Exh. AEB-1T
Docket UE-19____
Witness: Ann E. Bulkley

**BEFORE THE WASHINGTON**

**UTILITIES AND TRANSPORTATION COMMISSION**

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| WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,<br><br>Complainant,<br><br>v.<br><br>PACIFICORP dba PACIFIC POWER & LIGHT COMPANY<br><br>Respondent. | Docket UE-19____ |

# PACIFICORP

# DIRECT TESTIMONY OF ANN E. BULKLEY

**December 2019**

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## ATTACHED EXHIBITS

## I. INTRODUCTION AND QUALIFICATIONS

**Q. Please state your name and business address.**

A. My name is Ann E. Bulkley. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

**Q. What is your position with Concentric Energy Advisors, Inc. (Concentric)?**

A. I am employed by Concentric as a Senior Vice President.

**Q. On whose behalf are you submitting this direct testimony?**

A. I am submitting this direct testimony before the Washington Utilities and Transportation Commission (Commission) on behalf of PacifiCorp dba Pacific Power & Light Company (PacifiCorp or the Company).

**Q. Please describe your education and professional experience.**

A. I hold a Bachelor of Arts degree in Economics and Finance from Simmons College and a Master of Arts degree in Economics from Boston University, with more than 20 years of experience consulting to the energy industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. I have included my resume and a summary of testimony that I have filed in other proceedings as Exhibit Nos. AEB-2 and AEB-3 to this testimony.

**Q. Have you previously testified before the Commission or other regulatory authorities?**

A. Yes. A list of proceedings in which I have provided testimony is provided in Exhibit No. AEB-3 to this testimony.

## II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY

**Q. What is the purpose of your direct testimony?**

A. The purpose of my direct testimony is to present evidence and provide a recommendation regarding the appropriate Return on Equity (ROE) for PacifiCorp's electric utility operations in Washington, and to provide an assessment of its proposed capital structure to be used for ratemaking purposes.[1] My analyses and recommendations are supported by the data presented in Exhibit Nos. AEB-4 through AEB-14, which were prepared by me or under my direction.

**Q. Please provide a brief overview of the analyses that led to your ROE recommendation.**

A. As discussed in more detail in Section VII, I applied the Constant Growth and Projected forms of the Discounted Cash Flow (DCF) model, the Capital Asset Pricing Model (CAPM), the Risk Premium Approach, and the Expected Earnings Analysis. My recommendation also takes into consideration: (1) PacifiCorp's capital expenditure requirements; (2) the regulatory environment in which PacifiCorp operates; (3) PacifiCorp's plan to invest significantly in renewable generation over the near- and long-term; and (4) the effects of Federal tax reform on the cash flow metrics of utilities. Finally, I considered PacifiCorp's proposed capital structure as compared to the capital structures of the proxy companies.[2] While I did not make any specific adjustments to my ROE estimates for any of these factors, I did consider

[1] Throughout my direct testimony, I interchangeably use the terms "ROE" and "cost of equity".
[2] The selection and purpose of developing a group of comparable companies will be discussed in detail in Section VI of my direct testimony.

them in aggregate when determining where PacifiCorp's ROE falls within the range of analytical results.

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

A. Section III provides a summary of my analyses and conclusions. Section IV reviews the regulatory guidelines pertinent to the development of the cost of capital. Section V discusses current and projected capital market conditions and the effect of those conditions on PacifiCorp's cost of equity in Washington. Section VI explains my selection of a proxy group of electric utilities. Section VII describes my analyses and the analytical basis for the recommendation of the appropriate ROE for PacifiCorp. Section VIII discusses specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for PacifiCorp in this case. Section IX assesses the proposed capital structure of PacifiCorp as compared with the capital structures of the utility operating subsidiaries of the proxy group companies. Section X presents my conclusions and recommendations for the market cost of equity.

## III. SUMMARY OF ANALYSES AND CONCLUSIONS

**Q. What is your recommended ROE for PacifiCorp?**

A. Based on the analytical results presented in Figure 1 below, and considering the level of regulatory, business, and financial risk faced by PacifiCorp's electric operations in Washington relative to the proxy group, I believe a range from 9.75 to 10.25 percent is reasonable. This recommendation reflects the range of results for the proxy group companies, the relative risk of PacifiCorp's electric operations in Washington as compared to the proxy group, and current capital market conditions. Within that range, a return of 10.20 percent is reasonable.

**Q. Please summarize the key factors considered in your analyses and upon which you base your recommended ROE.**

A. In developing my recommended ROE for PacifiCorp, I considered the following:

- The *Hope* and *Bluefield* decisions that established the standards for determining a fair and reasonable allowed ROE, including consistency of the allowed return with other businesses having similar risk, adequacy of the return to provide access to capital and support credit quality, and that result must lead to just and reasonable rates.[3]
- The effect of current and projected capital market conditions on investors' return requirements.
- The results of several analytical approaches that provide a range of estimates of the cost of equity for PacifiCorp.
- PacifiCorp's regulatory, business, and financial risks relative to the proxy group of comparable companies and the implications of those risks.

**Q. Please explain how you considered those factors.**

A. I relied on several analytical approaches to estimate PacifiCorp's cost of equity based on a proxy group of publicly traded companies. As shown in Figure 1, those ROE estimation models produce a wide range of results. My conclusion about where within that range of results PacifiCorp's ROE falls is based on PacifiCorp's business and financial risk relative to the proxy group. Although the companies in my proxy group are generally comparable to PacifiCorp, each company is unique, and no two companies have the exact business and financial risk profiles. Accordingly, I selected

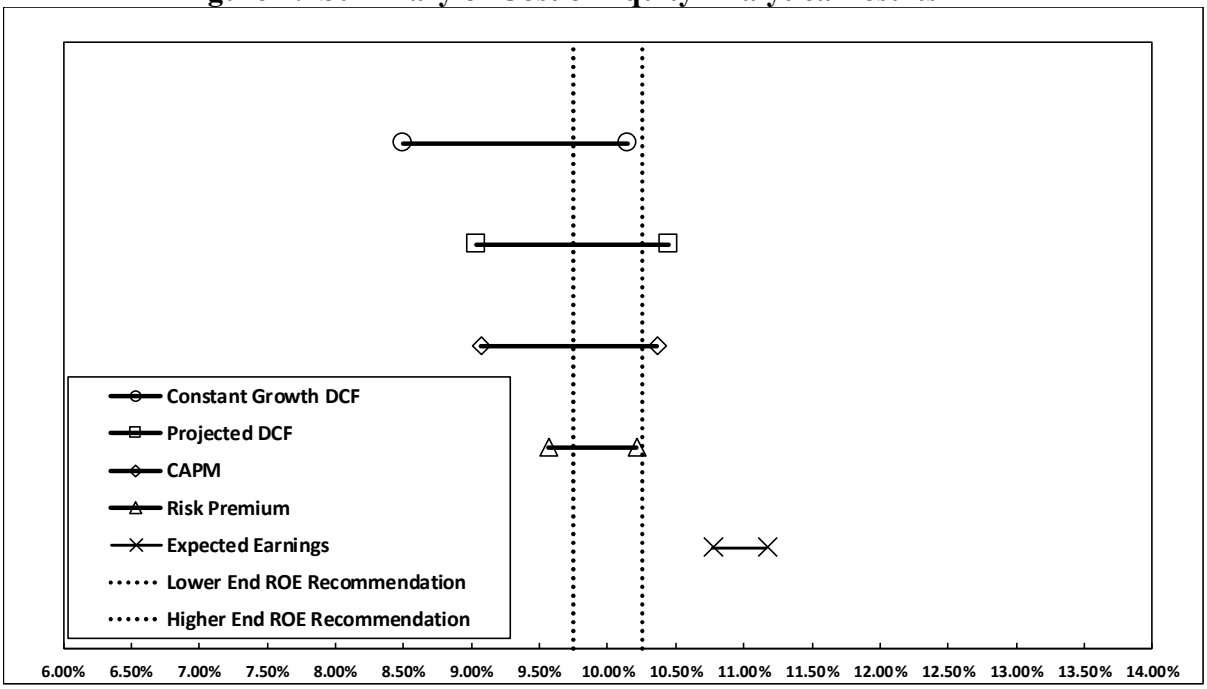
[3] *See Fed. Power Comm'n v. Hope Natural Gas Co.,* 320 U.S. 591 (1944); *Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm'n of W. Va*, 262 U.S. 679 (1923).

a proxy group with similar, but not the same risk profiles; and I adjusted the results of my analysis either upwards or downwards within the reasonable range of results to account for any residual differences in risk.

**Q. Please summarize the results of the ROE estimation models that you considered to establish the range of ROEs for PacifiCorp.**

A. Figure 1 summarizes the range of results produced by the Constant Growth DCF, Projected DCF, CAPM, Risk Premium, and Expected Earnings analyses.

**Figure 1: Summary of Cost of Equity Analytical results[4]**




As shown on Figure 1 (and in Exhibit No. AEB-6), the range of the Constant Growth DCF model results is wide, particularly relative to the results of the other methodologies. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results is wide.

[4] The analytical results reflect the results of the Constant Growth and Projected DCF analyses excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent.

Furthermore, as shown in Exhibit No. AEB-6, the mean low Constant Growth DCF results (before exclusions for outliers) for the proxy group, range from 7.53 to 7.72 percent for the 30-, 90-, and 180-day assumption.[5] Thus, the Constant Growth DCF results are below any authorized ROE for an electric utility or natural gas utility in the U.S. since at least 1980.[6] Therefore, I conclude that the mean low DCF results do not provide a sufficient risk premium to compensate equity investors for the residual risks of ownership, including the risk that they have the lowest claim on the assets and income of PacifiCorp.

As a result, my ROE recommendation considers the mean and mean-high results of the DCF model, a forward-looking CAPM analysis, a Bond Yield plus Risk Premium analysis, and an Expected Earnings analysis. I also consider company-specific risk factors and current and prospective capital market conditions.

**Q. Please summarize the analysis you conducted in determining that PacifiCorp's requested capital structure is reasonable and appropriate.**

A. Based on the analysis presented in Section IX of my testimony, I conclude that PacifiCorp's proposed 52.55 percent common equity is reasonable. To make this determination, I reviewed the capital structures of the utility subsidiaries of the proxy companies. As shown in Exhibit No. AEB-13, the results of that analysis demonstrate that the average equity ratios for the utility operating companies of the proxy group range from 39.98 percent to 61.54 percent with an average of 52.82 percent. As discussed in the direct testimony of Ms. Nikki L. Kobliha, PacifiCorp's proposed

[5] My DCF models generated a mean low, mean, and mean high result. The mean low result is the mean of the proxy group DCF results calculated using the lowest earnings growth rate for each company from Value Line, Yahoo! Finance or Zacks.

[6] Source: Regulatory Research Associates, Rate Case History, January 1, 1980 – January 31, 2019.

equity ratio of 52.55 percent is its' projected actual five-quarter average equity ratio as of December 2020. Comparing this level to the proxy group demonstrates that it closely approximates the average equity ratio for the utility operating subsidiaries of the proxy group companies and is well below the high-end of the proxy group range. Moreover, PacifiCorp's proposed equity ratio is reasonable considering that federal tax reform legislation has had a negative effect on the cash flows and credit metrics of regulated utilities.

Furthermore, a fundamental aspect of the financial regulation of utilities is ensuring that the subject utility has a reasonable opportunity to earn a return on capital consistent with the return available on investments of similar risk. While this principle is most often discussed in terms of the allowed ROE, it is equally applicable to all aspects of overall Rate of Return (ROR). The equity return, the product of the ROE and the equity ratio, (*i.e.*, the Weighted Return on Equity (WROE)), ultimately defines the return to shareholders and the product of the cost of debt and the debt ratio ensures that a company's debt obligations are met. Therefore, it is necessary to consider both the rates that are applied to debt and equity and the composition of the capital structure to determine the reasonableness of the ROR. Taken together, PacifiCorp's proposed common equity ratio of 52.55 percent and its requested ROE of 10.20 percent, results in a WROE of 5.36 percent. This reasonably balances the interests of customers and shareholders by enabling PacifiCorp to maintain its financial integrity and therefore its ability to attract capital at reasonable terms and conditions under a variety of economic and financial market conditions.

## IV. REGULATORY GUIDELINES

**Q. Please describe the guiding principles used in establishing the cost of capital for a regulated utility.**

A. The United States Supreme Court's precedent-setting *Hope* and *Bluefield* cases established the standards for determining the fairness or reasonableness of a utility's allowed ROE. Among the standards established by the Court in those cases are: (1) consistency with other businesses having similar or comparable risks; (2) adequacy of the return to support credit quality and access to capital; and (3) that the result, as opposed to the methodology employed, is the controlling factor in arriving at just and reasonable rates.[7]

**Q. Has the Commission provided similar guidance in establishing the appropriate return on common equity?**

A. Yes, it has. In dockets UE-121697 *et al.*, Puget Sound Energy's 2013 expedited rate filing, the Commission stated that:

> [T]he authorized return should be sufficient: (1) to maintain financial integrity; (2) to attract capital under reasonable terms; and (3) to provide returns commensurate with those investors could earn by investing in other enterprises of comparable risk. [8]

Further, in dockets UE-170485 and UG-170486, Avista Corporation's (Avista) 2017 rate case, the Commission stated that:

> The Commission's final determination of an acceptable ROE recognizes fully the guiding principles of regulatory ratemaking that require us to reach an end result that yields fair, just, reasonable, and sufficient rates.[9]

[7] *Hope,* 320 U.S. 591 (1944); *Bluefield*, 262 U.S. 679 (1923).
[8] *WUTC v. Puget Sound Energy*, Docket No. UE-121697, Order 14, ¶ 38 (June 29, 2015).
[9] *WUTC v. Avista Corp.*, Docket No. UE-170485, Order 07, ¶ 59 (April 26, 2018) (hereinafter "Avista Order 07").

This guidance is in accordance with the *Hope* and *Bluefield* decisions and the principles that I employed to estimate the ROE for PacifiCorp, including the principle that an allowed rate of return must be sufficient to enable regulated companies like PacifiCorp to attract capital on reasonable terms.

**Q. Why is it important for a utility to be allowed the opportunity to earn an ROE that is adequate to attract capital at reasonable terms?**

A. An ROE that is adequate to attract capital at reasonable terms enables a utility to continue to provide safe, reliable service while maintaining its financial integrity. To the extent the utility is provided the opportunity to earn its market-based cost of capital, neither customers nor shareholders are disadvantaged.

**Q. Is a utility's ability to attract capital also affected by the ROEs that are authorized for other utilities?**

A. Yes. Utilities compete directly for capital with other investments of similar risk, which include other natural gas and electric utilities. Therefore, the ROE awarded to a utility sends an important signal to investors regarding the level of regulatory support for financial integrity, dividends, growth, and fair compensation for business and financial risk. The cost of capital represents an opportunity cost to investors. If higher returns are available for other investments of comparable risk, investors have an incentive to direct their capital to those investments. Thus, an authorized ROE significantly below authorized ROEs for other natural gas and electric utilities can inhibit PacifiCorp's ability to attract capital for investment.

**Q. What are your conclusions regarding regulatory guidelines?**

A. The ratemaking process is premised on the principle that, for investors and companies

to commit the capital needed to provide safe and reliable utility services, a utility must have the opportunity to recover the return of, and the market-required return on, its invested capital. Because utility operations are capital-intensive, regulatory decisions should enable the utility to attract capital at reasonable terms under a variety of economic and financial market conditions; doing so balances the long-term interests of the utility and its customers.

The financial community carefully monitors the current and expected financial condition of utility companies, and the regulatory framework in which they operate. In that respect, the regulatory framework is one of the most important factors in both debt and equity investors' assessments of risk. The Commission's order in this proceeding, therefore, should establish rates that provide PacifiCorp with the opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable terms under a variety of economic and financial market conditions; (2) sufficient to ensure good financial management and firm integrity; and (3) commensurate with returns on investments in enterprises with similar risk. To the extent PacifiCorp is authorized to earn its market-based cost of capital, the proper balance is achieved between customers' and shareholders' interests.

## V. CAPITAL MARKET CONDITIONS

**Q. Why is it important to analyze capital market conditions?**

A. ROE estimation models rely on market data that are either specific to the proxy group, in the case of the DCF model, or to the expectations of market risk, in the case of the CAPM. The results of ROE estimation models can be affected by prevailing market conditions at the time the analysis is performed. While the ROE established

in a rate proceeding is intended to be forward-looking, analysts use current and projected market data, specifically stock prices, dividends, growth rates and interest rates in ROE estimation models to estimate the required return for the subject company.

As discussed in the remainder of this section, analysts and regulatory commissions have concluded that current market conditions affect the results of ROE estimation models. As a result, it is important to consider the effect of these conditions on ROE estimation models when determining the appropriate range and recommended ROE for a future period. If investors do not expect current market conditions to be sustained in the future, it is possible that ROE estimation models will not provide an accurate estimate of investors' required return during that rate period. Therefore, it is very important to consider projected market data to estimate the return for that forward-looking period.

**Q. What factors are affecting the cost of equity for regulated utilities in the current and prospective capital markets?**

A. The cost of equity for regulated utility companies is being affected by several factors in the current and prospective capital markets, including: (1) valuations of utility stocks that are at historically high levels, which has an inverse relationship to dividend yields; (2) recent market uncertainty, its current effect on interest rates, and long-term expectations for interest rates; and (3) recent Federal tax reform. In this section, I discuss each of these factors and how it affects the models used to estimate the cost of equity for regulated utilities.

**The Effect of Market Conditions on Valuations**

**Q. How has the Federal Reserve's monetary policy affected capital markets in recent years?**

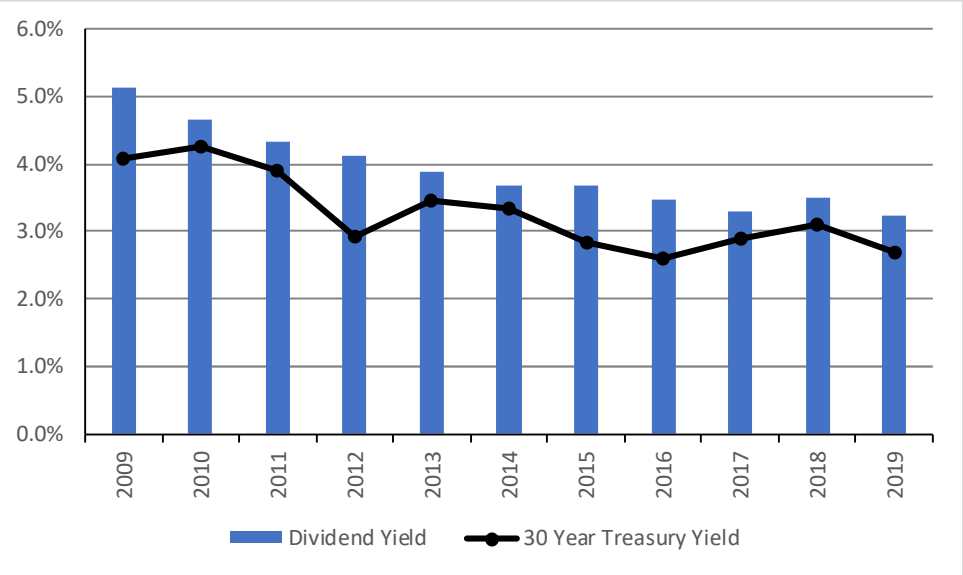
A. Extraordinary and persistent federal intervention in capital markets artificially lowered government bond yields after the Great Recession of 2008-2009, as the Federal Open Market Committee (FOMC) used monetary policy (both reductions in short-term interest rates and purchases of Treasury bonds and mortgage-backed securities) to stimulate the U.S. economy. As a result of very low or zero returns on short-term government bonds, yield-seeking investors have been forced into longer-term instruments, bidding up prices and reducing yields on those investments. As investors have moved along the risk spectrum in search of yields that meet their return requirements, there has been increased demand for dividend-paying equities, such as natural gas and electric utility stocks.

**Q. How has the period of abnormally low interest rates affected the valuations and dividend yields of utility shares?**

A. The Federal Reserve's accommodative monetary policy has caused investors to seek alternatives to the historically low interest rates available on Treasury bonds. A result of this search for higher yield is that share prices for many common stocks, especially dividend-paying stocks such as utilities, have been driven higher while the dividend yields (which are computed by dividing the dividend payment by the stock price) have decreased to levels well below the historical average. As shown in Figure 2, from 2009 through 2019, since the Federal Reserve intervened to stabilize financial markets and support the economic recovery after the Great Recession of 2008-2009,

Treasury bond yields and utility dividend yields declined. Specifically, Treasury bond yields declined by approximately 138 basis points, and electric utility dividend yields have decreased by about 191 basis points over this same period.

**Figure 2: Dividend Yields for Electric Utility Stocks[10]**




**Q. How have higher stock valuations and lower dividend yields for utility companies affected the results of the DCF model?**

A. During periods of general economic and capital market stability, the DCF model may adequately reflect market conditions and investor expectations. However, in the current market environment, the DCF model results are distorted by the historically low level of interest rates and the higher valuation of utility stocks. Value Line recently commented on the high valuations of electric utilities:

> Most electric utility stocks have turned in outstanding performances in 2019. The price of almost every issue in this Industry has risen more than 10 percent, and several increases have exceeded 30 percent. Interest-rate cuts by the Federal Reserve (and the possibility of additional easing) have increased investors' interest in these equities thanks to their generous dividends. This "reaching for yield" has sent these stocks to lofty valuations. Almost every utility equity covered in

[10] Source: Bloomberg Professional. Includes 2019 data through September 30, 2019.

> Issue 11 is trading at a market premium. The average dividend yield for the Electric Utility Industry is 3.1 percent. This figure is still comfortably above the median of all dividend-paying issues covered in *The Value Line Investment Survey*, which is 2.2 percent, but the gap has narrowed considerably this year.
>
> We advise investors to take a cautious stance due to the group's high valuation. The 18-month Target Price Ranges shown on the full-page reports for each stock do not reflect dividends, but even when dividends are added to these estimates, they do not suggest attractive total returns for this time frame. We do provide total return projections for the 3- to 5-year period. These are not appealing, either. In fact, the recent quotations for most of these stocks are within their 2022-2024 Target Price Range, and in some cases (such as IDACORP), the price is above this range.[11]

This is further supported by a recent Edward Jones report on the utility sector:

> Utility valuations have climbed back to record levels as 10-year Treasury bond rates have fallen back below 2%. On a price-to-earnings basis, [utility valuations] remain significantly above their historical average, and have been trading near all-time highs. We have seen utility valuations moving in line with interest rate movements, although there have been exceptions to this. Overall, however, we believe the low-interest-rate environment has been the biggest factor in pushing utilities higher since many investors buy them for their dividend yield.
>
> Utilities recently hit new all-time highs, and are still trading significantly above their average price-to-earnings ratio over the past decade. The premium valuation continues to reflect not only the low interest rate environment, but also the stable and predominantly regulated earnings growth we foresee.[12]

As noted by Value Line and Edward Jones, over the last few years, utility stocks have experienced high valuations and low dividend yields driven by investors moving into dividend-paying stocks from bonds due to the low interest rates in the bond market. Conversely, if interest rates increase, bonds become a substitute for utility stocks, which results in an increase in dividend yields. As noted in the next

[11] ELECTRIC UTILITY (WEST) INDUSTRY, *Value Line Investment Survey* at 2214 (October 25, 2019).
[12] Andy Smith. EDWARD JONES, *Utilities Sector Outlook* at 2 (October 18, 2019) (Reference to figure omitted).

section of my testimony, this change in market conditions is expected and implies that the ROE calculated using historical market data in the DCF model may understate the forward-looking cost of equity.

Furthermore, recently, Bank of America Merrill Lynch commented on the risks of underperformance for certain utilities based on concerns about the valuation of the sector, in particular the concern that the current premium on share prices may be largely unwarranted.[13]

**Q. What is the effect of high valuations on utility stocks on the DCF model?**

A. High valuations have the effect of depressing the dividend yields, which results in overall lower estimates of the cost of equity resulting from the DCF model.

**Q. How do current valuations of public utilities compare to the historical average?**

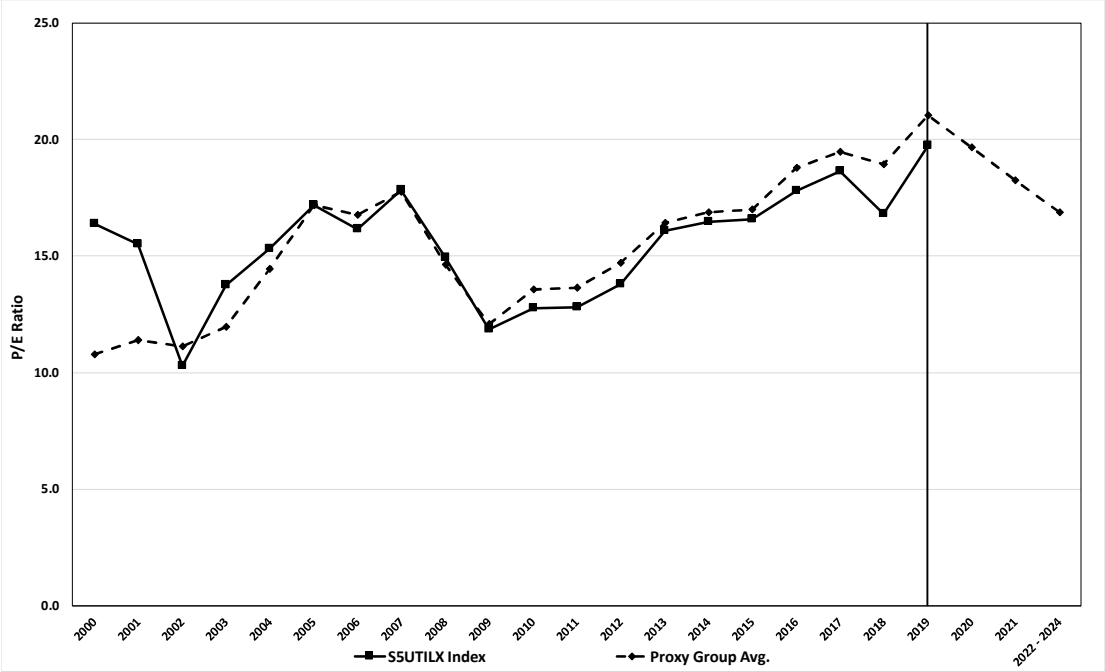
A. Figure 3 summarizes the average historical and projected Price-to-Earnings (P/E) ratios for the proxy companies calculated using data from Bloomberg Professional and Value Line.[14] As shown in Figure 3, the average P/E ratio for the proxy companies increased from 2018 to 2019 as a result of uncertainty in markets surrounding the trade dispute between the U.S. and China. The uncertainty has resulted in investors shifting to defensive sectors such as utilities and consumer staples. This has driven the prices of utility stocks and thus the P/E ratios to unsustainable levels. Currently, the P/E ratio for the proxy companies is 21.04 for 2019, which is well above the average for the period of 2000-2019 of 15.36. It is not reasonable to expect the proxy companies to maintain P/E ratios that are well above

[13] BofAML, American Water Works AWKward valuation: Downgrading premium utility to underperform, July 15, 2019. BofAML, Eversource Energy, Reiterating our Underperform: Shares pricey relative to few updates, July 15, 2019.

[14] Selection of the Proxy Companies is discussed in detail in Section VI of my direct testimony.

long-term averages. As shown in Figure 3, Value Line is projecting that P/E ratios will decline over the period of 2019 through 2022. All else equal, if P/E ratios for the proxy companies decline, as Value Line projects, the ROE results from the DCF model would be higher. Therefore, the DCF model using historical market data is likely understating the forward-looking cost of equity for the proxy group companies.

**Figure 3: Average Historical Proxy Group P/E Ratios[15]**




**Q. Have you reviewed any other market indicators that compare the current valuation of utilities to the historical average?**

A. Yes. To further assess how the current low interest rate environment has affected the valuations of the companies in my proxy group, I reviewed the price/earnings to growth (PEG) ratio for the Standard & Poor's (S&P) Utilities Index. The PEG ratio is commonly used by investors to determine if a company is considered over- or under-valued. The ratio compares the P/E ratio of a company to the expected growth

[15] Bloomberg Professional, Data through September 30, 2019, and Value Line Investment Survey, July 26, 2019, August 16, 2019, and September 13, 2019.

rate of future earnings. This allows investors to compare companies with similar P/E ratios but different earnings growth projections. If two companies have a P/E ratio of 20, but company A is growing at a rate of 6 percent and company B is growing at a rate of 15 percent, then on a relative valuation basis company B is the better investment.

As shown Exhibit No. AEB-14, which is a report published by Yardeni Research, Inc., the PEG ratio for the S&P Utilities Index is significantly higher than it has historically been because of the accommodative monetary policy pursued by the Federal Reserve following the Great Recession of 2008-2009.[16] While the PEG ratio has declined in recent years due to the Federal Reserve's shift to normalize monetary policy, the PEG ratio for the S&P Utilities Index is still above the historical average. In general, stocks with lower long-term PEG ratios are considered better values. As the PEG ratio increases above the long-term historical average, as has been the case with the S&P Utilities Index, then the stocks are considered relatively over-valued unless the growth rate increases to support the higher valuation. As of October 2019, the PEG ratio for the S&P Utilities Index is close to 4.0, which indicates that many of the stocks contained in the index are currently trading at levels well above the historical average. This analysis supports the P/E Ratio projections produced by Value Line, which as shown above in Figure 3, project the P/E ratios of utilities to decline over the near-term.

[16] YARDENI RESEARCH, INC., *S&P 500 Industry Briefing: Utilities* at 5 (October 24, 2019).

**Q. How do equity investors view the utilities sector based on these recent market conditions?**

A. Investment advisors have suggested that utility stocks may underperform as a result of market conditions. Denise Chisholm, sector strategist at Fidelity Investments, recently commented in an interview with Barron's that the high valuations of defensive sector stocks such as utilities is likely to result in sector rotation (i.e., investor movement away from these sectors back to others). Specifically, Ms. Chisholm explained that:

> Consumer staples, utilities, and health care are the most expensive they've been since 1970, in the top percentile. That data point has been not just informative, but also predictive in history. It's a rare signal that has only really occurred five times. You see a 1,000-basis-point rotation back to the economically sensitive sectors and an average underperformance of the defensive sectors.[17]

**Q. Has the Commission historically considered multiple ROE estimation methodologies?**

A. Yes. It is my understanding that the Commission has supported review of a range of model results in estimating ROE, instead of just relying on results from the DCF model.[18]

**The Current and Expected Interest Rate Environment**

**Q. Please provide a brief summary of the recent monetary policy actions of the Federal Reserve.**

A. At its October 2019 meeting, the Federal Reserve acknowledged the implications of

[17] Leslie P. Norton, *It's time to stop playing defense in Stocks,* Barron's (Oct. 28, 2019) *available at* https://www.barrons.com/articles/its-time-to-stop-playing-defense-in-stocks-51571418847.
[18] Avista, Order 07 (reviewing results of four different methodologies, and setting aside an anomalous DCF result).

global developments on the U.S. economic outlook and therefore lowered the federal funds rate by 25 basis points, which resulted in a range of 1.50 percent to 1.75 percent.[19] The Federal Reserve has reduced the federal funds rate three times in 2019. However, it is important to view the recent Federal Reserve policy decisions in the context of the reactions to the trade dispute between the U.S. and China and longer-term fundamentals. The ongoing trade dispute has affected the global economy and caused a rise in volatility in the financial markets. As a result, the Federal Reserve reacted by reducing the federal funds rate to sustain the current expansion and satisfy the Federal's Reserve's goals of price stability and full employment.

**Q. Please provide additional context for these recent changes in the federal funds rate.**

A. Before the Federal Reserve lowered the federal funds rate in July, September, and October of 2019, the Federal Reserve raised the rate in 25-basis-point increments on four occasions in 2018 based on stronger conditions in employment markets, a relatively stable inflation rate, steady economic growth, and increased household spending. Since December 2015, the Federal Reserve increased interest rates nine times, bringing the federal funds rate to the range of 2.25 percent to 2.50 percent, before the recent three reductions."

**Q. Has the Federal Reserve signaled that it does not plan to further reduce the federal fund rate at this time?**

A. Yes. At the press conference following the October 2019 meeting, Chairman Powell

[19] *Federal Reserve Issues FOMC Statement*, Board of Governors of the Federal Reserve System, (Oct. 30, 2019) *available at* https://www.federalreserve.gov/newsevents/pressreleases/monetary20191030a.htm.

indicated that there would likely not be further changes in federal funds rate. Specifically, Chairman Powell noted:

> The policy adjustments we have made to date will continue to provide significant support for the economy. Since monetary policy operates with a lag, the full effects of these adjustments on economic growth, the job market, and inflation will be realized over time. We see the current stance of monetary policy as likely to remain appropriate as long as incoming information about the economy remains broadly consistent with our outlook of moderate economic growth, a strong labor market, and inflation near our symmetric 2 percent objective. We believe monetary policy is in a good place to achieve these outcomes. Looking ahead, we will be monitoring the effects of our policy actions, along with other information bearing on the outlook, as we assess the appropriate path of the target range for the fed funds rate. Of course, if developments emerge that cause a material reassessment of our outlook, we would respond accordingly. Policy is not on a preset course.[20]

In regard to the risks that prompted the Federal Reserve's decision to reduce the federal funds rate, Chairmen Powell indicated that the Federal Reserve sees an improvement in the principle risks such as trade policy over the next few months:

> So, in terms of risks, what I was referring to there, the principal risks that we've been monitoring have been really slowing global growth and trade policy developments. As well as muted inflation pressure. So, I was really referring there to trade developments. We have that phase one potential agreement with China, which if signed and put into effect could have the effect of reducing trade tensions and producing uncertainty and that would bode well, we think, for business confidence and perhaps activity over time. So, that has the potential for being an improvement in the risk picture. Brexit, I would say as well, it appears.[21]

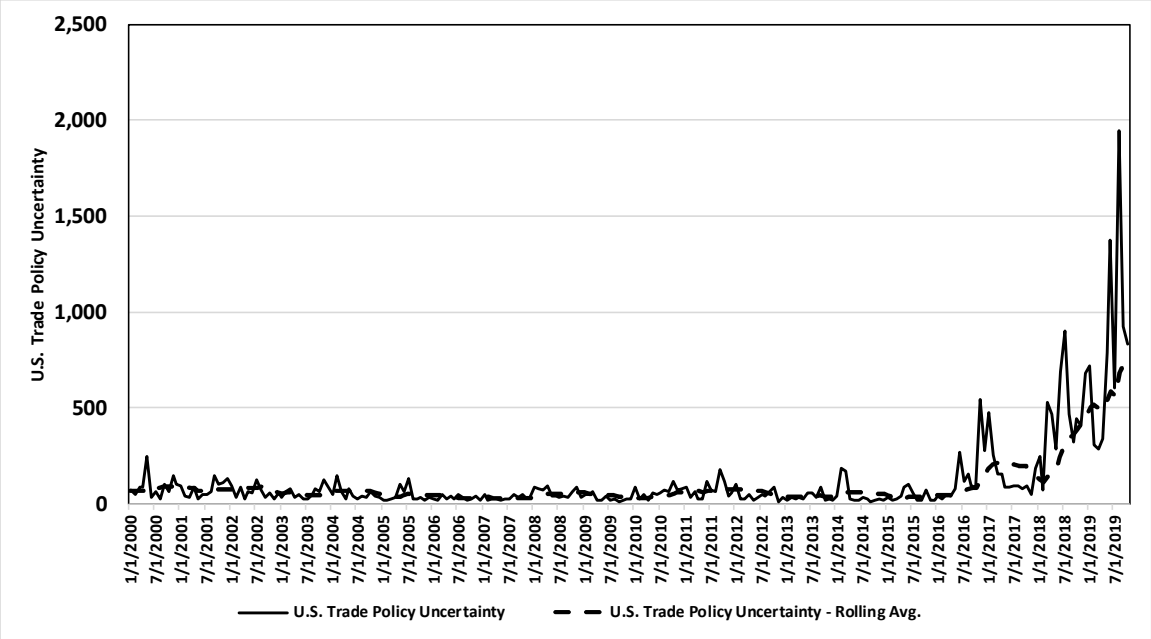
**Q. Have you reviewed any market indicators that measure uncertainty in the market related to U.S. trade policy?**

A. Yes. I reviewed the U.S. trade policy uncertainty index developed by economists

[20] FEDERAL OPEN MARKET COMMITTEE, Transcript of Chairmen Powell's Press Conference at 2-3 (October 30, 2019).
[21] *Id.*

Scott Baker, Nicholas Bloom, and Steven Davis. The index measures the frequency that articles in U.S. publications discuss economic policy uncertainty and reference trade policy.[22] As shown in Figure 4, uncertainty regarding U.S. trade policy is at its highest level since at least 2000, with the largest increase occurring in the last two years as a result of the escalating trade dispute between the U.S. and China.

**Figure 4: U.S. Trade Policy Uncertainty Index**




[22] Source: Economic Policy Uncertainty: https://www.policyuncertainty.com/index.html.

**Q. How have the trade dispute with China and the recent uncertainty in the market affected the yields on long-term government bonds?**

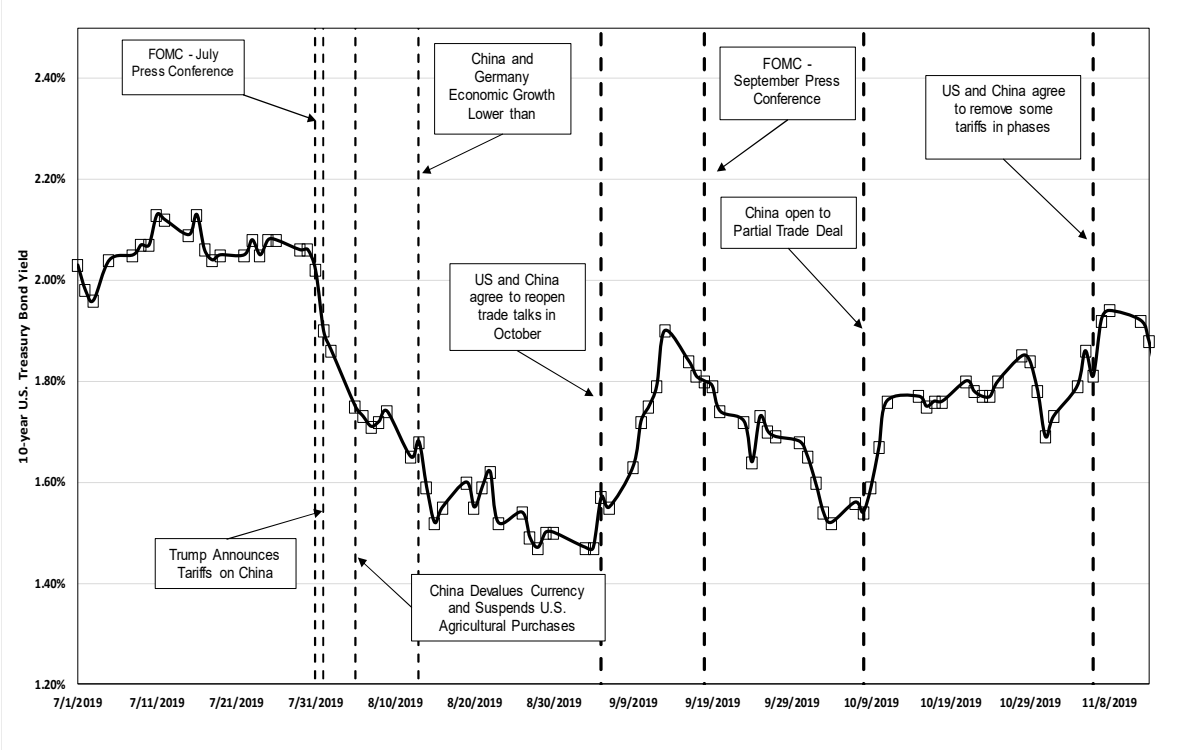
A. The uncertainty surrounding the trade dispute between the U.S. and China has resulted in a flight-to-quality as investors have purchased safer assets such as U.S. Treasuries due to increased fears of a possible recession. This has been increasingly evident over the past few months as investors responded to news of increases in tariffs by both China and the U.S.

To illustrate the recent reactions of investors, I conducted an event study of the yield on the 10-year U.S. Treasury bond between July 1, 2019, and November 15, 2019. As shown in Figure 5, the yield on the 10-year U.S. Treasury Bond was relatively stable for the month of July; however, the yield decreased by approximately 50 basis points from the end of July to the middle of August. The recent decline was due to investors responding to events associated with the trade dispute. For example, the market reacted negatively to Chairmen Powell's comments following the FOMC meeting at the end of July and President Trump's announcement that the U.S. was going to impose tariffs on the remaining set of goods imported from China. The two events accounted for a decrease of approximately 25 basis points in the yield on the 10-year Treasury between July 30, 2019, and August 5, 2019.

Conversely, positive developments in the trade dispute between the U.S. and China have led to increases in the yield on the 10-year Treasury Bond. For example, the yield on the 10-year Treasury Bond increased following news on September 5, 2019, that the U.S. and China would reopen trade discussions in October 2019. Moreover, recent news of a partial trade deal and the removal of some of the tariffs in

phases has the 10-year Treasury Bond yield at 1.84 percent as of November 15, 2019, which is a 37-basis point increase over the recent low in August 2019 of 1.47 percent. The recent volatility in the market as a result of the trade dispute led Bloomberg to note in an article that the volatility in the market on any given day is being determined more and more by the words and actions of Chairman Powell, President Trump, and the President of China, Xi Jinping.[23]

**Figure 5: 10-year U.S. Treasury Bond Yield**




**Q. Is the decline in long-term government bond yields as a result of U.S. trade policy uncertainty indicative of the long-term outlook for the yields on long-term government bonds?**

A. No. While the yields on long-term government bonds have decreased recently, this is

[23] Michael P. Regan, *Powell Speaks, Trump Tweets, China Reacts, Markets Freak. Repeat*, BLOOMBERG, (8 Aug. 2019) *available at* www.bloomberg.com/news/articles/2019-08-08/powell-speaks-trump-tweets-china-reacts-markets-freak-repeat.

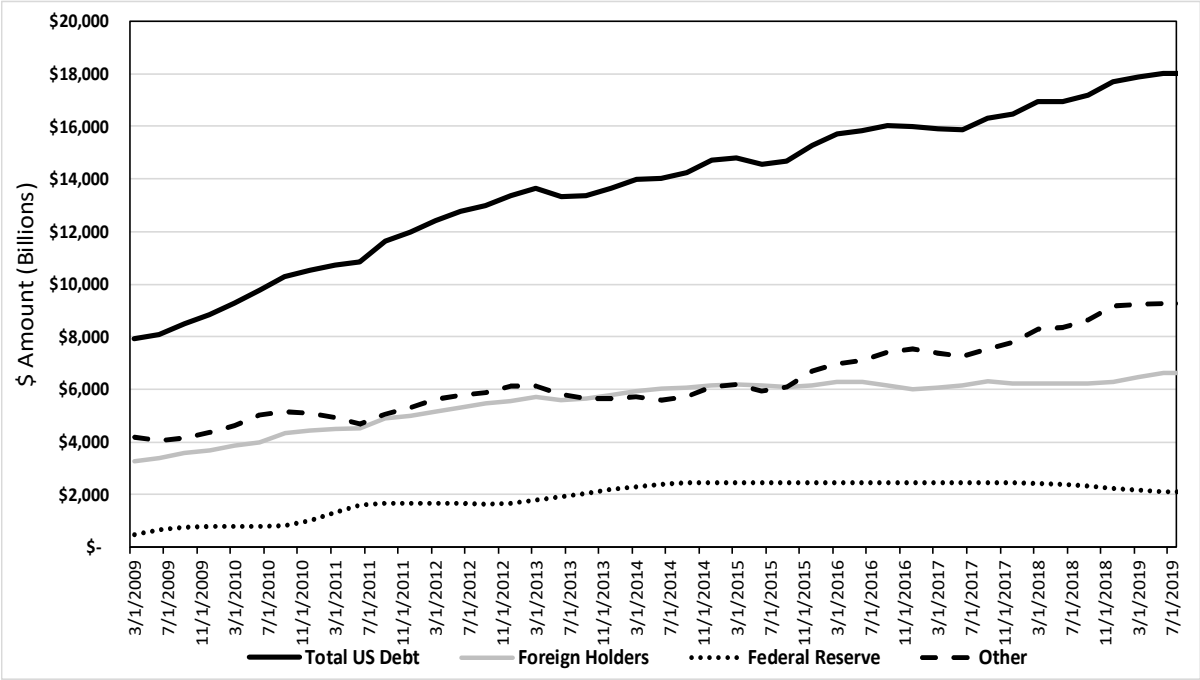
not indicative of a long-term trend. It is more indicative of a shift in the type of investors purchasing the long-term government bonds. As shown in Figure 6, the total amount of debt owned by the Federal Reserve and Foreign Holders has been relatively stable or slightly declining over the past few years, while the demand from private sector investors has been increasing. This is important because private sector investors are more price-sensitive and more likely to respond quickly to changes that occur in the market. This explains the decline in long-term government bond yields in the recent months as investors react to the uncertain economic conditions due to the trade dispute between the U.S. and China. As a result, long-term yields could increase quickly if an agreement is reached between the U.S. and China. For example, Kiplinger recently noted:

> While the trade war lasts, 10-year Treasury note rates are likely to remain 2% or a bit lower. Mortgage rates will stay around the current 3.6% for 30-year fixed, 3.1% for 15-year. If the trade war relents, we expect that 10-year Treasury notes could rise to the mid-to-upper 2% range. The 30-year fixed-rate mortgage would also rise to 4.2%, and the 15-year fixed-rate mortgage to 3.7%.[24]

In fact, as shown in Figure 5, long-term yields have increased between August 2019 and November 2019 in response to positive developments in the trade dispute between the U.S. and China.

[24] David Payne. *Expect Two More Interest-Rate Cuts by the Fed.*, Kiplinger's Personal Finance (12 August 2019).

**Figure 6: Ownership of U.S. Debt – 2009 – 2019[25]**




**Q. What is the financial market's perspective on the future path of long-term government bond yields?**

A. According to the October 2019 issue of Blue Chip Financial Forecasts, the yields on 10- and 30-year Treasury bonds are expected to increase over the near-term of Q4 2019 to Q1 2020.[26] Similarly, strategists at both JP Morgan Chase & Co. and Merrill Lynch are projecting increases in long-term government bond yields over the near-term. Merrill Lynch is projecting that the yield on the 10-year Treasury Bond will increase to 2.00 percent by the end of 2019[27] while strategists at JP Morgan and Chase Co. indicated that yields on the 10-year Treasury Bond could increase up to 100 basis points over the next six months.[28]

[25] Bloomberg Professional, Data through September 30, 2019.
[26] Blue Chip Financial Forecasts, Vol. 38, No. 10 at 2 (October 1, 2019).
[27] MERRILL, CHIEF INVESTMENT OFFICE, *Capital Market Outlook* at 8 (November 18, 2019).
[28] Joanna Ossinger, *JPMorgan Says Treasury Yields to Surge in 1995 Cycle Replay.* BLOOMBERG (Nov. 3 2019) *available at* www.bloomberg.com/news/articles/2019-11-04/jpmorgan-says-treasury-yields-to-surge-in-replay-of-1995-cycle.

**Q. What are your conclusions regarding the current interest rate environment and its effect on the cost of equity for PacifiCorp?**

A. Investors have responded to the recent escalation in the trade war between the U.S. and China by divesting higher-risk assets and purchasing lower-risk assets such as U.S. Treasury bonds. However, the trade dispute between the U.S. and China is not expected to continue over the long-term. In fact, given the increase in price-sensitive investors purchasing U.S. Treasuries bonds, if a trade deal were to be reached, it is likely the yields on long-term government bonds would increase substantially. As interest rates increase, the cost of equity for the proxy companies using the DCF model is likely to be an overly conservative estimate of investors' required returns because the proxy group average dividend yield reflects the increase in stock prices that resulted from substantially lower interest rates. As such, the real prospect of rising interest rates supports the selection of a return well above the mean ROE estimate resulting from the DCF analysis. Alternatively, my CAPM and Bond Yield Plus Risk Premium analyses include estimated returns based on near-term projected interest rates, reflecting investors' expectations of market conditions over the period that the rates established in this proceeding will be in effect.

**Effect of Tax Reform on the ROE and Capital Structure**

**Q. Are there other factors that should be considered in determining the cost of equity for PacifiCorp?**

A. Yes. The effect of the Tax Cuts and Jobs Act (TCJA) should also be considered in the determination of the cost of equity. It is also relevant to setting the equity ratio in the capital structure, which I address in Section IX of my testimony. The credit rating

agencies have commented on the effect of the TCJA on regulated utilities. In summary, the TCJA is expected to reduce utility revenues due to the lower federal income taxes, the end of bonus depreciation, and the requirement to return excess Accumulated Deferred Income Taxes (ADIT). This change in revenue is expected to reduce Funds From Operations (FFO) metrics across the sector, and absent regulatory mitigation strategies, is expected to lead to weaker credit metrics and negative ratings actions for some utilities.[29]

**Q. Have credit or equity analysts commented on the effect of the TCJA on utilities?**

A. Yes. Each of the credit rating agencies has indicated that the TCJA would have an overall negative credit impact on regulated operating companies of utilities and their holding companies due to the reduction in cash flow that results from the change in the federal tax rate and the loss of bonus depreciation.

Moody's noted that regulated utility rates are based on a cost-plus model, with tax expense being one of the pass-through items. Utilities will collect less income tax at a lower rate, reducing revenue. In addition, with the loss of bonus depreciation, the timing of future cash tax payments will be accelerated. Therefore, utilities will collect less tax revenue as a result of the lower tax rate and retain less of the collected taxes as a result of the loss of bonus depreciation. All else being equal, the changes will have a negative effect on utility cash flows and will, ultimately, negatively impact the utilities' ability to fund ongoing operations and capital improvement programs.

[29] FITCHRATINGS, *Special Report, What Investors Want to Know, Tax Reform Impact on the U.S. Utilities, Power & Gas Sector* (Jan. 24, 2018).

In S&P's 2019 trends report, the rating agency notes that the utility industry's financial measures weakened in 2018 and attributed that to tax reform, capital spending, and negative load growth. In addition, S&P expects that weaker credit metrics will continue into 2019 for those utilities operating with minimal financial cushion. S&P further expects that these utilities will look to offset the revenue reductions from tax reform with equity issuances. That rating agency reported that in 2018, regulated utilities issued nearly $35 billion in equity, which is more than twice the equity issuances in either 2016 or 2017.[30]

FitchRatings (Fitch) also indicated that any ratings actions will be guided by the response of regulators and the management of the utilities. Fitch notes that the solution will depend on the ability of utility management to manage the cash flow implications of the TCJA. Fitch offered several solutions to provide rate stability and to moderate changes to cash flow in the near term, including increasing the authorized ROE and/or equity ratio.[31]

[30] Standard & Poor's Ratings, "Industry Top Trends 2019, North America Regulated Utilities", November 8, 2018.
[31] FITCHRATINGS, *Special Report, What Investors Want to Know, Tax Reform Impact on the U.S. Utilities, Power & Gas Sector* (Jan. 24, 2018).

**Q. How has Moody's responded to the increased risk for utilities resulting from the TCJA?**

A. In January 2018, Moody's issued a report changing the rating outlook for several regulated utilities from Stable to Negative.[32] At that time, Moody's noted that the rating change affected companies with limited cushion in their ratings for deterioration in financial performance. In June 2018, Moody's issued a report that downgraded the outlook for the entire regulated utility industry from Stable to Negative for the first time ever, citing ongoing concerns about the negative effect of the TCJA on cash flows of regulated utilities. While noting that "[r]egulatory commissions and utility management teams are taking important first steps"[33] and that "we have seen some credit positive developments in some states in response to tax reform,"[34] Moody's concludes that "we believe that it will take longer than 12-18 months for the majority of the sector to show any material financial improvement from such efforts."[35] Beginning in mid-2018, Moody's began downgrading several utilities. Figure 7 summarizes credit rating downgrades for utilities that have resulted from tax reform.

[32] MOODY'S INVESTOR SERVICE, Global Credit Research, *Rating Action: Moody's changes outlooks on 25 US regulated utilities primarily impacted by tax reform* (Jan. 19, 2018).
[33] MOODY'S INVESTORS SERVICE, *Regulated utilities – US: 2019 outlook shifts to negative due to weaker cash flows, continued high leverage* at 3 (June 18, 2018).
[34] *Id.*
[35] *Id.*

**Figure 7: Credit Rating Downgrades Resulting from TCJA**

| Utility | Rating Agency | Credit Rating before TCJA | Credit Rating after TCJA | Downgrade Date |
|---|---|---|---|---|
| El Paso Electric Company | Moody's | Baa1 | Baa2 | 9/17/2019 |
| Questar Gas Company | Moody's | A2 | A3 | 8/15/2019 |
| DTE Gas Company | Moody's | A2 | A3 | 7/22/2019 |
| South Jersey Gas Company | Moody's | A2 | A3 | 7/17/2019 |
| Central Hudson Gas & Electric | Moody's | A2 | A3 | 7/12/2019 |
| Oklahoma Gas & Electric Company | Moody's | A2 | A3 | 5/31/2019 |
| American Water Works | Moody's | A3 | Baa1 | 4/1/2019 |
| Niagara Mohawk Power Corporation | Moody's | A2 | A3 | 3/29/2019 |
| KeySpan Gas East Corporation (KEDLI) | Moody's | A2 | A3 | 3/29/2019 |
| Xcel Energy | Moody's | A3 | Baa1 | 3/28/2019 |
| ALLETE, Inc. | Moody's | A3 | Baa1 | 3/26/2019 |
| Brooklyn Union Gas Company (KEDNY) | Moody's | A2 | A3 | 2/22/2019 |
| Avista Corp. | Moody's | Baa1 | Baa2 | 12/30/2018 |
| Consolidated Edison Company of New York | Moody's | A2 | A3 | 10/30/2018 |
| Consolidated Edison, Inc. | Moody's | A3 | Baa1 | 10/30/2018 |
| Orange and Rockland Utilities | Moody's | A3 | Baa1 | 10/30/2018 |
| Southwestern Public Service Company | Moody's | Baa1 | Baa2 | 10/19/2018 |
| Dominion Energy Gas Holdings | Moody's | A2 | A3 | 9/20/2018 |
| Piedmont Natural Gas Company, Inc. | Moody's | A2 | A3 | 8/1/2018 |
| WEC Energy Group, Inc. | Moody's | A3 | Baa1 | 7/12/2018 |
| Integrys Holdings Inc. | Moody's | A3 | Baa1 | 7/12/2018 |
| OGE Energy Corp. | Moody's | A3 | Baa1 | 7/5/2018 |
| Oklahoma Gas & Electric Company | Moody's | A1 | A2 | 7/5/2018 |

**Q. Is it reasonable to expect that investors have included the negative effects of the TCJA on the cash flows of utilities in their valuation models?**

A. Not entirely. It is reasonable to expect that investors have reviewed the reports published by the credit rating agencies such as Moody's, S&P, and Fitch and are therefore considering the effects of the TCJA. However, utilities are still managing the negative effects of the TCJA and are working with regulators to determine appropriate solutions to mitigate the effect of the TCJA on cash flows. As Moody's

noted in its November 2018 report, the TCJA is expected to continue to have a near-term effect on the cash flows of utilities, which resulted in Moody's negative outlook on the industry for 2019.[36] Furthermore, as shown in Figure 7, Moody's is continuing to evaluate the effect of the TCJA on the cash flows of individual utilities. As part of the credit evaluation, rating agencies are specifically considering the recent rate case decisions of utilities to determine if the results of these cases help to mitigate the effect of the TCJA on cash flows. Therefore, the credit rating agencies appear to be continuing to monitor the effects of the TCJA on utilities.

**Q. Have state regulatory commissions considered market events and the utility's ability to attract capital in determining the equity return?**

A. Yes. In a recent rate case for Consumers Energy Company in Michigan, Case No. U-18322, the Michigan Public Service Commission (Michigan PSC) Staff recommended a 9.80 percent ROE based on the results of the DCF, CAPM, and Risk Premium approaches, which was supported by the Administrative Law Judge (ALJ).[37] In its order issued on March 29, 2018, however, the Michigan PSC partly disagreed with the ALJ and Staff regarding expected market conditions and authorized a 10.00 percent ROE for Consumers Energy Company. The Michigan PSC noted that:

> [I]n setting the ROE at 10.00%, the Commission believes there is an opportunity for the company to earn a fair return during this period of atypical market conditions. This decision also reinforces the Commission's belief that customers do not benefit from a lower ROE if it means the utility has difficulty accessing capital at attractive terms and in a timely manner. The fact that other utilities have been able to access capital despite lower ROEs, as argued by many intervenors, is

[36] MOODY'S INVESTORS SERVICE, *Research Announcement: Moody's: US regulated utilities sector outlook for 2019 remains negative* (Nov. 8, 2018).
[37] *In the matter of the application of Consumers Energy Company for authority to increase its rates for the generation and distribution of electricity and for other relief*, Mich. Pub. Serv. Comm'n, Cause No. U-18322, Order at 37 (March 29, 2018).

> also a relevant consideration. It is also important to consider how extreme market reactions to singular events, as have occurred in the recent past, may impact how easily capital will be able to be accessed during the future test period should an unforeseen market shock occur. The Commission will continue to monitor a variety of market factors in future rate cases to gauge whether volatility and uncertainty continue to be prevalent issues that merit more consideration in setting the ROE.[38]

The Michigan PSC references "singular events" and the overall effect the events could have on the ability of a utility to access capital. Consistent with the Michigan PSC's views, it is important to consider that the TCJA has had a negative effect on the cash flows of utilities. In addition, it is important to consider this reduced cash flow in the context of overall market conditions when determining the appropriate ROE and equity ratio to enable PacifiCorp the ability to attract capital at reasonable terms during the period that rates will be in effect.

**Q. Has the Commission recognized that the TCJA has had an adverse impact on utility cash flows?**

A. Yes. In Avista's 2017 rate case, the Commission "note[d] the TCJA will increase stress on the Company's balance sheet and credit metrics as short-term cash flows are impacted by customer refunds."[39]

**Q. What conclusions do you draw from your analysis of capital market conditions?**

A. The important conclusions resulting from capital market conditions are:

- The assumptions used in the ROE estimation models have been affected by recent historical market conditions.

[38] *Id.* at 43.
[39] Avista Order 07, ¶ 72.

- Recent market conditions are not expected to persist as yields on long-term bonds are expected to increase. As a result, the recent historical market conditions are not reflective of the market conditions that will be present when the rates for PacifiCorp will be in effect.
- It is important to consider the results of a variety of ROE estimation models, using forward-looking assumptions to estimate the cost of equity.
- Without adequate regulatory support, the TCJA will have a negative effect on utility cash flows, which increases investor risk expectations for utilities.

## VI. PROXY GROUP SELECTION

**Q. Why have you used a group of proxy companies to estimate the cost of equity for PacifiCorp?**

A. In this proceeding, I am focused on estimating the cost of equity for an electric utility company that is not itself publicly traded. Because the cost of equity is a market-based concept and given that PacifiCorp's electric operations in Washington do not make up the entirety of a publicly traded entity, it is necessary to establish a group of companies that is both publicly traded and comparable to PacifiCorp in certain fundamental business and financial respects to serve as its "proxy" in the ROE estimation process.

Even if PacifiCorp was a publicly traded entity, it is possible that transitory events could bias its market value over a given period. A significant benefit of using a proxy group is that it moderates the effects of unusual events that may be associated with any one company. The proxy companies used in my analyses all possess a set of operating and risk characteristics that are substantially comparable to PacifiCorp, and

thus provide a reasonable basis to derive an estimate of the appropriate ROE for PacifiCorp.

**Q. Please provide a brief profile of PacifiCorp.**

A. PacifiCorp is an electric utility that is a division of PacifiCorp, which is an indirect, wholly-owned subsidiary of Berkshire Hathaway Energy Company (BHE). PacifiCorp provides electric utility service to approximately 1.9 million residential, commercial and industrial customers in California, Idaho, Oregon, Utah, Washington, and Wyoming. In Washington, PacifiCorp provides electric service to approximately 131,453 residential, commercial, and industrial customers.[40] As of December 31, 2018, PacifiCorp's net utility electric plant in Washington was approximately $1.11 billion.[41] In addition, PacifiCorp had 2018 electric operating revenue in Washington of approximately $337 million, made up of 39.37 percent residential, 35.60 percent commercial, 16.68 percent industrial and 8.35 percent public lighting, sales for resale and other.[42] PacifiCorp's electric operations in Washington represented approximately 7 percent of PacifiCorp's electric sales in 2018.[43] Approximately 78.5 percent of PacifiCorp's 2018 net generation needs in Washington were satisfied by its owned and joint-owned facilities while the remaining 21.5 percent was purchased power.[44] PacifiCorp currently has an investment grade

[40] Pacific Power & Light Company, 2018 Annual Report to the Washington Utilities and Transportation Commission, at 2.
[41] *Id.* at 10, 219.
[42] *Id.* at 2.
[43] Berkshire Hathaway Energy Company, 2018 Form 10-K at 3.
[44] Pacific Power and Light Company, 2018 Annual Report to the Washington Utilities and Transportation Commission at 12a.

long-term rating of A (Outlook: Stable) from S&P and A3 (Outlook: Stable) from Moody's.[45]

**Q. How did you select the companies included in your proxy group?**

A. I began with the group of 37 companies that Value Line classifies as Electric Utilities and applied the following screening criteria to select companies that:

- pay consistent quarterly cash dividends, because companies that do not cannot be analyzed using the Constant Growth DCF model;
- have investment grade long-term issuer ratings from S&P and/or Moody's;
- are covered by at least two utility industry analysts;
- have positive long-term earnings growth forecasts from at least two utility industry equity analysts;
- own regulated generation assets that are in rate base;
- have more than 5 percent of owned regulated generation capacity come from regulated coal-fired power plants;
- derive more than 60.00 percent of their total operating income from regulated operations;
- derive more than 60.00 percent of regulated operating income from regulated electric operations; and
- were not parties to a merger or transformative transaction during the analytical periods relied on.

[45] SNL Financial, October 28, 2019.

**Q. What is the composition of your proxy group?**

A. The screening criteria discussed above is shown in Exhibit No. AEB-5 and resulted in a proxy group consisting of the 23 companies shown in Figure 8 below.

**Figure 8: Proxy Group**

| Company | Ticker |
|---|---|
| ALLETE, Inc. | ALE |
| Alliant Energy Corporation | LNT |
| Ameren Corporation | AEE |
| American Electric Power Company, Inc. | AEP |
| Avista Corporation | AVA |
| CenterPoint Energy, Inc. | CNP |
| CMS Energy Corporation | CMS |
| Dominion Resources, Inc. | D |
| DTE Energy Company | DTE |
| Duke Energy Corporation | DUK |
| Entergy Corporation | ETR |
| Evergy, Inc. | EVRG |
| FirstEnergy Corporation | FE |
| IDACORP, Inc. | IDA |
| NextEra Energy, Inc. | NEE |
| NorthWestern Corporation | NWE |
| OGE Energy Corporation | OGE |
| Pinnacle West Capital Corporation | PNW |
| PNM Resources, Inc. | PNM |
| Portland General Electric Company | POR |
| PPL Corporation | PPL |
| Southern Company | SO |
| Xcel Energy Inc. | XEL |

## VII. COST OF EQUITY ESTIMATION

**Q. Please briefly discuss the ROE in the context of the regulated rate of return.**

A. The overall ROR for a regulated utility is based on its weighted average cost of capital, in which the cost rates of the individual sources of capital are weighted by their respective book values. While the costs of debt and preferred stock can be

directly observed, the cost of equity is market-based and, therefore, must be estimated based on observable market data.

**Q. How is the required ROE determined?**

A. The required ROE is estimated by using one or more analytical techniques that rely on market-based data to quantify investor expectations regarding required equity returns, adjusted for certain incremental costs and risks. Informed judgment is then applied to determine where the company's cost of equity falls within the range of results. The key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' views of the financial markets in general, as well as the subject company (in the context of the proxy group), in particular.

**Q. What methods did you use to determine PacifiCorp's ROE?**

A. I considered the results of the Constant Growth DCF model, a Projected Constant Growth DCF model, the CAPM model, the Bond Yield Plus Risk Premium methodology, and an Expected Earnings analysis. As discussed in more detail below, a reasonable ROE estimate appropriately considers alternative methodologies and the reasonableness of their individual and collective results.

**Importance of Multiple Analytical Approaches**

**Q. Why is it important to use more than one analytical approach?**

A. Because the cost of equity is not directly observable, it must be estimated based on both quantitative and qualitative information. When faced with the task of estimating the cost of equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed. Several models have been developed to

estimate the cost of equity, and I use multiple approaches to estimate the cost of equity. As a practical matter, however, all the models available for estimating the cost of equity are subject to limiting assumptions or other methodological constraints. Consequently, many well-regarded finance texts recommend using multiple approaches when estimating the cost of equity. For example, Copeland, Koller, and Murrin suggest using the CAPM and Arbitrage Pricing Theory model,[46] while Brigham and Gapenski recommend the CAPM, DCF, and Bond Yield Plus Risk Premium approaches.[47]

**Q. Is it important given the current market conditions to use more than one analytical approach?**

A. Yes. As I explain above, low interest rates and the effects of the investor "flight to quality" can be seen in high utility share valuations, relative to historical levels and relative to the broader market. Higher utility stock valuations produce lower dividend yields and result in lower cost of equity estimates from a DCF analysis. Low interest rates also affect the CAPM in two ways: (1) the risk-free rate is lower; and (2) because the market risk premium is a function of interest rates, (i.e., it is the return on the broad stock market less the risk-free interest rate), the risk premium should move higher when interest rates are lower. Therefore, it is important to use multiple analytical approaches to moderate the impact that the current low interest rate environment is having on the ROE estimates for the proxy group and, where possible,

[46] TOM COPELAND, TIM KOLLER AND JACK MURRIN, VALUATION: MEASURING AND MANAGING THE VALUE OF COMPANIES, at 214 (3rd ed. 2000).
[47] EUGENE BRIGHAM, LOUIS GAPENSKI, FINANCIAL MANAGEMENT: THEORY AND PRACTICE at 341 (7th ed. 1994).

consider using projected market data in the models to estimate the return for the forward-looking period.

**Q. Has the Commission made similar findings regarding the reliance on multiple models given current market conditions?**

A. Yes. It is my understanding that the Commission has repeatedly emphasized that it "places value on each of the methodologies used to calculate the cost of equity and does not find it appropriate to select a single method as being the most accurate or instructive."[48] The Commission has explained that "[f]inancial circumstances are constantly shifting and changing, and we welcome a robust and diverse record of evidence based on a variety of analytics and cost of capital methodologies."[49] In Avista's 2017 rate case, the Commission considered multiple models including the DCF, CAPM, Risk Premium and Comparable Earnings analyses.[50] However, the Commission relied on the results of the DCF, Risk Premium and Comparable Earnings analyses to develop the range of reasonable returns excluding the results of the CAPM due to the wide range of results presented and the result of one DCF analysis which the Commission viewed as too low and anomalous.[51]

**Q. What are your conclusions about the results of the DCF and CAPM models?**

A. Recent market data that is used as the basis for the assumptions for both models have been affected by market conditions. As a result, relying exclusively on historical assumptions in these models, without considering whether these assumptions are consistent with investors' future expectations, will underestimate the cost of equity

[48] *WUTC v. Pac. Power & Light Co.*, Docket No. UE-130043, Order 05, ¶ 89 (Dec. 4, 2013).
[49] *WUTC v. Pac. Power & Light Co.*, Docket No. UE-100749, Order 06, ¶ 91 (Mar. 25, 2011).
[50] Avista Order 07, ¶ 60-66.
[51] *Id.*

that investors would require over the period that the rates in this case are to be in effect. In this instance, relying on the historically low dividend yields that are not expected to continue over the period that the new rates will be in effect will underestimate the ROE for PacifiCorp.

The use of recent historical Treasury bond yields in the CAPM also tends to underestimate the projected cost of equity. Recent experience indicates that interest rates will increase over the near-term. The expectation that bond yields will not remain at currently low levels means that the expected cost of equity would be higher than is suggested by the CAPM using historical average yields. The use of projected yields on Treasury bonds results in CAPM estimates that are more reflective of the market conditions that investors expect during the period that PacifiCorp's rates will be in effect.

**Constant Growth DCF Model**

**Q. Please describe the DCF approach.**

A. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

Where $P_0$ represents the current stock price, D1…D∞ are all expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the following form:

$$k = \frac{D_0(1+g)}{P_0} + g \qquad [2]$$

Equation [2] is often referred to as the Constant Growth DCF model in which the first term is the expected dividend yield and the second term is the expected long-term growth rate.

**Q. What assumptions are required for the Constant Growth DCF model?**

A. The Constant Growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions is violated, considered judgment and/or specific adjustments should be applied to the results.

**Q. What market data did you use to calculate the dividend yield in your Constant Growth DCF model?**

A. The dividend yield in my Constant Growth DCF model is based on the proxy companies' current annualized dividend and average closing stock prices over the 30-, 90-, and 180-trading days ended September 30, 2019.

**Q. Why did you use 30-, 90-, and 180-day averaging periods?**

A. In my Constant Growth DCF model, I use an average of recent trading days to calculate the term $P_0$ in the DCF model to ensure that the ROE is not skewed by anomalous events that may affect stock prices on any given trading day. The averaging period should also be reasonably representative of expected capital market conditions over the long-term. However, the averaging periods that I use rely on historical prices which, as discussed above, are currently at unsustainably high levels that are not expected to continue during the period that PacifiCorp's rates will be in

effect. The use of current prices in the Constant Growth DCF model is not consistent with forward-looking market expectations. Therefore, the results of my Constant Growth DCF model using historical data may underestimate the forward-looking cost of equity. As a result, I place more weight on the mean to mean-high results produced by my Constant Growth DCF model. In addition, I calculate an additional Constant Growth DCF analysis which relies on projected market data from Value Line to more reasonably approximate future market conditions.

**Q. Did you make any adjustments to the dividend yield to account for periodic growth in dividends?**

A. Yes, I did. Because utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, I applied one-half of the expected annual dividend growth rate for purposes of calculating the expected dividend yield component of the DCF model. This adjustment ensures that the expected first year dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the aggregated dividends to be paid during that time.

**Q. Why is it important to select appropriate measures of long-term growth in applying the DCF model?**

A. In its Constant Growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth estimate in perpetuity. To reduce the long-term growth rate to a single measure, one must assume that the payout ratio remains constant and that earnings per share, dividends per share and book value per share all grow at the same constant

rate. Over the long run, however, dividend growth can only be sustained by earnings growth. Therefore, it is important to incorporate a variety of sources of long-term earnings growth rates into the Constant Growth DCF model.

**Q. Which sources of long-term earnings growth rates did you use?**

A. My Constant Growth DCF model incorporates three sources of long-term earnings growth rates: (1) Zacks Investment Research; (2) Thomson First Call (provided by Yahoo! Finance); and (3) Value Line Investment Survey.

**Discounted Cash Flow Model Results**

**Q. How did you calculate the range of results for the Constant Growth DCF Model?**

A. I calculated the low result for my DCF models using the minimum growth rate (*i.e.*, the lowest of the First Call, Zacks, and Value Line earnings growth rates) for each of the proxy group companies. Thus, the low result reflects the minimum DCF result for the proxy group. I used a similar approach to calculate the high results, using the highest growth rate for each proxy group company. The mean results were calculated using the average growth rates from all sources.

**Q. Have you excluded any of the Constant Growth DCF results for individual companies in your proxy group?**

A. Yes, I have. It is appropriate to exclude Constant Growth DCF results below a specified threshold at which equity investors would consider such returns to provide an insufficient return increment above long-term debt costs. The average credit rating for the companies in my proxy group is BBB+/Baa1. The average yield on Moody's Baa-rated utility bonds for the 30 trading days ending September 30, 2019, was

3.65 percent.[52] As shown on Exhibit No. AEB-6, I have eliminated Constant Growth DCF results lower than 7.00 percent because such returns would provide equity investors a risk premium only 335 basis points above Baa-rated utility bonds.

**Q. Have you considered the results of any other DCF analyses?**

A. Yes, because of analysts' views that utility stocks may currently be at unsustainably high prices, I have also considered the results of a projected Constant Growth DCF model. The projected DCF analysis relies on Value Line's projected average stock prices and dividends for the period from 2022 through 2024 and the five-year projected EPS growth rates. As shown in Exhibit No. AEB-7, my analysis demonstrates that using the Value Line projected assumptions in the DCF model increases the ROE by 66 basis points (*i.e.*, 9.65 percent vs. 8.99 percent) from the average DCF mean result for all three dividend measurement periods shown in Exhibit No. AEB-6.

**Q. What were the results of your DCF analyses?**

A. Figure 9 summarizes the results of my DCF analyses. As shown in Figure 9, the mean DCF results range from 8.93 percent to 9.65 percent and the mean high results are in the range of 10.10 percent to 10.45 percent. While I also summarize the mean low DCF results, I do not believe that the low DCF results provide a reasonable spread over the expected yields on Treasury bonds to compensate investors for the incremental risk related to an equity investment.

[52] Source: Bloomberg Professional.

**Figure 9: Discounted Cash Flow Results**

| | Mean Low | Mean | Mean High |
|---|---|---|---|
| **Constant Growth DCF[53]** | | | |
| 30-Day Average | 8.47% | 8.93% | 10.10% |
| 90-Day Average | 8.45% | 9.02% | 10.20% |
| 180-Day Average | 8.55% | 9.03% | 10.15% |
| **Constant Growth DCF – Projected Price and Dividends[54]** | | | |
| 2022-2024 Projection | 9.04% | 9.65% | 10.45% |

**Q. What are your conclusions about the results of the DCF models?**

A. As discussed previously, one primary assumption of the DCF models is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. To the extent that utility valuations are high and may not be sustainable, it is important to consider the results of the DCF models with caution. The dividend yield on the 30-day average DCF analysis was 3.16 percent, lower than the average dividend yield for electric utilities over the last 10 years. These data points demonstrate that the results of the current DCF models are significantly below more normal market conditions. Therefore, while I have given weight to the results of the Constant Growth DCF model, my recommendation also gives weight to the results of other ROE estimation models.

**CAPM Analysis**

**Q. Please briefly describe the CAPM.**

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable or "systematic" risk of that security. This second

[53] *See* Exhibit No. AEB-6.
[54] *See* Exhibit No. AEB-7.

component is the product of the market risk premium and the Beta coefficient, which measures the relative riskiness of the security being evaluated.

The CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \quad [3]$$

Where:

$K_e$ = the required market ROE;

$\beta$ = Beta coefficient of an individual security;

$r_f$ = the risk-free rate of return; and

$r_m$ = the required return on the market.

In this specification, the term ($r_m - r_f$) represents the market risk premium. According to the theory underlying the CAPM, because unsystematic risk can be diversified away, investors should only be concerned with systematic or non-diversifiable risk. Non-diversifiable risk is measured by Beta, which is defined as:

$$\beta = \frac{Covariance(r_e, r_m)}{Variance(r_m)} \quad [4]$$

The variance of the market return (*i.e.*, Variance ($r_m$)) is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the general market (*i.e.*, Covariance ($r_e$, $r_m$)) reflects the extent to which the return on that security will respond to a given change in the general market return. Thus, Beta represents the risk of the security relative to the general market.

**Q. What risk-free rate did you use in your CAPM analysis?**

A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day

average yield on 30-year U.S. Treasury bonds of 2.11 percent;[55] (2) the average projected 30-year U.S. Treasury bond yield for Q1 2020 through Q1 2021 of 2.32 percent;[56] and (3) the average projected 30-year U.S. Treasury bond yield for 2021 through 2025 of 3.60 percent.[57]

**Q. Would you place more weight on one of these scenarios?**

A. Yes. Based on current market conditions, I place more weight on the results of the projected yields on the 30-year Treasury bonds. As discussed previously, the estimation of the cost of equity in this case should be forward looking because it is the return that investors would receive over the future rate period. Therefore, the inputs and assumptions used in the CAPM analysis should reflect the expectations of the market at that time. As discussed above, leading economists surveyed by Blue Chip are expecting an increase in long-term interest rates over the next five years. This is an important consideration for equity investors as they assess their return requirements. While I have included the results of a CAPM analysis that relies on the current average risk-free rate, this analysis fails to take into consideration the effect of the market's expectations for interest rate increases on the cost of equity.

**Q. What Beta coefficients did you use in your CAPM analysis?**

A. As shown on Exhibit No. AEB-8, I used the Beta coefficients for the proxy group companies as reported by Bloomberg and Value Line. The Beta coefficients reported by Bloomberg were calculated using ten years of weekly returns relative to the S&P

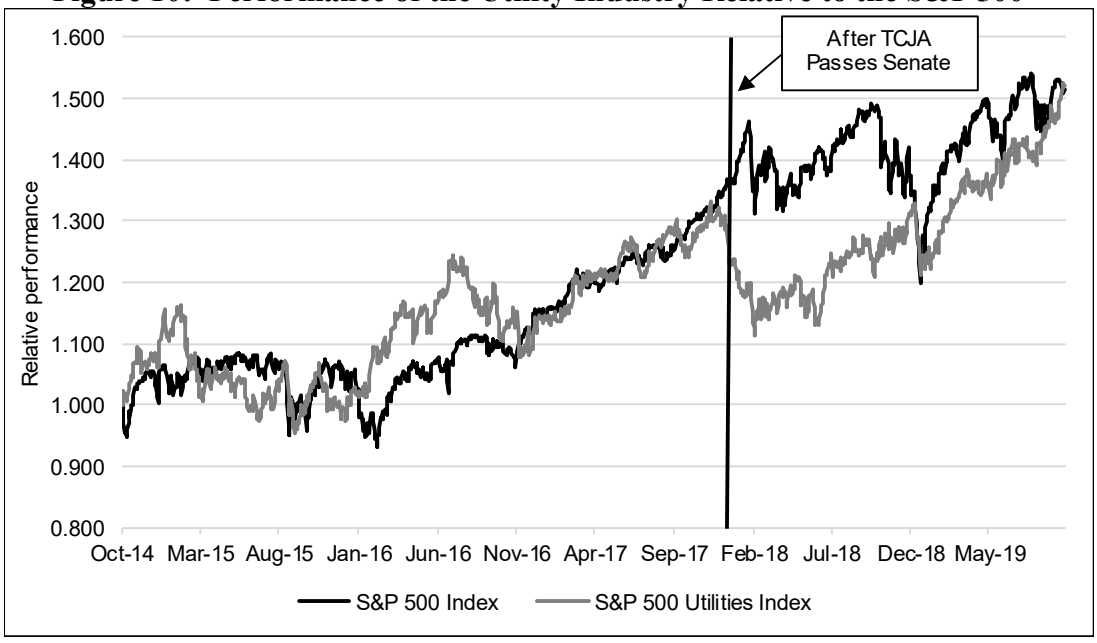
[55] Bloomberg Professional, as of September 30, 2019.
[56] Blue Chip Financial Forecasts, Vol. 38, No. 10 at 2 (October 1, 2019).
[57] Blue Chip Financial Forecasts, Vol. 38, No. 6 at 14 (June 1, 2019).

500 Index. Value Line's calculation is based on five years of weekly returns relative to the New York Stock Exchange Composite Index.

**Q. Why did you select a ten-year period to calculate the Beta coefficients from Bloomberg?**

A. As I discussed in Section V, the TCJA has had a significant effect on utility companies. While other industries are able to retain the benefits of a reduced corporate income tax rate, this benefit has largely been passed through to customers by utility companies. This fundamental difference affected investors' view of the utility industry relative to other industries. As shown in Figure 10, after the Senate passed the TCJA on December 2, 2017, utilities significantly deviated from the broader market.

**Figure 10: Performance of the Utility Industry Relative to the S&P 500[58]**




Because the performance of the utility industry deviated significantly from the broader market following the passage of the TCJA, the Beta coefficients for utility

[58] Bloomberg Professional. Data through September 30, 2019.

companies decreased well below the long-term historical averages. To reflect the long-term relationship, which has been that utility stocks are slightly less volatile than the broader market (*i.e.*, the relative volatility for utility companies has been slightly lower than the S&P 500 over the ten-year measure[59]), I selected a ten-year period to calculate the Beta coefficients from Bloomberg.

**Q. How did you estimate the market risk premium in the CAPM?**

A. I estimated the market risk premium based on the expected return on S&P 500 Index less the yield on the 30-year Treasury bond. I calculate the expected return on the S&P 500 Index using two methods: (1) the Constant Growth DCF model to estimate the return for each of the companies in the S&P 500 Index and (2) S&P's published five-year projected growth rate for the entire S&P 500 Index. As shown in Exhibit No. AEB-8, based on an estimated market capitalization-weighted dividend yield of 1.97 percent and a weighted long-term growth rate of 11.74 percent, the estimated required market return for the S&P 500 Index is 13.83 percent. The implied market risk premium over the current 30-day average of the 30-year U.S. Treasury bond yield, and projected yields on the 30-year U.S. Treasury bond, range from 10.23 percent to 11.72 percent. Additionally, as shown in Exhibit No. AEB-8, relying on S&P's five-year growth rate for the S&P 500 and dividend yield, the market return for the S&P 500 is 13.86 percent and the implied market risk premiums range from 10.26 percent to 11.74 percent.

[59] *Id.*

**Q. Have other regulators endorsed the use of a forward-looking market risk premium?**

A. Yes. The Staff in the Maine Public Utilities Commission (Maine PUC) have supported the forward-looking market risk premium. In the Bench Analysis in Docket No. 2018-00194 for Central Maine Power Company, Docket No. 2017-00198 for Emera Maine and Docket No. 2017-00065 for Northern Utilities, the Staff accepted the forward-looking methodology for calculating the market return that was proposed by the companies.[60] In each case, the market return was the expected return for the S&P 500, which was calculated using a Constant Growth DCF model.

Furthermore, the Maine PUC in Docket No. 2017-0198 used the CAPM results calculated by Staff and Emera Maine as a check on the reasonableness of the DCF results in the case and did not dispute the use of the forward-looking market risk premium by the parties (*i.e.*, Staff and Emera Maine).[61]

**Q. What are the results of your CAPM analyses?**

A. As shown in Figure 11 (see also Exhibit No. AEB-8), my CAPM analysis produces a range of returns from 9.06 percent to 10.37 percent. The mean returns using Bloomberg's Beta coefficients, the two estimates of the market return and three measures of the risk-free rate is 10.04 percent. Using the Value Line Beta coefficients, the two estimates of the market return and three measures of the risk-free rate, the mean result is 9.30 percent.

[60] Emera Maine, Request for Approval of a Proposed Rate Increase, Docket No. 2017-00198, Bench Analysis at 71-72 (December 21, 2017); Northern Utilities, Inc. d/b/a UNITIL, Request for Approval of Rate Change Pursuant to Section 307, Docket No. 2017-00065, Bench Analysis, at 15-16 (October 6, 2017).
[61] Emera Maine, Request for Approval of Proposed Rate Increase, Docket No. 2017-00198, June 28, 2018, at 41.

**Figure 11: CAPM Results**

| | Current Risk-Free Rate (2.11%) | Q1 2020 – Q1 2021 Projected Risk-Free Rate (2.32%) | 2021-2025 Projected Risk-Free Rate (3.60%) |
|---|---|---|---|
| **CAPM Calculated Using Calculated Return on the S&P 500 Companies** | | | |
| Value Line Beta | 9.06% | 9.15% | 9.67% |
| Bloomberg Beta | 9.84% | 9.91% | 10.35% |
| **CAPM Calculated Using S&P Implied Return on the S&P 500** | | | |
| Value Line Beta | 9.08% | 9.16% | 9.68% |
| Bloomberg Beta | 9.86% | 9.93% | 10.37% |

**Bond Yield Plus Risk Premium Analysis**

**Q. Please describe the Bond Yield Plus Risk Premium approach.**

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as a bondholder. That is, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. In my analysis, I used actual authorized returns for electric utility companies as the historical measure of the cost of equity to determine the risk premium.

**Q. Are there other considerations that should be addressed in conducting this analysis?**

A. Yes. It is important to recognize both academic literature and market evidence indicating that the equity risk premium (as used in this approach) is inversely related to the level of interest rates. That is, as interest rates increase (decrease), the equity

risk premium decreases (increases). Consequently, it is also important to develop an analysis that: (1) reflects the inverse relationship between interest rates and the equity risk premium; and (2) relies on recent and expected market conditions. Such an analysis can be developed based on a regression of the risk premium as a function of U.S. Treasury bond yields. Thus, if authorized ROEs for electric utilities serve as the measure of required equity returns and the yield on the long-term U.S. Treasury bond serves as the relevant measure of interest rates, the risk premium simply would be the difference between those two points.[62]

**Q. Is the Bond Yield Plus Risk Premium analysis relevant to investors?**

A. Yes. Investors are aware of ROE awards in other jurisdictions, and they consider those awards as a benchmark for a reasonable level of equity return for utilities of comparable risk operating in other jurisdictions. Because my Bond Yield Plus Risk Premium analysis is based on authorized ROEs for utility companies relative to corresponding Treasury yields, it provides relevant information to assess the return expectations of investors.

**Q. What did your Bond Yield Plus Risk Premium analysis reveal?**

A. As shown in Figure 12 below, from 1992 through September 2019, there was a strong negative relationship between risk premia and interest rates. To estimate that relationship, I conducted a regression analysis using the following equation:

$$RP = a + b(T) \quad [5]$$

[62] *See e.g.*, S. Keith Berry, *Interest Rate Risk and Utility Risk Premia during 1982-93*, MANAGERIAL AND DECISION ECONOMICS, Vol. 19, No. 2 (March, 1998)(in which the author used a methodology similar to the regression approach described below, including using allowed ROEs as the relevant data source, and came to similar conclusions regarding the inverse relationship between risk premia and interest rates); *See also* Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return*, FINANCIAL MANAGEMENT, Spring 1986 at 66.

Where:

RP = Risk Premium (difference between allowed ROEs and the yield on 30-year U.S. Treasury bonds)

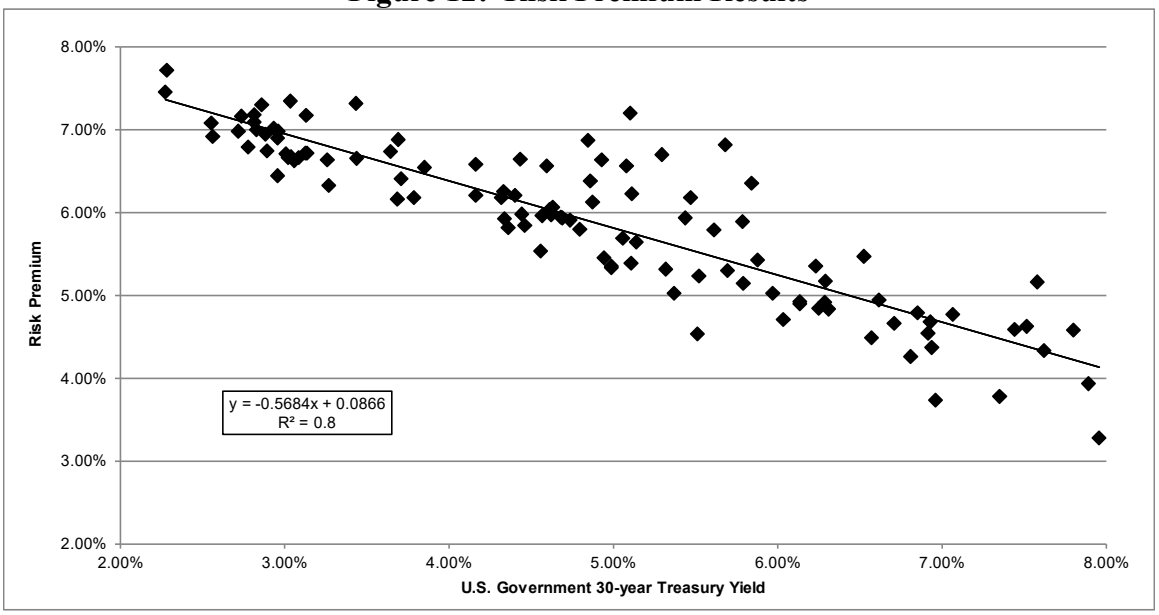
a = intercept term

b = slope term

T = 30-year U.S. Treasury bond yield

Data regarding allowed ROEs were derived from 612 integrated electric utility rate cases from 1992 through September 2019 as reported by Regulatory Research Associates (RRA).[63] This equation's coefficients were statistically significant at the 99.00 percent level.

**Figure 12: Risk Premium Results**




As shown on Exhibit No. AEB-9, based on the current 30-day average of the 30-year U.S. Treasury bond yield (*i.e.*, 2.11 percent), the risk premium would be

[63] This analysis began with a total of 1,175 cases and was screened to eliminate limited issue rider cases, transmission-only cases, distribution cases and cases that were silent with respect to the authorized ROE. After applying those screening criteria, the analysis was based on data for 612 cases.

7.45 percent, resulting in an estimated ROE of 9.57 percent. Based on the near-term (Q1 2020 – Q1 2021) projections of the 30-year U.S. Treasury bond yield (*i.e.*, 2.32 percent), the risk premium would be 7.34 percent, resulting in an estimated ROE of 9.66 percent. Based on longer-term (2021-2025) projections of the 30-year U.S. Treasury bond yield (*i.e.*, 3.60 percent), the risk premium would be 6.61 percent, resulting in an estimated ROE of 10.21 percent.

**Q. How did the results of the Bond Yield Risk Premium inform your recommended ROE for PacifiCorp?**

A. I have considered the results of the Bond Yield Risk Premium analysis in setting my recommended ROE for PacifiCorp. The results of both my CAPM and Bond Yield Risk Premium analyses provide support for my view that the DCF model is understating investors' return requirements under current market conditions. Also, as noted above, investors will consider the ROE award of a company when assessing the risk of that company as compared to utilities of comparable risk operating in other jurisdictions. The risk premium analysis takes into account this comparison by estimating the return expectations of investors based on the current and past ROE awards of electric utilities across the U.S.

**Expected Earnings Analysis**

**Q. Have you considered any additional analysis to estimate the cost of equity for PacifiCorp?**

A. Yes. I have considered an Expected Earnings analysis based on the projected ROEs for each of the proxy group companies.

**Q. What is an Expected Earnings Analysis?**

A. The Expected Earnings methodology is a comparable earnings analysis that calculates the earnings that an investor expects to receive on the book value of a stock. The expected earnings analysis is a forward-looking estimate of investors' expected returns. The use of an Expected Earnings approach based on the proxy companies provides a range of the expected returns on a group of risk comparable companies to the subject company. This range is useful in helping to determine the opportunity cost of investing in the subject company, which is relevant in determining a company's ROE.

**Q. Has the Commission recently considered the results of an Expected Earnings Analysis?**

A. Yes. In Avista's 2017 rate case, the Commission considered the results of the Comparable Earnings analysis in establishing the authorized ROE.[64] The Commission noted that it tends to place more weight on the results of the DCF, CAPM, and Risk Premium analyses; however, given the wide range of CAPM results presented by the ROE witnesses in the case, the Commission decided to apply weight to the results of the Comparable Earnings analysis.[65] Specifically, the Commission stated the following:

> Finally, as additional data points for our consideration of establishing Avista's ROE, we note that two witness, Mr. McKenzie for Avista and Mr. Parcell for Staff, employ the CE approach to two proxy groups of companies. The respective mid-points of each witnesses' CE analysis are 10.5 and 9.5 percent, respectively, with an average of 10.0 percent. Although we generally do not apply material weight to the CE method,

[64] The Expected Earnings analysis is a form of the Comparable Earnings analysis that relies exclusively on forward-looking projections.
[65] Avista Order 07, ¶ 65.

having stronger reliance on the DCF, CAPM and RP methods, we are inclined to include the CE method here given the anomalous CAPM results described previously.[66]

**Q. How did you develop the Expected Earnings Approach?**

A. I relied primarily on the projected ROE capital for the proxy companies as reported by Value Line for the period from 2022-2024. However, I adjusted those projected ROEs to account for the fact that the ROEs reported by Value Line are calculated on the basis of common shares outstanding at the end of the period, as opposed to average shares outstanding over the period. As shown in Exhibit No. AEB-10, the Expected Earnings analysis results in a mean of 11.17 percent and a median of 10.77 percent.

## VIII. REGULATORY AND BUSINESS RISKS

**Q. Do the DCF, CAPM, Risk Premium, and Expected Earnings results for the proxy group, taken alone, provide an appropriate estimate of the cost of equity for PacifiCorp?**

A. No. These results provide only a range of the appropriate estimate of PacifiCorp's cost of equity based on the proxy group of comparable companies. Although, as discussed above, while the companies in my proxy group are generally comparable to PacifiCorp, each company is unique, and no two companies have the exact business and financial risk profiles. Therefore, it is important to compare the business and financial risks of PacifiCorp's electric operations in Washington to the proxy group to determine if the results of my analysis should be adjusted within the reasonable range of results to account for differences in risk between PacifiCorp and the proxy group.

[66] *Id*.

As a result, I consider 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.

**Capital Expenditures**

**Q. Please summarize PacifiCorp's capital expenditure requirements.**

A. PacifiCorp's current projections for 2020 through 2024 include approximately $10.8 billion in capital investments for the period.[67] Based on PacifiCorp's net utility plant of approximately $18 billion as of December 31, 2018, the $10.8 billion anticipated capital expenditures are approximately 60.00 percent of PacifiCorp's net utility plant as of December 31, 2018.[68]

**Q. How is PacifiCorp's risk profile affected by its capital expenditure requirements?**

A. As with any utility facing increased capital expenditure requirements, PacifiCorp's risk profile may be adversely affected in two significant and related ways: (1) the heightened level of investment increases the risk of under recovery or delayed recovery of the invested capital; and (2) an inadequate return would put downward pressure on key credit metrics.

**Q. Do credit rating agencies recognize the risks associated with elevated levels of capital expenditures?**

A. Yes. From a credit perspective, the additional pressure on cash flows associated with higher levels of capital expenditures exerts corresponding pressure on credit metrics

[67] Data provided by PacifiCorp for Capital Expenditures 2020-2024.
[68] Data provided by PacifiCorp.

and, therefore, credit ratings. To that point, S&P explains the importance of regulatory support for large capital projects:

> When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were extraordinary measures for use in unusual circumstances, but when construction costs are rising, cash flow support could be crucial to maintain credit quality through the spending program. Even more favorable are those jurisdictions that present an opportunity for a higher return on capital projects as an incentive to investors.[69]

Therefore, to the extent that PacifiCorp's rates do not permit the opportunity to recover its full cost of doing business, PacifiCorp will face increased recovery risk and thus increased pressure on its credit metrics.

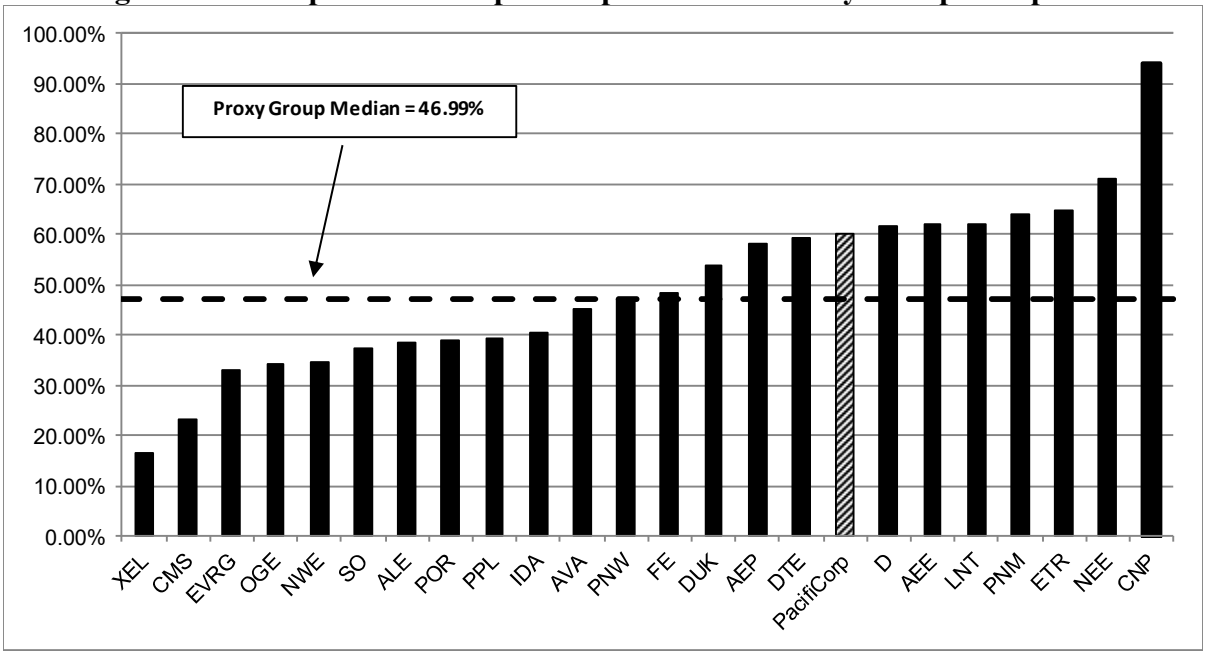
**Q. How do PacifiCorp's capital expenditure requirements compare to those of the proxy group companies?**

A. As shown in Exhibit No. AEB-11, I calculated the ratio of expected capital expenditures to net utility plant for PacifiCorp and each of the companies in the proxy group by dividing each company's projected capital expenditures for the period from 2020-2024 by its total net utility plant as of December 31, 2018. As shown in Exhibit No. AEB-11 (*see also* Figure 13 below), PacifiCorp's ratio of capital expenditures as a percentage of net utility plant of 60.00 percent is approximately 1.28 times the

[69] S&P GLOBAL RATINGS, *Assessing U.S. Investor-Owned Utility Regulatory Environments* at 7 (August 10, 2016).

median for the proxy group companies of 46.99 percent. This result indicates slightly greater risk relative to the companies in the proxy group.

**Figure 13: Comparison of Capital Expenditures – Proxy Group Companies**




**Q. Does PacifiCorp have a capital tracking mechanism to recover the costs associated with its capital expenditures plan between rate cases?**

A. No. PacifiCorp has not requested nor received approval to recover capital investment costs between rate cases utilizing a capital tracking mechanism. PacifiCorp has received approval for deferral accounting treatment of certain generation investments to minimize regulatory lag; however, PacifiCorp still depends on rate case filings for all capital cost recovery. Increased capital expenditure programs like PacifiCorp's often receive cost recovery through infrastructure and capital trackers in other jurisdictions. As shown in Exhibit No. AEB-12, 54.95 percent of the proxy group utilities recover costs through capital tracking mechanisms. Since PacifiCorp does not currently have a capital tracking mechanism, PacifiCorp's risk relative to the proxy group is significantly increased.

**Q. What are your conclusions regarding the effect of PacifiCorp's capital spending requirements on its risk profile and cost of capital?**

A. PacifiCorp's capital expenditure requirements as a percentage of net utility plant are increasing and will continue over the next few years. Additionally, unlike a number of the operating subsidiaries of the proxy group, PacifiCorp does not have a comprehensive capital tracking mechanism to recover projected capital expenditures. Therefore, PacifiCorp's plans for increased capital expenditures and limited ability to recover the capital investment on an as-incurred basis results in a risk profile that is greater than that of the proxy group and supports an ROE toward the higher end of the reasonable range of ROEs.

**Regulatory Risk**

**Q. Please explain how the regulatory environment affects investors' risk assessments.**

A. The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have the opportunity to recover the return of, and the market-required return on, invested capital. Regulatory authorities recognize that because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms; doing so balances the long-term interests of investors and customers. Utilities must finance their operations and require the opportunity to earn a reasonable return on their invested capital to maintain their financial profiles. PacifiCorp is no exception. In that respect, the regulatory

environment is one of the most important factors considered in both debt and equity investors' risk assessments.

From the perspective of debt investors, the authorized return should enable the utility to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its systems, and maintain the necessary levels of liquidity to fund unexpected events. This financial liquidity must be derived not only from internally generated funds, but also by efficient access to capital markets. Moreover, because fixed income investors have many investment alternatives, even within a given market sector, the utility's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

Equity investors require that the authorized return be adequate to provide a risk-comparable return on the equity portion of the utility's capital investments. Because equity investors are the residual claimants on the utility's cash flows (which is to say that the equity return is subordinate to interest payments), they are particularly concerned with the strength of regulatory support and its effect on future cash flows.

**Q. Please explain how credit rating agencies consider regulatory risk in establishing a company's credit rating.**

A. Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity and key financial metrics. Of

these criteria, regulatory framework and the ability to recover costs and earn returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.[70]

S&P also identifies the regulatory framework as an important factor in credit ratings for regulated utilities, stating: "One significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions in which a utility operates."[71] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[72]

**Q. How does the regulatory environment in which a utility operates affect its access to and cost of capital?**

A. The regulatory environment can significantly affect both the access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations."[73] Moody's further highlighted the relevance of a stable and predictable regulatory environment to a

[70] MOODY'S INVESTORS SERVICE, *Rating Methodology: Regulated Electric and Gas Utilities* at 4 (Jun. 23, 2017).
[71] STANDARD & POOR'S GLOBAL RATINGS, RATINGS DIRECT, *U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others* at 2 (June 25, 2018).
[72] *Id*. at 1.
[73] MOODY'S INVESTORS SERVICE, *Rating Methodology: Regulated Electric and Gas Utilities* at 6 (Jun. 23, 2017).

utility's credit quality, noting: "[b]roadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation."[74]

**Q. Have you conducted any analysis of the regulatory framework in Washington relative to the jurisdictions in which the companies in your proxy group operate?**

A. Yes. I have evaluated the regulatory framework in Washington on five factors that are important in terms of providing a regulated utility an opportunity to earn its authorized ROE. These are: (1) fuel cost recovery; (2) test year convention (*i.e.*, forecast vs. historical); (3) method for determining rate base (*i.e.*, average vs. year-end); (4) use of revenue decoupling mechanisms or other clauses that mitigate volumetric risk; and (5) prevalence of capital cost recovery between rate cases. The results of this regulatory risk assessment are shown in Exhibit No. AEB-12 and are summarized below.

Fuel Cost Recovery: PacifiCorp has a Power Cost Adjustment Mechanisms (PCAM) to recover power costs. However, while traditional fuel cost recovery mechanisms allow all variances between projected fuel costs and actual fuel costs to be recovered from or refunded to customers, the PCAM for PacifiCorp has a deadband of $4 million for power cost variances and asymmetrical tiered sharing bands that further reduce actual recovery of net power costs.[75] Power cost variances between $4 and $10 million are shared asymmetrically with customers. Positive variances are allocated 50 percent to customers and 50 percent to

[74] *Id.*
[75] Berkshire Hathaway Energy Company, 2018 Form 10-K, at 38.

PacifiCorp while negative variances are allocated 75 percent to customers and 25 percent to PacifiCorp.[76] Moreover, positive and negative variances in excess of $10 million are allocated 90 percent to customers and 10 percent to PacifiCorp. As a result, the PCAM does not fully mitigate the power cost risk for PacifiCorp.[77] This is important to recognize because fuel and purchased power costs typically account for 50 – 60 percent of the total operating costs for a regulated utility. Moreover, according to SNL Financial, there are only seven states (*i.e.*, Idaho, Missouri, Montana, Oregon, Vermont, Washington and Wyoming) that have fuel cost recovery mechanisms with sharing bands.[78] The remaining 43 states either have restructured and the electric utilities do not own generation or have fuel cost recovery mechanisms with a true-up between actual and forecasted fuel costs. Finally, 91.89 percent of the operating companies held by my proxy group are allowed to pass through fuel costs and purchased power costs directly to customers, without deadbands and sharing bands.

Test year convention: PacifiCorp uses a modified historical test year adjusted for known and measurable changes in Washington, while 49.55 percent of the operating companies held by the proxy group provide service in jurisdictions that use a fully or partially forecast test year.

Rate Base: In this case, PacifiCorp has proposed to determine rate base in Washington based on year-end original cost; however, rate base in Washington has typically been determined based on average rate base. Similarly, the majority

[76] *Id.*
[77] *Id.*
[78] Source: SNL Financial, Commission Profiles as of November 20, 2019. Puget Sound Energy and Avista also have sharing bands on fuel cost recovery in Washington.

(*i.e.*, 53.15 percent) of the operating subsidiaries held by the proxy group are allowed to use year-end rate base, meaning that the rate base includes capital additions that occurred in the second half of the test year and is more reflective of net utility plant going forward.

Volumetric Risk: PacifiCorp does have protection against volumetric risk in Washington through a revenue decoupling mechanism that was approved in 2016. This is consistent with the companies in the proxy group where 54.05 percent of the operating companies held by the proxy group have some form of protection against volumetric risk.

Capital Cost Recovery: As discussed above, PacifiCorp does not have a capital tracking mechanism to recover capital investment costs between rate cases. However, 54.95 percent of the operating companies held by the proxy group have some form of capital cost recovery mechanism in place.

**Q. Has RRA provided recent commentary regarding its regulatory ranking for PacifiCorp?**

A. Yes. In May 2017, RRA updated its evaluation of the regulatory environment in Washington and noted the following:

> The regulatory environment in Washington is, on balance, somewhat more restrictive than average from an investor viewpoint. The state's electric utilities remain vertically integrated and are regulated under a traditional regulatory paradigm. Rate case activity has been fairly robust, and authorized equity returns, some of which were approved following settlements, have been below prevailing industry averages when established. In addition, while there have been limited exceptions, the commission has primarily relied upon average rate base valuations and historical test years, each of which can exacerbate regulatory lag and render it difficult for the utility to earn the authorized return. On a more constructive note, the WUTC has approved the implementation of revenue decoupling mechanisms for

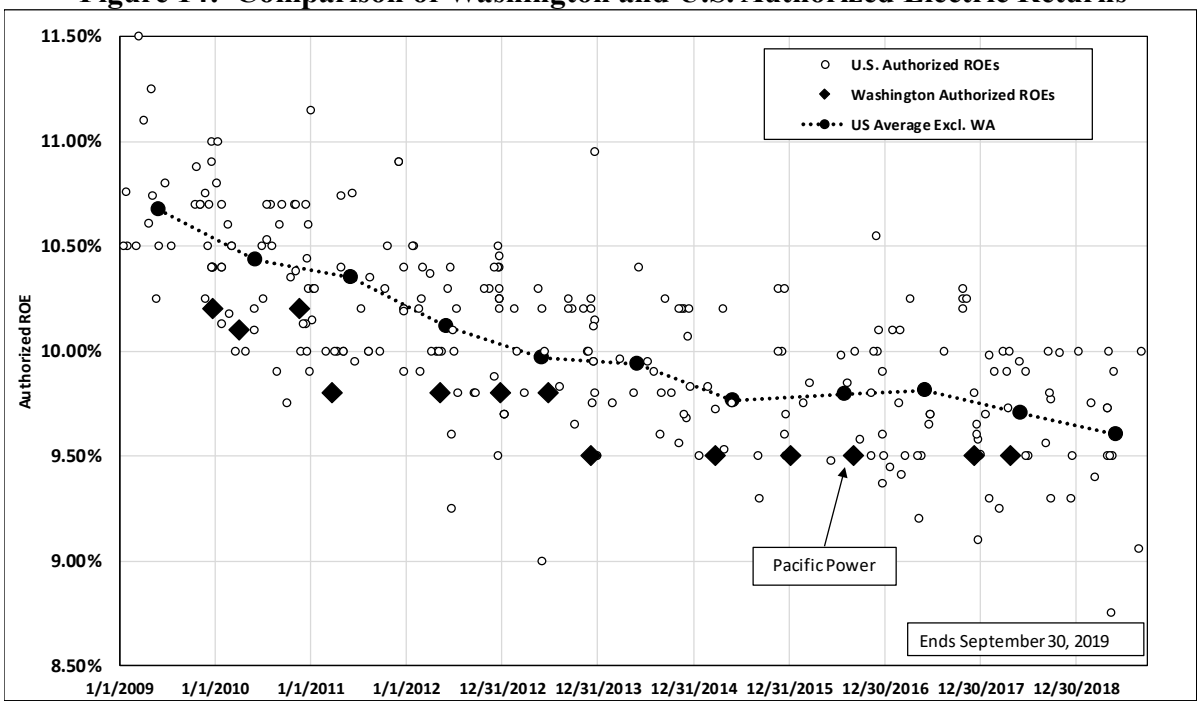
> most of the state's electric and gas utilities, and for one utility, has adopted a rate plan that provides for annual increases in allowed revenue per customer for the duration of the rate-plan period. Power-cost adjustment mechanisms, in effect for all of the state's electric utilities, contain dead-bands and sharing mechanisms that, while allowing the company an opportunity to retain a benefit, also limit the costs that may be recovered from ratepayers. In addition, for one utility operating in the state, recent rulings have disallowed purchased power costs from qualifying facilities located outside the state. In May 2017, RRA performed a comprehensive audit of its regulatory rankings. The ranking accorded Washington did not change as a result of this process. RRA continues to accord Washington an Average/3 ranking.[79]

**Q. How do recent returns in Washington compare to the authorized returns in other jurisdictions?**

A. As noted in RRA's evaluation above, the authorized ROEs for electric and natural gas utilities in Washington, while partially the result of settlement agreements approved by the Commission, have been below the average authorized ROEs for electric and natural gas utilities across the U.S. Figure 14 below shows the authorized returns for vertically integrated electric utilities in other jurisdictions since January 2009, and the returns authorized in Washington for electric companies. As shown in Figure 14, the authorized returns for electric utilities in Washington have been at the low end of the range produced by the authorized ROEs from other state jurisdictions for 2009 through 2019.

[79] Regulatory Research Associates, Profile of Washington Utilities and Transportation Commission (accessed October 28, 2019).

**Figure 14: Comparison of Washington and U.S. Authorized Electric Returns**




**Q. Is there any reason that the Commission should be concerned about authorizing equity returns that are at the low end of the range established by other state regulatory jurisdictions?**

A. Yes. Credit rating agencies take the authorized ROE into consideration in the overall risk analysis of a company. Therefore, to the extent that the returns in a jurisdiction are lower than the returns that have been authorized more broadly, credit rating agencies will consider this in the overall risk assessment of the regulatory jurisdiction in which the company operates. For example, Moody's recently downgraded ALLETE, Inc. from A3 to Baa1 for reasons that included the less than favorable outcome in Minnesota Power's last rate case in Minnesota. Moody's viewed Minnesota Power's recent rate case decision as credit negative for reasons which included: (1) the below average authorized ROE of 9.25 percent which resulted in a reduction of approximately $20 million between the requested and approved revenue

requirement; (2) the disallowance of certain expenses such as prepaid pension expenses; and (3) the decision to not adopt the annual rate review mechanism (ARRM) which if adopted would have mitigated the effect of industrial customers scaling back production in response to changes in economic conditions.[80] PacifiCorp must compete for capital with other utilities and businesses; therefore, placing PacifiCorp at the low end of authorized ROEs outside Washington over the longer term can negatively impact its access to capital.

**Q. How should the Commission use the information regarding authorized ROEs in other jurisdictions in determining the ROE for PacifiCorp?**

A. As discussed above, the companies in the proxy group operate in multiple jurisdictions across the U.S. Since PacifiCorp must compete directly for capital with investments of similar risk, it is appropriate to review the authorized ROEs in other jurisdictions. The comparison is important because investors are considering the authorized returns across the U.S. and are likely to invest equity in those utilities with the highest returns. Furthermore, investors are also likely to consider business and financial risks for a company like PacifiCorp which faces increased risk as a result of its capital expenditure plan and limited cost recovery mechanisms. Therefore, authorizing an ROE for PacifiCorp that is equivalent to the average authorized ROE for other vertically integrated electric utilities is not sufficient to compensate investors for the added risk of PacifiCorp. As such, it is important that the Commission consider, as I have in my recommendation, the additional risk of PacifiCorp and place

[80] MOODY'S INVESTORS SERVICE, *Credit Opinion: ALLETE, Inc. Update following downgrade* at 3 (April 3, 2019).

the authorized ROE for PacifiCorp towards the high end of authorized ROEs for other vertically integrated electric utilities.

**Q. What are your conclusions regarding the perceived risks related to the Washington regulatory environment?**

A. As discussed throughout this section of my testimony, both Moody's and S&P have identified supportive regulatory environment as an important consideration in developing their overall credit ratings for regulated utilities. RRA notes that Washington is more restrictive than other commissions on certain factors, by for instance, not permitting full cost recovery through fuel cost recovery mechanisms or capital cost recovery trackers, and using modified historical test years. Additionally, authorized ROEs in Washington have been below the average authorized ROEs for electric and gas utilities across the U.S. For these reasons, I conclude that the authorized ROE for PacifiCorp should be higher than the proxy group mean.

**Generation Ownership**

**Q. How does the business risk of vertically integrated electric utilities compare to the business risk of other regulated utilities?**

A. According to Moody's, generation ownership causes vertically integrated electric utilities to have higher business risk than either electric transmission and distribution companies, or natural gas distribution or transportation companies.[81] As a result of this higher business risk, integrated electric utilities typically require a higher ROE or percentage of equity in the capital structure than other electric or gas utilities.

[81] MOODY'S INVESTORS SERVICE, *Rating Methodology: Regulated Electric and Gas Utilities* at 21-22 (June 23, 2017).

**Q. Has PacifiCorp's need to diversify its generation portfolio over the near and long-term increased its risk?**

A. Yes. PacifiCorp's 2017 Integrated Resource Plan (IRP) outlined a plan entitled Energy Vision 2020 which includes an investment of over $3 billion to significantly increase the amount of wind power used to serve customers by 2020.[82] More specifically, the plan includes upgrading the existing wind fleet with new technology, adding approximately 1,150 MW of new wind power by the end of 2020, and building a new transmission segment in Wyoming to facilitate additional wind power. More recently, PacifiCorp released its 2019 IRP which builds on the initiatives of the 2017 IRP by proposing accelerated coal retirements and investment in transmission infrastructure that will assist with the addition of over 6,400 MW of new renewable resources by the end of 2023 with new renewable generation resources totaling approximately 11,000 MW by the end of 2038.[83] Thus, PacifiCorp will be investing significantly in new renewable generation over the near and long-term which will increase fuel diversity while reducing customer costs and carbon emissions. This planned investment will position PacifiCorp to meet the requirements of the Washington Clean Energy Transformation Act (CETA) regarding renewable generation resources. CETA requires PacifiCorp to remove coal-fired generation from rates by 2025, be greenhouse gas neutral by 2030, and serve retail customers with 100 percent non-emitting resources by 2045.[84]

[82] *Energy Vision 2020*, PACIFIC POWER, https://www.pacificpower.net/about/innovation-environment/energy-vision-2020.html.
[83] *Pacific Power & Light Company 2019 Integrated Resource Plan*, Docket No. UE-180259, Volume I at 1 (October 18, 2019).
[84] Senate Bill 5116, 66th Leg., 2019 Reg. Sess. (Wa. 2019).

**Q. How does PacifiCorp's generation investment plan affect its business risk?**

A. PacifiCorp's plan includes significant investment in building transmission, updating existing wind generation, and adding new wind and solar generation. This significant investment in transmission and renewable energy will require continued access to capital markets, which highlights the importance of granting PacifiCorp an allowed ROE and equity ratio that is sufficient to attract capital at reasonable terms.

**Q. What are your conclusions regarding the perceived risks related PacifiCorp's generation portfolio?**

A. PacifiCorp recently outlined plans for reshaping its generation portfolio. While PacifiCorp intends to improve fuel diversity and reduce risk over the long-run, the plans will require continued access to capital markets to finance the new investments. PacifiCorp's proposed transmission and generation investment plans, and the requirements of CETA increase the overall risk profile as compared with the proxy group.

## IX. CAPITAL STRUCTURE

**Q. Is the capital structure of PacifiCorp an important consideration in the determination of the appropriate ROE?**

A. Yes, it is. Assuming other factors equal, a higher debt ratio increases the risk to investors. For debt holders, higher debt ratios result in a greater portion of the available cash flow being required to meet debt service, thereby increasing the risk associated with the payments on debt. The result of increased risk is a higher interest rate. The incremental risk of a higher debt ratio is more significant for common equity shareholders. Common shareholders are the residual claimants on the cash

flow of PacifiCorp. Therefore, the greater the debt service requirement, the less cash flow available for common equity holders.

**Q. What is PacifiCorp's proposed capital structure?**

A. As described by Ms. Kobliha, PacifiCorp's proposal is to establish a capital structure consisting of 52.55 percent common equity, 47.44 percent long-term debt, and 0.01 percent preferred equity based on PacifiCorp's projected actual five-quarter average capital structure as of December 2020.

**Q. Did you conduct any analysis to determine if this requested equity ratio was reasonable?**

A. Yes, I did. I reviewed PacifiCorp's proposed capital structure and the capital structures of the utility operating subsidiaries of the proxy companies. Because the ROE is set based on the return that is derived from the risk-comparable proxy group, it is reasonable to look to the proxy group average capital structure to benchmark the equity ratio for PacifiCorp.

**Q. Please discuss your analysis of the capital structures of the proxy group companies.**

A. I calculated the mean proportions of common equity, long-term debt, and preferred equity over the most recent eight quarters[85] for each of the companies in the proxy group at the operating subsidiary level. My analysis of the capital structures of the proxy group companies is provided in Exhibit No. AEB-13. As shown in Exhibit No. AEB-13, the equity ratios for the proxy group at the operating utility company level

[85] The source data for this analysis is the operating company data provided in FERC Form 1 reports. Due to the timing of those filings, my average capital structure analysis uses the quarterly capital structures reported for the proxy group companies for the period from the fourth quarter of 2017 through the third quarter of 2019.

ranged from 39.98 percent to 61.54 percent with an average of 52.82 percent. PacifiCorp's proposed equity ratio of 52.55 percent is well within the range of equity ratios for the utility operating subsidiaries of the proxy group companies and is therefore reasonable.

**Q. Are there other factors to be considered in setting PacifiCorp's capital structure?**

A. Yes. The credit rating agencies' response to the TCJA must also be considered when determining the equity ratio. As discussed previously in my testimony, all three rating agencies have noted that the TCJA has negative implications for utility cash flows. S&P and FitchRatings have specifically identified increasing the equity ratio as one approach to ensure that utilities have sufficient cash flows following the tax cuts and the loss of bonus depreciation. Furthermore, Moody's unprecedented downgrade of the rating outlook for the entire utilities sector in June 2018 stresses the importance of maintaining adequate cash flow metrics for the industry as a whole and PacifiCorp in the context of this proceeding.

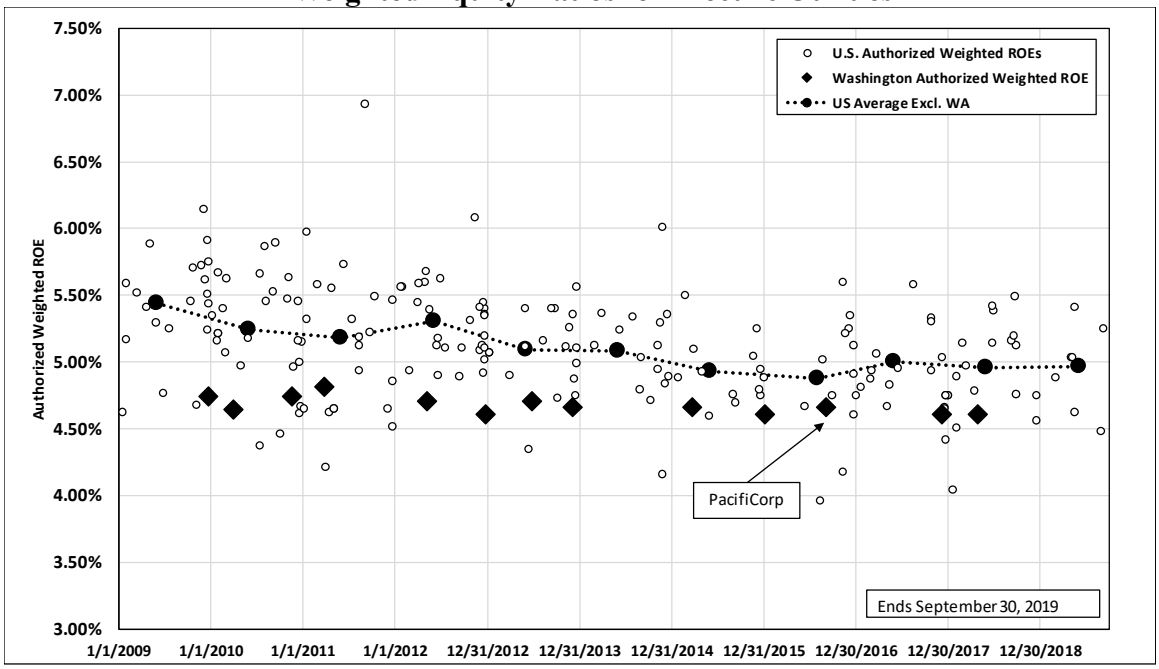
**Q. Is there a relationship between the equity ratio and the authorized ROE?**

A. Yes. The equity ratio is the primary indicator of financial risk for a regulated utility such as PacifiCorp. To the extent the equity ratio is reduced, it is necessary to increase the authorized ROE to compensate investors for the greater financial risk associated with a lower equity ratio.

**Q. Have you conducted an analysis to examine how the Commission's recent authorized equity ratios and authorized ROEs compare to those authorized in other jurisdictions?**

A. Yes. As shown in Figure 15 below, I compared the authorized WROEs (*i.e.*, authorized ROE times the authorized equity ratio) for integrated electric utilities in Washington to the authorized WROEs in other jurisdictions since January 2009. As shown in Figure 15, the authorized WROEs for integrated electric utilities in Washington have been at the bottom of the range of WROEs authorized by state jurisdictions.

**Figure 15: Comparison of Washington and U.S. Authorized Weighted Equity Ratios for Electric Utilities[86]**




[86] Rate cases in Arkansas, Florida, Indiana, and Michigan have been excluded from Figure 15 since the authorized capital structure approved in the cases includes deferred taxes and other credits at zero or low cost. The additional items have the effect of reducing both the equity and debt ratios used to establish the rate of return which, in turn, produces results that are not comparable to allowed equity ratios in other states.

**Q. Is it appropriate to consider the WROE that has been authorized in other jurisdictions when considering the appropriate equity ratio for Washington?**

A. Yes. One of the most important principles in determining the ROE for a company is to ensure the company has the opportunity to earn a reasonable return on capital that is consistent with the returns available on investments of comparable risk. While it is referenced most often in the discussion of the appropriate ROE, it is equally as important to consider the equity ratio. It is the combination of the equity ratio and the authorized ROE that define the return to investors. Therefore, the Commission must consider the equity ratio as well as the authorized ROE in establishing a risk-comparable return.

**Q. What is your conclusion regarding an appropriate capital structure for PacifiCorp?**

A. Considering the actual capital structures of the proxy group operating companies, I believe that PacifiCorp's proposed common equity ratio of 52.55 percent is reasonable. The proposed equity ratio is well within the range established by the capital structures of the utility operating subsidiaries of the proxy companies. In addition, it is reasonable to rely on a higher equity ratio than PacifiCorp may have relied on in prior cases as a result of: (1) the cash flow concerns raised by credit rating agencies as a result of the TCJA; and (2) PacifiCorp's above average business risk profile as compared to the proxy group. The proposed equity ratio in combination with my recommended ROE are reasonable and would be adequate to support capital attraction on reasonable terms.

## X. CONCLUSIONS AND RECOMMENDATION

**Q. What is your conclusion regarding a fair ROE for PacifiCorp?**

A. Figure 16 below provides a summary of my analytical results. Based on these results, the qualitative analyses presented in my direct testimony, the business and financial risks of PacifiCorp compared to the proxy group, and the effects of the TCJA on the cash flow metrics of utilities, it is my view that an ROE of 10.20 is reasonable and would fairly balance the interests of customers and shareholders. I recommend that the Commission authorize an ROE of 10.20 percent for PacifiCorp. This ROE would enable PacifiCorp to maintain its financial integrity and therefore its ability to attract capital at reasonable rates under a variety of economic and financial market conditions, while continuing to provide safe, reliable and affordable electric utility service to customers in Washington.

**Figure 16: Summary of Analytical Results[87]**

| **Constant Growth DCF** | | | |
|---|---|---|---|
| | Mean Low | Mean | Mean High |
| 30-Day Average Price | 8.47% | 8.93% | 10.10% |
| 90-Day Average Price | 8.45% | 9.02% | 10.20% |
| 180-Day Average Price | 8.55% | 9.03% | 10.15% |
| **Projected DCF** | | | |
| 2022-2024 Projection | 9.04% | 9.65% | 10.45% |
| **Capital Asset Pricing Model** | | | |
| | Current Risk-Free Rate (2.11%) | Q1 2020 – Q1 2020 Projected Risk-Free Rate (2.32%) | 2021-2025 Projected Risk-Free Rate (3.60%) |
| **Calculated Return on the S&P 500 Companies** | | | |
| Value Line Beta | 9.06% | 9.15% | 9.67% |
| Bloomberg Beta | 9.84% | 9.91% | 10.35% |
| **S&P Implied Return on the S&P 500** | | | |
| Value Line Beta | 9.08% | 9.16% | 9.68% |
| Bloomberg Beta | 9.86% | 9.93% | 10.37% |
| **Bond Yield Plus Risk Premium** | | | |
| | Current Risk-Free Rate (2.11%) | Q1 2020 – Q1 2020 Projected Risk-Free Rate (2.32%) | 2021-2025 Projected Risk-Free Rate (3.60%) |
| Risk Premium Results | 9.57% | 9.66% | 10.21% |
| **Expected Earnings Analysis** | | | |
| | Mean | | Median |
| Expected Earnings Results | 11.17% | | 10.77% |

[87] The analytical results included in Figure 16 reflect the results of the Constant Growth and Projected DCF analyses excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent.

**Q. What is your conclusion with respect to PacifiCorp's proposed capital structure?**

A. My conclusion is that PacifiCorp's proposal to establish a capital structure consisting of 52.55 percent common equity, 47.44 percent long-term debt, and 0.01 percent preferred equity is reasonable when compared to the capital structures of the companies in the proxy group and considering the impact of the TCJA on PacifiCorp's cash flows, and, therefore, should be adopted.

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

A. Yes.