i.e., the last twenty-two years), as well as projected ROEs. The CE analysis requires that I examine a relatively long period of time in order to determine trends in earnings over at least a full business cycle. Further, in estimating a fair level of return for a future period, it is important to examine earnings over a diverse period of time in order to avoid any undue influence from unusual or abnormal conditions that may

occur in a single year or shorter period. Therefore, in forming my judgment of the current cost of equity, I focused on two historic periods: 2009-2020 (the most recent business cycle) and 2002-2008 (the prior business cycle). I have also considered ROEs for 2021, 2022 and projected ROEs for 2023, 2024 and 2026-2028 (i.e., current business cycle).

Q. Please describe your CE analysis.

A. Exh. DCP-12 and Exh. DCP-13 contain summaries of experienced ROEs and M/Bs for two groups of companies, while Exh. DCP-14 presents a risk comparison of utilities versus unregulated firms.

Exh. DCP-12 shows the ROEs and M/Bs for the group of proxy utilities. These can be summarized as follows:

	Proxy Group
Historic Periods ROE	
Mean	9.2-9.3%
Median	9.2-9.3%
Historic M/B	
Mean	147-162%
Median	143-156%
Current Period ROE	
Mean	9.3-10.1%
Median	9.0-9.5%

These results indicate that historic ROEs of 9.2 percent to 9.3 percent been adequate to produce M/Bs of 143 percent to 162 percent for the group of utilities. In addition, current and estimated ROEs of 9.0 percent to 10.1 percent for my proxy group have been accompanied by M/Bs of over 160 percent in the most recent year (2022).

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

A. Yes. As an alternative, I also examine the S&P 500. This is a well-recognized group of firms that is widely utilized in the investment community and is indicative of the competitive sector of the economy. Exh. DCP-13 presents the earned ROEs and M/Bs for the S&P 500 over the past twenty-one years (i.e., 2002-2022). As this schedule indicates, over the two business cycle periods,[58] this group's average ROEs ranged from 12.4 percent to 14.2 percent, with average M/Bs ranging between 275 percent and 288 percent.

Q. How can the above information be used to estimate PacifiCorp's ROE?

A. The recent ROEs of the proxy utilities and S&P 500 group can be viewed as an indication of the level of return realized and expected in the regulated and competitive sectors of the economy. In order to apply these returns to the ROE for the proxy utilities, however, it is necessary to compare the risk levels of the utilities and the competitive companies. I do this in Exh. DCP-14, which compares several risk indicators for the S&P 500 and the electric utility proxy group. The information in this exhibit indicates that the S&P 500 is riskier than the utility proxy group.

Q. What ROE is indicated by your CE analysis?

A. Based on recent ROEs and M/Bs, my CE analysis indicates that the ROE for the proxy utilities is no more than 9.0 percent to 9.5 percent (9.25 percent mid-point). Recent

[58] My analysis of the S&P 500 includes the years 2021 and 2022 in the recent business cycle, as there are no Value Line estimated ROEs for this group as a whole and therefore the 2021 and 2022 figures do not reflect a "current business cycle" projection.

ROEs of 9.1 percent to 9.3 percent have resulted in M/Bs of 143 percent and over. Current/prospective ROEs of 9.0 percent to 10.11 percent have been accompanied by M/Bs over 160 percent. As a result, it is apparent that authorized returns below this level would continue to result in M/Bs of well above 100 percent. As I indicated earlier, the fact that M/Bs substantially exceed 100 percent indicates that historic and prospective ROEs of 9.0 percent to 9.5 percent reflect earning levels that are well above the actual cost of equity for those regulated companies. I also note that a company whose stock sells above book value can attract capital in a way that enhances the book value of existing stockholders, thus creating a favorable environment for financial integrity. Finally, I note that my 9.0 percent to 9.5 percent CE recommendation generally reflects the actual and prospective ROEs for the proxy group. I have made no adjustments to these return levels to reflect the high M/Bs.

Q. Please now turn to Company witness Bulkley's Expected Earnings Approach. Please summarize the use of this methodology and conclusions.

A. Company witness Bulkley's Expected Earnings Approach is a form of the comparable earnings methodology. Witness Bulkley has tabulated Value Line's "expected" return on equity for the proxy group of companies, which is adjusted for a return on average equity (as opposed to Value Line's reporting on year-end equity).

Witness Bulkley's tabulation shows an "Adjusted Return on Common Equity" average of 11.25 percent to 11.31 percent.[59]

[59] Bulkley, Exh. AEB-1T at 47:10-11; Exh. AEB-11.

Q. Do you have any criticisms of Company witness Bulkley's Expected Earnings Approach and related conclusions?

A. Yes. It is inappropriate to focus only on expected ROE without any reference to how such returns are accepted by investors. A more appropriate analysis of expected returns on equity is done in conjunction with M/Bs. I reviewed witness Bulkley's Expected Earnings Approach by evaluating the investor acceptance of these cited ROEs by reference to the corresponding M/Bs. In this manner, it is possible to assess the degree to which a given level of ROE equates to the COC, as I described previously. Book value is a relevant concept for regulated utilities due to the use of rate of return, rate base regulation, which employs book value for both rate and capital structure. Investors know that utility rates are established based, in part, on book values.

Exh. DCP-12 on page 3 shows the 2021-2022 actual ROE's and 2023, 2024, and 2026-28 projected ROE's of witness Bulkley's proxy group, as well as the 2022 M/Bs of this group. It is noteworthy that the actual 2021 and 2022 ROEs are well below witness Bulkley's CE recommendation. I also note that the annual medians are about 10 percent. Finally, the 2022 M/Bs are above 190 percent, which indicates that the ROEs are expected to exceed the COC.

Third, it is evident that the expected ROEs for the proxy companies, which are mostly holding companies, are substantially higher than the authorized ROEs for electric utilities.

Company witness Bulkley's "Expected Earnings Approach" is thus shown to also overstate the ROE for electric utilities. Company witness Bulkley's use of expected ROEs for the proxy companies, without reference or corroboration with either M/Bs or

the levels of authorized ROEs, does not provide useful information concerning the ROE for PacifiCorp.

XI. RISK PREMIUM ANALYSES

Q. What are your responses to Company witness Bulkley's bond yield plus risk premium analysis?

A. Company witness Bulkley's risk premium approach compares the allowed ROEs for vertically-integrated electric utilities and 30-Year U.S. Government Bond yields over the period 1992 to January 2023[60] Company witness Bulkley applies a regression result to various projected levels of 30-year U.S. Treasury Bonds and correspondingly arrives at a 10.28 percent to 10.32[61] [62]

Company witness Bulkley's bond yield plus risk premium analysis suffers from the same deficiencies as the market risk premium and CAPM analyses. In addition, it uses recent U.S. Treasury 30-year bond yields to calculate the risk premium, which have recently been impacted by the Federal Reserve policies associated with the Great Recession and COVID-19 recession. The improperly influences the risk premium conclusions.

In addition, the risk premium analyses, by going back to 1992, is impacted by the differences in the risks faced by electric utilities over this period. For example, in the

[60] *Id.* at 44:3-4.
[61] *Id.* at 45:2-10; Exh. AEB-10.
[62] For example, in 2014 Moody's upgraded most electric utilities, largely as a result of a "suite of transparent and timely cost and investment recovery mechanisms." *See* Moody's Investors Service, Sector Comment, "US utility sector upgraded driven by stable and transparent regulatory frameworks," February 3, 2014.[62]

early 1990s, electric utilities were engaged in diversification and deregulation (which was accompanied by a higher level of risks), a trend that has been reversed over the past decade. In addition, the prevalence of favorable regulatory mechanisms over the more recent period had decreased the risk of utilities.

Finally, Company witness Bulkley's risk premium approach incorporates a recognition and measurement of the inverse relationship between the level of interest rates and the level of risk premiums. This requires an additional set of factors and assumptions which impact the ultimate RP conclusions.

Q. Have you performed an independent RP analysis in order to avoid the deficiencies in Company witness Bulkley's RP analysis?

A. Yes, I have. As I noted above, Company witness Bulkley's RP analyses consider the authorized ROEs of electric utilities dating back to 1992, a relatively long period of time. As I indicated earlier in my testimony (and as shown on Exh. DCP-3, page 2), this period experienced significant declines in interest rates, which is another component of the RP analysis. Company witness Bulkley attempts to "correct" for changes in interest rates by performing a regression analysis that considers only the perceived relationship between authorized ROEs, interest rates, and the resulting period RPs. Such an analysis does not recognize any other changes in RPs, such as the electric utility industry's movement into and out of diversification and deregulation in the 1990s, as well as increased use of regulatory mechanisms (i.e., decoupling, cost recovery mechanisms, etc.) over the past decade. As a result, this regression analysis does not properly capture the current relationship between authorized ROEs and interest rates, as it assumes that there are no

factors other than interest rates that impact risk premiums over the study period going back to 1992.

I have accordingly performed a risk premium analysis that focuses on the most recent ten-year period of authorized ROEs and single-A (i.e., PacifiCorp's rating category) utility bond yields. My analysis, by focusing on the more current time period, is not subject to the longer-term deficiencies in Company witness Bulkley's risk premium analyses (e.g., changes in regulatory environment) over the shorter time period.

Q. Please describe your risk premium analysis.

A. My RP analysis is shown on Exh. DCP-15. I have compared the authorized ROEs of electric utilities that were decided in the period 2012 to 2022. I show two sets of sub-periods: the period 2012 – 2019 (when average interest rates were 3.98 percent to 4.52 percent), and 2012 – 2022 (which adds the three most recent years to the earlier period). I focus on the period 2012 to 2019 since the prevailing level of interest rates on single-A utility bonds during this period was in the range of 3.98 percent to 4.52 percent, or similar to the recent (pre-COVID-19) level of interest rates. I note that the inclusion of 2020 to 2022 risk premiums are impacted by the COVID-19 pandemic and are not consistent with the 2012 – 2019 years.

Also shown on Exh. DCP-15 are the levels of single-A utility bonds, with corresponding "lags" (between the level of interest rates and the respective commission decisions) of:

No months,
3 months,

6 months,
9 months, and
12 months.

The purpose of showing the lags is to recognize that authorized ROEs often reflect test period and/or hearing period financial conditions that are not simultaneous with the date of the respective commission's final decision establishing the authorized ROEs.

The data in Exh. DCP-15 show the annual average of authorized ROEs for electric utilities, along with several lagged interest rates, as well as the resulting risk premiums associated with the first two sets of figures.

Q. What are the results of your calculations?

A. As shown on Exh. DCP-15, the annual and multi-year risk premiums are as follows:

Year	A-Rated Bonds[63]	Avg ROE	Risk Premiums
2012	4.52%	10.02%	4.98-5.89%
2013	4.21%	9.82%	5.34-5.74%
2014	4.48%	9.76%	5.17-5.48%
2015	4.10%	9.60%	5.32-5.60%
2016	4.10%	9.60%	5.36-5.67%
2017	3.98%	9.68%	5.63-5.75%
2018	4.06%	9.56%	5.31-5.60%
2019	4.12%	9.65%	5.34-5.88%
2020	3.36%	9.39%	5.62-6.37%
2021	3.04%	9.39%	6.28-6.41%
2022	3.75%	9.52%	4.80-6.41%
2012-2022 11-Year Avg.	3.97%	9.64%	5.62-5.68%
2012-2019 8-Year Avg.	4.19%	9.71%	5.43-5.59%

[63] Average annual yields of all "lag" time periods.

I conclude that a reasonable risk premium estimate for electric utilities is a range of 5.43 percent to 5.59 percent, over the corresponding level (i.e., 3.98 percent to 4.52 percent) of single-A utility bond yields. This includes the range of interest rates and risk premiums over the 2012–2019 time period.

Q. Is this range the appropriate risk premium range to use at the current time?

A. No, it is not appropriate to use the 5.43 percent to 5.59 percent risk premium range in connection with current levels of interest rates for the purpose of estimating a RP ROE estimate. As noted above, the risk premium range of 5.43 percent to 5.59 percent was derived during a period in which yields on A-rated utility bonds were 3.98 percent to 4.52 percent. Current yields on A-rated utility bonds are about 5.4 percent, or 86 to 140 basis points higher.

It is recognized that risk premiums are not constant over time but vary inversely with levels of interest rates (i.e., as interest rates increase, risk premiums decline, and vice versa). I note, in this regard that Company witness Bulkley cites this inverse relationship in her RP analyses.[64] Company witness Bulkley's testimony also concludes that the inverse relationship between interest rates and risk premiums reflects approximately a 56 basis point change in the risk premium associated with a 100 basis point change in interest rates.[65] In my RP analyses, I accept Company witness Bulkley's assumption of this relationship between risk premium of interest rate changes. In doing

[64] Bulkley, Exh. AEB-1T at 44:3-5.
[65] Note that Company witness Bulkley's RP analyses conclude that the negative relationship between interest rates and risk premiums is about .563 percent (Exh. AEB-10 at 3).

so, I am attempting to minimize the relative differences between our respective RP approaches.[66]

Page 1 of Exh. DCP-15 shows the steps in my RP analysis. This indicates a RP conclusion of 10.02 percent to 10.49 percent, which incorporates the following inputs:

1. 2012-2019 risk premium range;
2. Current level of A utility bond yield;
3. Interest rate range of A utility bonds for 2012-2019;
4. Relationship between interest rates and bond yields;
5. Required change in risk premium for differential in current and past interest rate;
6. Risk premium.

Q. What is the appropriate RP return on equity at the present time?

A. Combining the current 5.38 percent Single-A bond yield with a risk premium of 4.64 percent to 5.11 percent, the resulting risk premium derived ROE is currently within a range of 10.02 percent to 10.49 percent. I thus conclude that the RP result for PacifiCorp's ROE range is a range of 10.0 percent to 10.5 percent (10.25 percent mid-point).

[66] This assumes that this portion of the relationship (i.e., slope of regression line) is the same whether U.S. Treasury bonds or utility bonds is used for measurement.

XII. RETURN ON EQUITY RECOMMENDATION

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

A. My four ROE analyses produced the following results:

	Mid-Point	Range
DCF	9.75%	9.6-9.9%
CAPM	9.75%	9.7-9.8%
CE	9.25%	9.0-9.5%
RP	10.25%	10.0-10.5%
Average	9.75%	9.75%
Median	9.75%	9.75%

These results indicate an overall broad range of 9.0 percent to 10.5 percent, which focuses on the respective high and low individual model results. Using mid-point values, the range is 9.25 percent to 10.25 percent. I note that the RP results are an "outlier" in comparison to the other three models. I recommend a ROE range of 9.5 percent to 10.0 percent for PacifiCorp at this time, which gives consideration to the results of each of the four methodologies. Within this ROE range recommendation, I recommend a 9.5 percent ROE for PacifiCorp, which is the bottom of my recommended range. This is appropriate due to the risk-reducing attributes of the MYRP aspects of SB 5295, as well as the Commission's practice of employing gradualism in changing ROEs for utilities.

Q. How does your proposed 9.50 percent ROE and 49.1 percent common equity ratio compare to the ROEs and common equity ratios approved by the Commission for Avista and PSE in their respective MYRPs?

A. The table below indicates the ROEs and common equity ratios approved in the initial MYRPs for Avista and PSE, along with their respective previously approved levels.

	Avista		Puget Sound Energy	
	MYRP [67]	Previous [68]	MYRP [69]	Previous [70]
ROE	9.4%	9.4%	9.4%	9.4%
Equity Ratio	48.5%	48.5%	49.0%	48.5%

I note that my recommendation for PacifiCorp in the current MYRP proceeding very closely mirrors the ROEs and common equity ratios approved by the Commission in the initial MYRP cases for Avista and PSE.

Q. Is there any additional factors that should be considered in determining the appropriate ROE for PacifiCorp in this proceeding?

A. Yes, there are. First, as I noted previously, the positive impacts of SB 5295 are now more clearly in focus and have the effect of reducing the risk of PacifiCorp.

In addition, this Commission has consistently applied a principle of gradualism in setting the ROEs for the utilities in the State. The Commission has stated:[71]

> "When considering changes to a regulated utility's authorized ROE, we endeavor to avoid material adjustments, upward or downward, in authorized levels to

[67] *Wash. Utils. & Transp. Comm'n v. Avista Corp.*, Dockets UE-220053 & UG-220054, Order 10/04, 56, ¶ 156 (Dec. 12, 2022). Note that the 9.4% ROE and 48.5% equity ratio were implicit figures that underlie the 7.03% COC.
[68] *Wash. Utils. & Trans. Comm's v. Avista Corp.*, Dockets UE-200900, UG-200901 & UE-200894, Final Order 08/05, 2 (Sept. 27, 2021).
[69] *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy Inc.*, Dockets UE-220066 & UG-220067, Order 24/10, 35, ¶ 113; 43, ¶ 147 (Dec. 22, 2022).
[70] *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy Inc.*, Dockets UE-190529, et al., Final Order 24, 2 (July 8, 2020).
[71] *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy Inc.*, Dockets UE-190529 et al., Final Order 08. 35, ¶ 105 (July 8, 2020).

> provide stability and assurance to investors and others regarding the regulatory environment supporting the financial integrity of the utility. Based on the evidence produced by the various expert witnesses, we generally determine whether modest increases, if any, to currently authorized levels are appropriate given the evidence produced in the immediate proceeding."[72]

I also note that gradualism was cited in the Commission's Decision in the last litigated PacifiCorp litigated rate proceeding.[73]

Based on these factors, I believe my 9.5 percent ROE recommendation, which is 0.10 percent higher than PacifiCorp's currently authorized 9.4 percent, is reasonable and appropriate.

XIII. TOTAL COST OF CAPITAL

Q. What is the total COC for PacifiCorp?

A. Exh. DCP-3 reflects the total COC for PacifiCorp using the Company's 2024 and 2025 capital structures and embedded costs of debt, as well as my ROE recommendations. The resulting December 31, 2024 COC is 7.09 percent (*i.e.*, 9.5 percent ROE).

XIV. COMMENTS ON COMPANY TESTIMONY

Q. What ROE is PacifiCorp requesting in this proceeding?

A. PacifiCorp is requesting a 10.30 percent ROE. This 10.30 percent ROE is sponsored by PacifiCorp's COC witness Bulkley.[74]

[72] *Wash. Utils. & Trans. Comm'n v. Avista Corp.*, Dockets UE-170485, UG-170486, UE-171221 & UG-171222, Order 07/02/02, 28, ¶ 68 (Apr. 26, 2018).
[73] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-152253, Order 12, 55, ¶ 158 (Sept. 1, 2016).
[74] Bulkley, Exh. AEB-1T at 3:11-17.

Q. What are your disagreements with Company witness Bulkley's ROE methodologies and recommendations?

A. Previous sections of my testimony address Company witness Bulkley's DCF, CAPM, and RP analyses. As I indicate, two of these methodologies exceed the actual required ROE for PacifiCorp.

Q. On pages 47-68 of Exh. AEB-1T, Company witness Bulkley cites "several additional business and financial risk factors that must be taken into consideration when determining where PacifiCorp's cost of equity falls within the range of results produced by the proxy group."[75] Do you have any responses to this assertion?

A. Yes, I do. Company witness Bulkley has identified several "factors" and maintain these factors create more risk for PacifiCorp relative to the proxy utilities. These include:

1. Capital Expenditures;

2. Regulatory Risk; and,
   a. Cost Recovery Mechanisms;
   b. Authorized ROEs; and,
   c. Generation Ownership.

However, each of these factors is considered by the rating agencies in their assignment of credit ratings to PacifiCorp, thus Company witness Bulkley's consideration of these factors is redundant. PacifiCorp has higher debt credit ratings, reflecting less risk, compared to the typical electric utility, including Company witness. Bulkley's proxy group as is shown on my Exh. DCP-8. Stated differently, PacifiCorp is perceived to have lower total risks than the typical electric utility, including Company

[75] *Id.*, at 47-68.

witness Bulkley's proxy group, in spite of the existence of Company witness Bulkley's risk "factors." The risk "factors" are already "baked into the cake." Consequently, there is no justification for providing PacifiCorp a higher return on equity relative to that of other similar electric utilities.

Q. Does this conclude your testimony?

A. Yes, it does.