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June 22, 2022

Via Electronic Filing

Public Utility Commission of Oregon
Attn: Filing Center
201 High St. SE, Suite 100
Salem OR 97301

Re: In the Matter of PACIFICORP, dba PACIFIC POWER
**Docket Nos. UE 399, UM 1694, UM 2134, UM 2142, UM 2167, UM 2185,
UM 2186, and UM 2201**

Dear Filing Center:

Please find enclosed the Opening Testimony and Exhibits of Michael P. Gorman (AWEC/CUB/100 – 121) on behalf of the Alliance of Western Energy Consumers (“AWEC”) and Oregon Citizens’ Utility Board (CUB) in the above-referenced docket.

Thank you for your assistance. If you have any questions, please do not hesitate to call.

Sincerely,

/s/ Corinne O. Milinovich
Corinne O. Milinovich

Enclosures

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this day served the **Alliance of Western Energy Consumers and Oregon Citizens' Utility Board's Opening Testimony and Exhibits** upon the parties shown below by sharing encrypted copies via electronic mail.

Dated this 22nd day of June, 2022

Sincerely,

/s/ Corinne O. Milinovich

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**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**OPENING TESTIMONY OF
MICHAEL P. GORMAN
ON BEHALF OF THE
ALLIANCE OF WESTERN ENERGY
CONSUMERS AND
OREGON CITIZENS' UTILITY
BOARD**

June 22, 2022

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EXHIBIT LIST

AWEC-CUB/101 – Qualifications of Michael P. Gorman

AWEC-CUB/102 – Rate of Return

AWEC-CUB/103 – Valuation Metrics

AWEC-CUB/104 – Proxy Group

AWEC-CUB/105 – Consensus Analysts’ Growth Rates

AWEC-CUB/106 – Constant Growth DCF Model (Consensus Analysts’ Growth Rates)

AWEC-CUB/107 – Payout Ratios

AWEC-CUB/108 – Sustainable Growth Rate

AWEC-CUB/109 – Constant Growth DCF Model (Sustainable Growth Rate)

AWEC-CUB/110 – Electricity Sales are Linked to U.S. Economic Growth

AWEC-CUB/111 – Multi-Stage Growth DCF Model

AWEC-CUB/112 – Common Stock Market/Book Ratio

AWEC-CUB/113 – Equity Risk Premium – Treasury Bond

AWEC-CUB/114 – Equity Risk Premium – Utility Bond

AWEC-CUB/115 – Bond Yield Spreads

AWEC-CUB/116 – Treasury and Utility Bond Yields

AWEC-CUB/117 – Value Line Beta

AWEC-CUB/118 – CAPM Return

AWEC-CUB/119 – Standard & Poor’s Credit Metrics

AWEC-CUB/120 – Bulkley Revised Multi-Stage DCF

AWEC-CUB/121 – Accuracy of Interest Rate Forecasts

1 **I. INTRODUCTION AND SUMMARY**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140,
4 Chesterfield, MO 63017.

5 **Q. WHAT IS YOUR OCCUPATION AND BY WHOM ARE YOU EMPLOYED?**

6 A. I am a consultant in the field of public utility regulation and a Managing Principal with
7 the firm of Brubaker & Associates, Inc. (“BAI”), energy, economic and regulatory
8 consultants.

9 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
10 **EXPERIENCE.**

11 A. This information is included in Exhibit AWEC-CUB/101.

12 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

13 A. I am testifying on behalf of the Alliance of Western Energy Consumers (“AWEC”) and
14 the Oregon Citizens’ Utility Board (“CUB”). AWEC members include large energy
15 consumers that purchase services from PacifiCorp, dba Pacific Power (“PacifiCorp” or
16 “Company”). CUB represents the interests of PacifiCorp’s residential customers.

17 **Q. ARE YOU SPONSORING ANY EXHIBITS IN CONNECTION WITH YOUR**
18 **TESTIMONY?**

19 A. Yes. I am sponsoring Exhibit AWEC-CUB/101 through Exhibit AWEC-CUB/121.

20 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

21 A. My testimony will address adjustments to PacifiCorp’s proposed overall rate of return
22 including return on equity, embedded debt cost of PacifiCorp, and analysis of
23 PacifiCorp’s testimony on these subjects.

1 **Q. DOES THE FACT THAT YOU DID NOT ADDRESS EVERY ISSUE RAISED IN**
2 **PACIFICORP'S TESTIMONY MEAN THAT YOU AGREE WITH**
3 **PACIFICORP'S TESTIMONY ON THOSE ISSUES?**

4 A. No. Both AWEC and CUB have other witnesses that will address revenue requirement
5 and other issues in PacifiCorp's rate filing. Any issue that I did not address should not be
6 read as an endorsement of, or agreement with, PacifiCorp's position on such issues.

7 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS AND CONCLUSIONS**
8 **ON RETURN ON EQUITY.**

9 A. I recommend the Public Utility Commission of Oregon ("Commission" or "PUC") award
10 a return on common equity in the range of 8.80% to 9.70%, with a midpoint of 9.25%.
11 This return on equity reflects PacifiCorp's current market cost of equity. I recommend
12 the Commission approve a return on equity that reflects fair compensation for
13 PacifiCorp's level of investment risk, and impose tariff rate charges on customers that are
14 no more expensive than necessary to fairly compensate the Company and maintain its
15 financial integrity and credit standing.

16 I propose adjustments to the Company's proposed ratemaking capital structure
17 that reduce the common equity from the Company's proposed 52.25% common equity
18 down to a 50.95% common equity ratio.

19 My proposed adjustments to the capital structure reflect the Company's obligation
20 to operate efficiently and economically, and maintain a capital structure that has a
21 reasonable and balanced mix of debt and equity so as to maintain its strong investment
22 grade bond rating, but do so at the lowest possible cost to customers.

23 The objective of my recommended capital structure is to develop a ratemaking
24 capital structure that is no more expensive than necessary to support the Company's bond
25 rating. This is particularly important during the economic distress currently faced by all

1 stakeholders in PacifiCorp's service territory. The proposed capital structure adjustment
2 reflects a reasonable and appropriate balance between the interests of PacifiCorp and its
3 ratepayers that ensures that rates are no higher than necessary to support PacifiCorp's
4 current investment grade bond rating, its financial integrity, and access to external capital.

5 **Q. ARE YOU RECOMMENDING AN OVERALL RATE OF RETURN FOR**
6 **PACIFICORP IN THIS CASE?**

7 A. Yes. As shown on my Exhibit AWEC-CUB/102, my recommended overall rate of return
8 is 6.86%, which reflects my recommended return on equity of 9.25% and my proposed
9 capital structure.

10 **Q. PLEASE DESCRIBE HOW YOUR TESTIMONY IS ORGANIZED.**

11 A. First, I provide observable evidence on current market costs and regulatory support for
12 financial integrity, credit standing, and access to capital. Second, I estimate PacifiCorp's
13 current market cost of equity using market-based cost of capital models to estimate the
14 current market-required return on equity that investors demand to assume the investment
15 risk similar to PacifiCorp. Third, I rely on my recommended rate of return and proposed
16 capital structure to develop credit metrics, which demonstrate that my recommended rate
17 of return for PacifiCorp will support its investment grade bond rating, and support its
18 access to capital. Finally, I respond to PacifiCorp witness Ann Bulkley's recommended
19 return on equity. Ms. Bulkley recommend a return on equity of 9.80%. I comment on
20 her analysis and show that her recommended return on equity substantially exceeds the
21 current market cost of capital for companies with investment risk similar to that of
22 PacifiCorp. Ms. Bulkley's recommended return on equity unnecessarily inflates
23 PacifiCorp's claimed revenue deficiency, and would increase rates beyond a just and
24 reasonable level.

1 **II. RATE OF RETURN**

2 **II.A. Current Capital Market**

3 **Q. DO YOU BELIEVE MARKET-BASED MODELS PRODUCE REASONABLE**
4 **ESTIMATES OF PACIFICORP'S CURRENT COST OF EQUITY?**

5 A. Yes. I believe the application of a Discounted Cash Flow ("DCF") analysis, risk
6 premium, and Capital Asset Pricing Model ("CAPM") produces reasonable and accurate
7 estimates of the current market cost of equity for PacifiCorp and other utility companies
8 of similar investment risk.

9 **Q. PLEASE EXPLAIN WHY YOU BELIEVE THE DCF MODELS PRODUCE A**
10 **REASONABLE ESTIMATE OF PACIFICORP'S MARKET COST OF COMMON**
11 **EQUITY.**

12 A. The DCF model is producing an economically logical estimate of the current market cost
13 of equity and a return that is comparable with observable returns in alternative
14 investments of comparable risk. The DCF model sums the observable dividend yield on
15 utility stocks and then adds to that an estimate of expected growth. These two
16 components yield DCF returns that are comparable to alternative investments, and, thus,
17 reasonably reflect the current market cost of capital for PacifiCorp.

18 Specifically, the 2021 dividend yield of electric (3.53%) and gas (3.40%) utility
19 stock was higher than the yield on "A" rated utility bonds in 2021 (3.10%).^{1/} During the
20 study period I used to measure PacifiCorp's current market cost of equity, the dividend
21 yield for the proxy group is approximately 3.4% to 3.5%, and is below the "A" rated
22 utility bond yield of 3.83% contemporary time period.^{2/} As outlined on my Exhibit
23 AWEC/CUB/103, Gorman/Page 4 and Gorman/Page 12, the market valuations of utility

^{1/} Exhibit AWEC-CUB/103, Gorman/Page 4 and Gorman/Page 12.

^{2/} Exhibit AWEC-CUB/106 and Exhibit AWEC-CUB/116, Gorman/Page 1.

1 stocks and utility bonds are returning to a more normal level relative to historical
2 averages and the utility bond yield now has a positive spread to utility stock yields. For
3 this reason, the utility stock yield component of the DCF model reflects economically
4 logical valuations in comparison to utility bond yields, and also indicates movement back
5 to a more normalized level of capital valuations of utility stocks and bonds.

6 The growth component of the DCF return relates to earnings and stock growth
7 over time. The growth outlook for utility stocks is not depressed generally, but rather
8 provides a robust outlook for dividends and stock price growth. The DCF return is not
9 understated due to the DCF growth rate component.

10 Also, the annual growth in dividends for utilities over the last 16 years has been
11 approximately 4.09% for electric and 4.67% for gas.^{3/} In my constant growth DCF study
12 presented below, the current three- to five-year forward projected growth rate for electric
13 utilities is 6.13%, which is considerably higher than the historical growth rate for the
14 electric and gas industry. Also, utility earnings growth is expected to be considerably
15 higher than the growth of the U.S. GDP, which generally is regarded as the maximum
16 sustainable growth of the market in general. Going forward, long-term sustainable
17 growth for equity investments is around 4.10%, as described above. Based on these
18 factors, the growth rate component of a regulated utility DCF return is quite robust and
19 produces a highly competitive DCF return estimate.

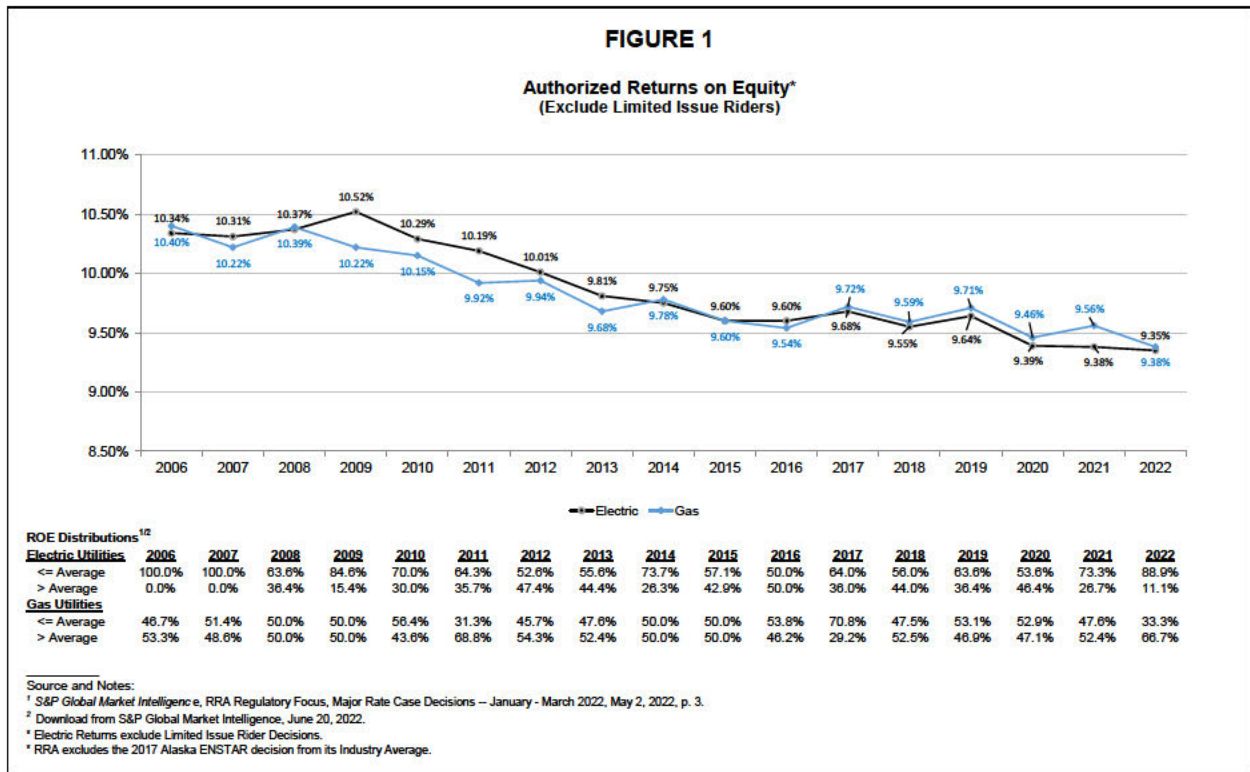
20 For these reasons, both dividend yield and growth components of a utility DCF
21 indicate an economically logical return estimate that is competitive with comparably
22 risky alternative investments.

^{3/} Exhibit AWEC-CUB/103, Gorman/Page 5 and Gorman/Page 13.

1 **II.B. Utility Industry Authorized Returns on Equity,**
2 **Access to Capital, and Credit Strength**

3 **Q. PLEASE DESCRIBE THE OBSERVABLE EVIDENCE ON TRENDS IN**
4 **AUTHORIZED RETURNS ON EQUITY FOR REGULATED UTILITIES.**

5 A. As illustrated in Figure 1 below, national average authorized returns on equity for both
6 electric and gas utilities have ranged between 9.35% to 9.72% for the last eight years
7 (2014-2022 to date).



8 As also indicated in Figure 1 above, in 2022 to date, the authorized returns on
9 equity have been less than 9.35% and 9.38% for electric and gas utilities, respectively,
10 and a significant majority of electric decisions have been below the average. This
11 indicates not only a robust assessment of 9.35% as the authorized return on equity in
12 2023, but the distribution of returns are largely at or below this level.

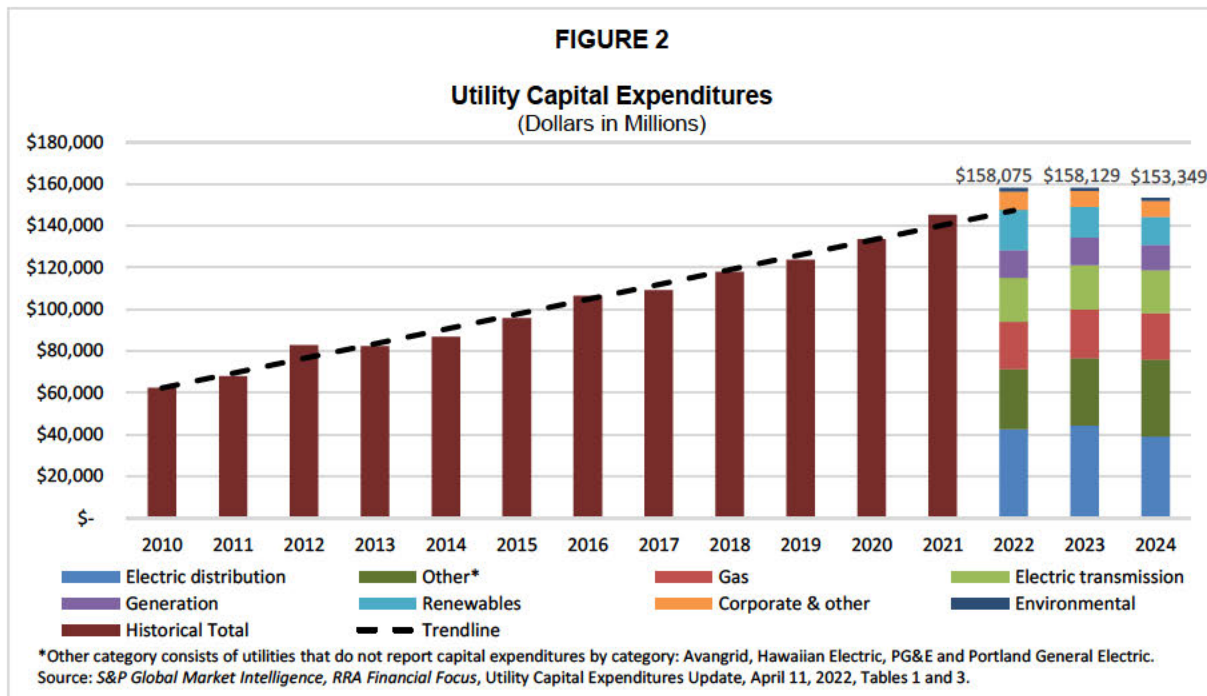
1 **Q. HAVE UTILITIES BEEN ABLE TO ACCESS EXTERNAL CAPITAL TO**
2 **SUPPORT CAPITAL EXPENDITURE PROGRAMS?**

3 A. Yes. In its April 11, 2022 Utility Capital Expenditures Update report, *RRA Financial*
4 *Focus*, a division of S&P Global Market Intelligence, made several relevant comments
5 about utility investments generally:

- 6 • Projected 2022 capital expenditures for the 47 energy utilities included in
7 the Regulatory Research Associates representative sample of the publicly
8 traded U.S.-based utility universe currently exceeds \$154.2 billion, well
9 above the \$131.8 billion of actual investment spent in 2021 by the same
10 companies. Much of the increased outlays are driven by federal support
11 for infrastructure investment that was approved by congress and signed
12 into law late in 2021.
- 13 • Investment across these 47 energy utilities may rise 15% or more by the
14 close of 2022.2021 is on track to be another record year for energy
15 infrastructure investments. Assuming current projections hold, investment
16 across the RRA-covered energy utility industry may rise by 9% or more
17 by the close of this year.
- 18 • Across the small investor-owned electric utility industry, total capex is
19 forecast to increase 7.3% in 2022 to approximately \$3.9 billion. The
20 segment experienced modest growth of 4.9% in 2021.
- 21 • 2021 energy utility capital expenditures marked a record high, about
22 1.3% above the \$130.1 billion invested in 2020. Investment in 2021
23 might have been even higher without the multiple supply chain issues
24 associated with the ongoing coronavirus pandemic.^{4/}

25 As shown in Figure 2 below, capital expenditures for electric and natural gas
26 utilities have increased considerably over the period 2021 into 2022, and the forecasted
27 capital expenditures remain elevated through the end of 2022, albeit falling below current
28 levels in 2024.

^{4/} *S&P Global Market Intelligence, RRA Financial Focus: “Utility Capital Expenditures Update,”*
April 11, 2022, at 5.



1 As outlined in Figure 2 above, and in the comments made by *RRA S&P Global*
2 *Market Intelligence*, capital investments for the utility industry continue to stay at
3 elevated levels, and these capital expenditures are expected to fuel utilities’ profit growth
4 into the foreseeable future. This is clear evidence that the capital investments are
5 enhancing shareholder value, and are attracting both equity and debt capital to the utility
6 industry in a manner that allows for these elevated capital investments. While capital
7 markets embrace these profit-driven capital investments, regulatory commissions also
8 must be careful to maintain reasonable prices and tariff terms and conditions to protect
9 customers’ need for reliable utility service but at competitive tariff prices.

10 **Q. IS THERE EVIDENCE OF ROBUST VALUATIONS OF REGULATED UTILITY**
11 **EQUITY SECURITIES?**

12 A. Yes. Robust valuations are an indication that utilities can sell securities at high prices,
13 which is a strong indication that they can access equity capital under reasonable terms
14 and conditions, and at relatively low cost. As shown on my Exhibit AWEC-CUB/103,

1 utility valuation metrics show robust valuation of utility securities more recently
2 compared to the historical period extending back to 2002. Specifically, this exhibit
3 shows *The Value Line Investment Survey* (“*Value Line*”) electric utility industry price-to-
4 earnings ratio of 20.96x, compared to a 20-year average price-to-earnings ratio of around
5 17.19x.^{5/} The current price-to-earnings ratio for gas utilities is 18.03x relative to the 16-
6 year average price-to-earnings ratio of 18.36x.^{6/} The market price-to-cash flow for
7 electric utilities is currently 10.33x, compared to the 20-year average of 7.58x.^{7/} The
8 market price-to-cash flow for gas utilities is currently 9.50x, compared to the 16-year
9 average of 9.59x.^{8/} Finally, the current market-to-book ratio for the electric utility
10 industry is 2.15x, compared to the 17-year average of 1.74x.^{9/} The current market-to-
11 book ratio for the gas utility industry is 1.73x, which is comparable to the 16-year
12 average of 1.82x.^{10/} The utility industry exhibits strong valuations in the marketplace,
13 which is a clear indication that utilities have access to external capital markets under
14 favorable prices.

15 **Q. PLEASE DESCRIBE UTILITY STOCK PRICE PERFORMANCE OVER THE**
16 **LAST SEVERAL YEARS.**

17 A. As shown in Figure 3 below, S&P Global Market Intelligence (“MI”) has recorded utility
18 stock price performance compared to the market. The industry’s stock performance data
19 from June 2021 through June 2022 shows that the S&P 500 Utilities followed the market
20 through downturns and recoveries. However, utility investments have been less volatile

^{5/} Exhibit AWEC-CUB/103, Gorman/Page 1.

^{6/} *Id.*, Gorman/Page 11.

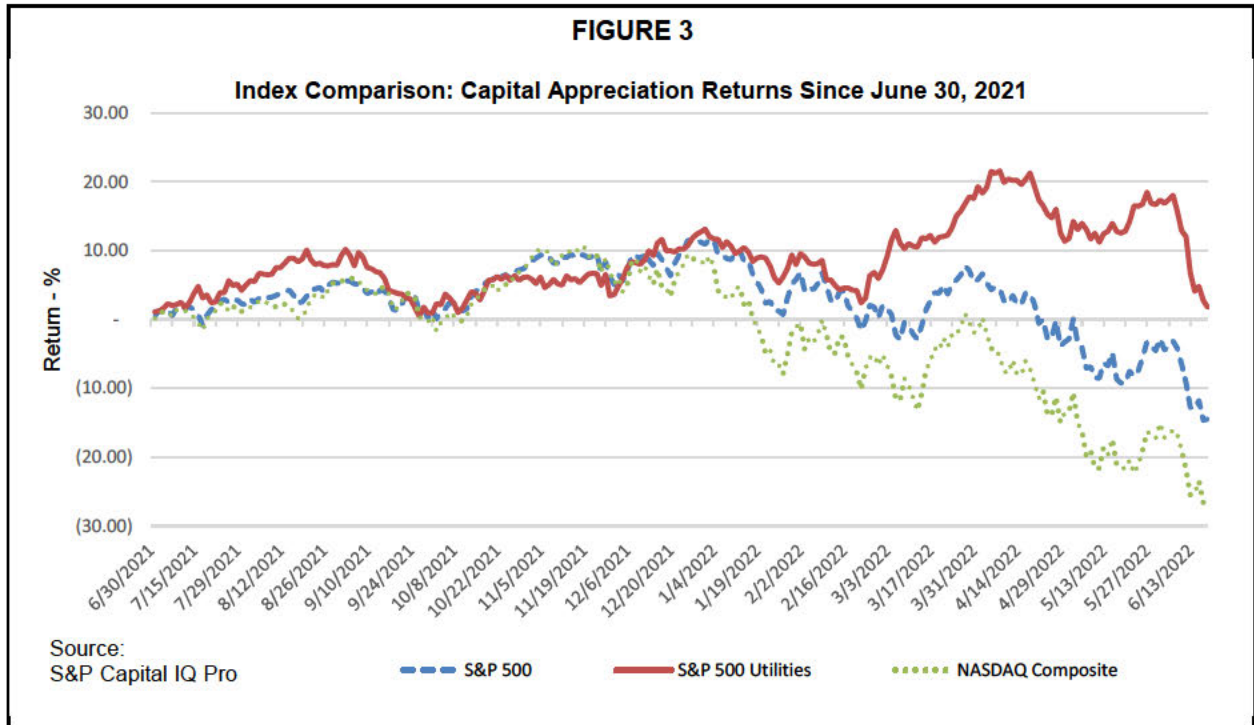
^{7/} *Id.*, Gorman/Page 2.

^{8/} *Id.*, Gorman/Page 11.

^{9/} *Id.*, Gorman/Page 3.

^{10/} *Id.*, Gorman/Page 11.

1 during extreme market downturns. This more stable price performance for utilities
 2 supports my conclusion that market participants regard utility stock sectors as a
 3 moderate- to low-risk investment option.



4 While utility stocks have not exhibited the same volatility as the S&P 500, stock
 5 prices have remained strong, relative to the market in general, and support the utilities’
 6 access to equity capital markets under reasonable terms and prices.

7 **Q. HOW SHOULD THE COMMISSION USE THIS MARKET INFORMATION IN**
 8 **ASSESSING A FAIR RETURN FOR PACIFICORP?**

9 A. Observable market evidence is quite clear that capital market costs are near historically
 10 low levels. While authorized returns on equity have fallen to the mid-9% range, utilities
 11 continue to have access to large amounts of external capital even as they are funding
 12 large capital programs. Furthermore, utilities’ investment-grade credit ratings are stable
 13 and have improved due, in part, to supportive regulatory treatment. The Commission

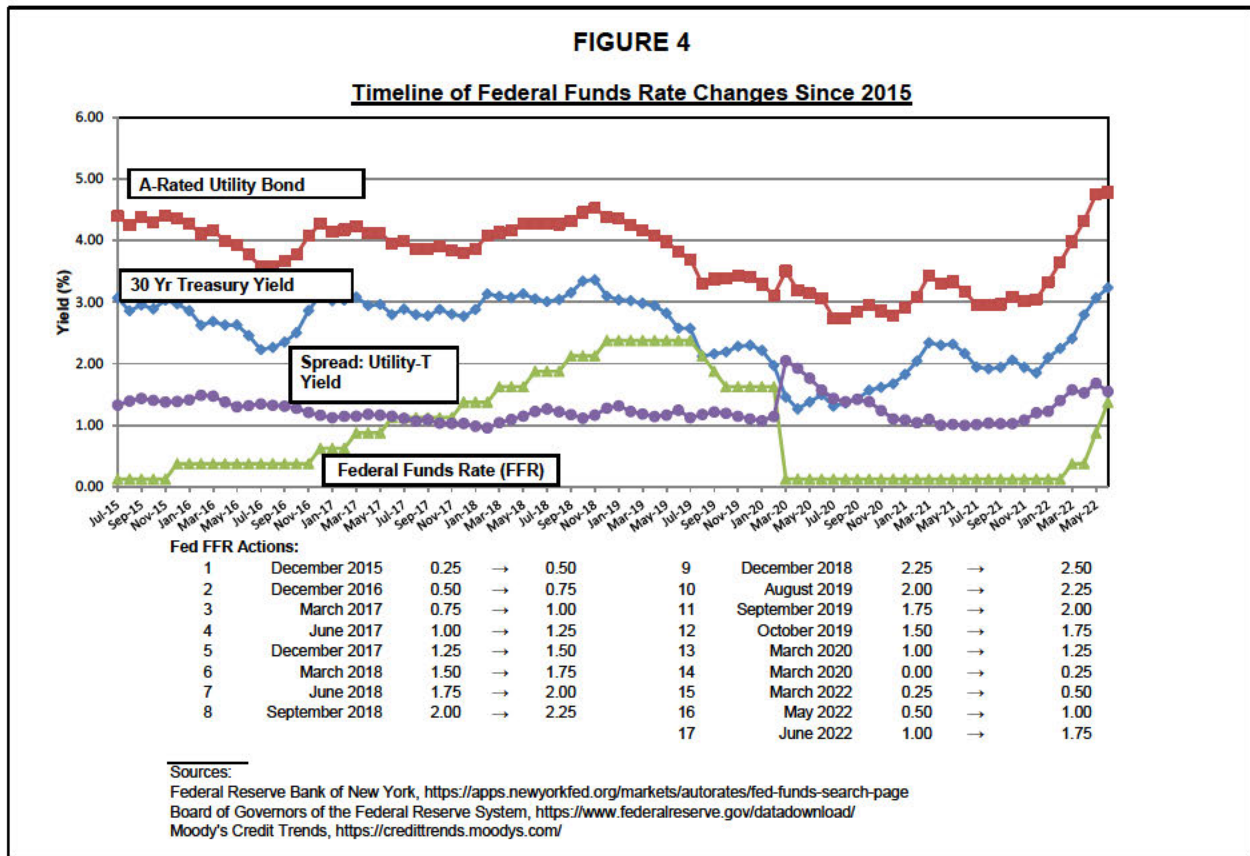
1 should carefully weigh all this important observable market evidence in assessing a fair
2 return on equity for PacifiCorp.

3 **II.C. Federal Reserve's Impact on Cost of Capital**

4 **Q. ARE THE FEDERAL RESERVE'S MONETARY OPEN MARKET**
5 **COMMITTEE ACTIONS KNOWN TO THE MARKET PARTICIPANTS, AND IS**
6 **IT REASONABLE TO BELIEVE THEY ARE REFLECTED IN THE MARKET'S**
7 **VALUATION OF BOTH DEBT AND EQUITY SECURITIES?**

8 A. Yes. The Federal Reserve has been quite transparent on its efforts to support the
9 economy to achieve maximum employment, and to manage long-term inflation to around
10 a 2% level. The Federal Reserve has implemented procedures to support the economy's
11 efforts to achieve these policy objectives. Specifically, in March 2020 the Federal
12 Reserve lowered the Federal Overnight Rate for securities, and has engaged once again in
13 a Quantitative Easing program where the Federal Reserve is buying on a monthly basis
14 Treasury and mortgage-backed securities in order to moderate the demand in the
15 marketplaces and support the economy. More recently, the Federal Reserve has
16 increased the federal funds rate on three occasions, in March, May, and June 2022. The
17 sum of the three increases raised the federal funds rate by one and a half percentage
18 points. All of these actions are known by market participants because the Federal
19 Reserve is transparent in its monetary policies.

20 An assessment of the market's reaction to the Federal Reserve's actions on the
21 Federal Funds Rate is shown below in Figure 4.



1 As shown in the figure above, the Federal Reserve’s recent action to increase the
2 Federal Funds Rate now at a 1.50% to 1.75% range represents a movement back to the
3 level of Federal Funds Rate that occurred prior to the economic effects of the worldwide
4 pandemic starting around March/April of 2020.

5 **Q. HAS THE FEDERAL RESERVE MADE RECENT COMMENTS CONCERNING**
6 **MONETARY POLICY AND THE POTENTIAL IMPACT ON INTEREST**
7 **RATES?**

8 **A.** Yes. The Federal Reserve’s monetary policy changed as a result of the COVID-19
9 pandemic due to the significant impact the pandemic had on the U.S. economy. The
10 initial stages of the COVID-19 pandemic resulted in significant negative U.S. GDP
11 growth and a significant increase in unemployment. The impact on U.S. GDP real
12 growth and unemployment levels, however, quickly reversed as the economy recovered.

1 Economists' projections anticipate U.S. economic growth to stay robust through 2023,
2 and unemployment levels to stay relatively low. These economic factors influenced the
3 Federal Reserve monetary policy actions throughout this time period. More recently, the
4 Federal Reserve announced a modification of its policy triggered by the significant
5 improvement in strengthening the economy. The Federal Reserve limited reinvestment in
6 mortgage-backed securities relative to its balance sheet holdings during the months of
7 June and July to only receipt of principal payments.

8 In the most recent summary of consensus economists' outlooks, *Blue Chip*
9 *Financial Forecasts* opined that inflation can moderate without a recession,
10 acknowledging that the Federal Reserve is expected to invoke larger rate increases, and
11 opined that long-term rates already up are expected to rise moderately more.^{11/}

12 **Q. DO INDEPENDENT ECONOMISTS' OUTLOOKS FOR FUTURE INTEREST**
13 **RATES ALIGN WITH THE FED MONETARY POLICY?**

14 A. Yes. Independent economists expect the current low capital costs to prevail over at least
15 the intermediate term. This is illustrated in projections for both short- and long-term
16 changes in interest rates. Further, there is a clear trend in forecasted changes in interest
17 rates over time, indicating that capital market participants are becoming more
18 comfortable with today's low-cost capital market environment and expect it to prevail
19 over at least the intermediate future.

20 For example, short-term projections suggest that the market expects capital
21 market costs to remain relatively low. Table 1 below shows capital cost projections over
22 the next two years, and demonstrates that projected Treasury bond yields are not expected
23 to increase significantly over this projection period.

^{11/} *Blue Chip Financial Forecasts*, June 1, 2022.

TABLE 1

Blue Chip Financial Forecasts
Projected Federal Funds Rate, 30-Year Treasury Bond Yields, and GDP Price Index

<u>Publication Date</u>	<u>3Q</u> <u>2021</u>	<u>4Q</u> <u>2021</u>	<u>1Q</u> <u>2022</u>	<u>2Q</u> <u>2022</u>	<u>3Q</u> <u>2022</u>	<u>4Q</u> <u>2022</u>	<u>1Q</u> <u>2023</u>	<u>2Q</u> <u>2023</u>	<u>3Q</u> <u>2023</u>
<u>Federal Funds Rate</u>									
Oct-21	0.1	0.1	0.1	0.1	0.1	0.2	0.3		
Nov-21	0.1	0.1	0.1	0.1	0.1	0.3	0.4		
Dec-21	0.1	0.1	0.1	0.1	0.3	0.4	0.6		
Jan-22		0.1	0.1	0.3	0.5	0.7	0.9	1.1	
Feb-22		0.1	0.2	0.5	0.8	1.0	1.3	1.5	
Mar-22		0.1	0.2	0.6	1.0	1.3	1.6	1.8	
Apr-22			0.1	0.8	1.4	1.8	2.2	2.4	2.6
May-22			0.1	1.0	1.7	2.2	2.6	2.9	3.0
Jun-22			0.1	1.0	1.9	2.4	2.8	3.0	3.1
<u>T-Bond, 30 yr.</u>									
Oct-21	1.9	2.2	2.3	2.4	2.5	2.6	2.7		
Nov-21	1.9	2.2	2.3	2.4	2.5	2.6	2.7		
Dec-21	1.9	2.1	2.2	2.3	2.5	2.6	2.7		
Jan-22		2.0	2.1	2.2	2.4	2.5	2.7	2.8	
Feb-22		2.0	2.2	2.3	2.5	2.6	2.7	2.8	
Mar-22		2.0	2.2	2.5	2.6	2.7	2.9	3.0	
Apr-22			2.3	2.6	2.8	3.0	3.2	3.3	3.3
May-22			2.3	2.9	3.1	3.2	3.4	3.5	3.5
Jun-22			2.3	3.0	3.3	3.4	3.5	3.6	3.6
<u>GDP Price Index</u>									
Oct-21	4.2	2.9	2.5	2.5	2.5	2.5	2.4		
Nov-21	5.7	3.4	2.7	2.6	2.5	2.4	2.3		
Dec-21	5.9	4.6	3.4	2.8	2.7	2.5	2.5		
Jan-22		4.6	3.7	3.1	2.8	2.6	2.5	2.5	
Feb-22		6.9	4.3	3.4	3.0	2.8	2.6	2.5	
Mar-22		7.1	4.8	3.8	3.1	2.8	2.6	2.5	
Apr-22			4.8	5.1	3.7	3.0	2.8	2.6	2.6
May-22			8.0	5.6	4.0	3.4	3.0	2.8	2.6
Jun-22			8.1	5.9	4.6	3.5	3.1	2.8	2.7

Source and Note:
Blue Chip Financial Forecasts, January 2021 through June 2022.
Actual Yields in Bold.

1 Further, the outlook for long-term interest rates in the intermediate to longer term
2 is also impacted by the current Federal Reserve actions and the expectation that
3 eventually the Federal Reserve’s monetary actions will return to more normal levels.
4 Long-term interest rate projections are illustrated in Table 2 below.

TABLE 2

30-Year Treasury Bond Yield Actual Vs. Projection

<u>Description</u>	<u>Actual</u>	<u>2-Year Projected*</u>	<u>5- to 10-Year Projected</u>
<u>2016</u>			
Q1	2.72%	3.67%	
Q2	2.64%	3.50%	4.3% - 4.6%
Q3	2.28%	3.20%	
Q4	2.82%	3.20%	4.2% - 4.5%
<u>2017</u>			
Q1	3.04%	3.70%	
Q2	2.91%	3.73%	4.3% - 4.5%
Q3	2.82%	3.66%	
Q4	2.82%	3.60%	4.1% - 4.3%
<u>2018</u>			
Q1	3.02%	3.63%	
Q2	3.09%	3.80%	4.2% - 4.4%
Q3	3.07%	3.73%	
Q4	3.27%	3.67%	3.9% - 4.2%
<u>2019</u>			
Q1	3.01%	3.50%	
Q2	2.78%	3.17%	3.6% - 3.8%
Q3	2.30%	2.70%	
Q4	2.30%	2.50%	3.2% - 3.7%
<u>2020</u>			
Q1	1.88%	2.57%	
Q2	1.38%	1.90%	3.0% - 3.8%
Q3	1.36%	1.87%	
Q4	1.62%	1.97%	2.8% - 3.6%
<u>2021</u>			
Q1	2.07%	2.23%	
Q2	2.26%	2.77%	3.5% - 3.9%
Q3	1.93%	2.63%	
Q4	1.95%	2.70%	3.4% - 3.8%
<u>2022</u>			
Q1	2.25%	2.87%	

Source and Note:

Blue Chip Financial Forecasts, January 2015 through April 2022.

*Average of all 3 reports in Quarter.

1 As outlined in Table 2 above, the outlook for increases in interest rates has
2 jumped more recently relative to 2020, but is still relatively modest compared to time
3 periods prior to the beginning of the worldwide pandemic. Indeed, today's relatively low
4 capital market costs are expected to prevail at least in the short-term out over the next
5 five to ten years. While there may be some upward movement in cost of capital, that
6 upward movement is not expected to be significant. Importantly, the U.S. economy has
7 largely recovered from the severe effects of the COVID-19 pandemic experienced in
8 2020. Capital markets continues to perform in a rational and economically logical
9 manner at lower capital costs for safe investment sectors such as the utility industry.

10 Moreover, while economists are projecting a modest increase in interest rates
11 relative to those published in the past, these projections of increases in interest rates are,
12 at best, uncertain. But more importantly, the projected increases relative to the past are
13 relatively modest, and demonstrate that PacifiCorp's proposal to increase its authorized
14 return on equity in this case to 9.50% is simply not reflective of current market capital
15 costs.

16 **II.D. Market Sentiments and Utility Industry Outlook**

17 **Q. PLEASE DESCRIBE THE CREDIT RATING OUTLOOK FOR REGULATED**
18 **UTILITIES.**

19 A. The global economy has faced the extraordinary challenges of the novel Coronavirus,
20 which led to nearly a complete shutdown of the global economy. This unprecedented
21 event has impacted all sectors and capital markets. However, regulated utilities have
22 generally performed well during the Covid-19 pandemic with consistent access to capital
23 markets.

1 Moody's views the regulatory environment for the US utility companies to be
2 supportive and maintains a stable outlook for the industry. Specifically, Moody's states:

3 We are maintaining a stable outlook for the US regulated utilities sector
4 based on our expectations that the regulatory environment will remain
5 supportive of rate base growth and infrastructure investments and in
6 mitigating the impact of extreme weather events. We anticipate that the
7 regulated utility sector will remain resilient and benefit from the
8 continuing US economic recovery.

9 » **Regulatory environment to remain supportive.** We expect average
10 aggregate rate base growth of around 6% in 2022 amid a supportive
11 regulatory environment. Rate case outcomes and other regulatory actions
12 have been remarkably consistent with our expectations over the past few
13 years, despite extreme weather events and economic disruptions caused by
14 the coronavirus pandemic.

15 » **FFO-to-debt will be steady at current levels.** We estimate that the
16 sector's aggregate industry funds from operations (FFO) to debt ratio will
17 range between 14% and 15%, consistent with our projections last year for
18 2021. Our FFO-to-debt forecast incorporates our expectations for
19 improving economic conditions in the US.

20 » **Capital expenditures will remain high.** With a heightened focus on
21 reducing carbon exposure, utilities continue to invest in new renewable
22 generation capacity and to make up for accelerated coal-fired power plant
23 retirements as well as to bolster transmission and distribution networks.
24 Also, the frequency and severity of extreme weather events in 2021 are
25 prompting many utilities to invest more in hardening their systems and
26 enhancing the resilience of their operations amid rising physical climate
27 risk.^{12/}

28 Similarly, Fitch states the following:

29 Fitch Ratings-New York-02 December 2021: The sector outlook for North
30 American Utilities, Power and Gas in 2022 is neutral, according to Fitch
31 Ratings.

32 Approximately 81% of rated entities in the sector have Stable Rating
33 Outlooks based on an expectation that retail electricity sales will continue
34 to strengthen and the regulatory environment will remain supportive.

^{12/} *Moody's Investors Service Sector Comment: "2022 Outlook Stable On Sustained Regulatory Support for Robust Investment Cycle,"* November 4, 2021 at 1 (emphasis added).

1 Key rating concerns include high natural gas prices, which will increase
2 the fuel and purchased power costs for utilities and will be directly passed
3 through to customers. Elevated capex, recovery of storm restoration costs
4 and recovery of deferred coronavirus expenses will compound the
5 pressure on customer bills. Declining O&M costs due to cost control
6 initiatives and the ongoing energy transition to lower cost renewables
7 should provide some offset.

8 Fitch expects median FFO leverage for the sector to modestly improve to
9 4.5x in 2022 as utilities see a rebound in FFO from growth investments
10 and recovery in retail sales. Parent holding companies will likely continue
11 to look for asset monetization opportunities to supplement or replace
12 equity needs to fund high capex. However, the improvement in leverage
13 may not be enough to reverse the negative ratings trend for utility parent
14 holding companies.

15 Fitch expects liquidity of regulated utilities and parent holding companies
16 to remain strong. The companies maintain large credit lines and benefit
17 from unfettered access to capital markets. For competitive generators,
18 robust FCF generation supports liquidity.^{13/}

19 S&P currently has a negative outlook for the regulated utility industry, because utility
20 companies are operating with minimum financial cushion from their downgrade
21 thresholds and their exposure to environmental, social and governance risk. Specifically,
22 S&P states the following:

23 **Key Takeaways**

- 24 - For the second consecutive year rating downgrades outpaced upgrades
25 for the investor-owned North American regulated utility industry, causing
26 the median rating on the industry to fall to the 'BBB' category.
27 - During 2021, credit quality was primarily pressured by weak financial
28 measures and Environmental, Social, and Governance (ESG) credit risks.
29 We expect that these risks will continue to pressure the credit quality of
30 the industry in 2022.
31 - Our outlook on the investor-owned North American regulated utility
32 industry remains negative. We believe that 2022 could be the third
33 consecutive year that downgrades outpace upgrades.
34 - Recently, several new credit risks have emerged, including inflation,
35 higher interest rates, and rising commodity prices. Persistent pressure

^{13/} *Fitch Ratings*: “Neutral Outlook for North American Utilities, Power & Gas in 2022,” December 9, 2021 at 1-2. (emphasis added).

1 from any of these risks would likely lead to a further weakening of the
2 industry's credit quality in 2022.

3 * * *

4 **What's Behind This Fundamental Weakening Of Credit Quality?**

5 Utility cash flows tend to be more stable and predictable than most other
6 industries. Strategically, an increasing percentage of the industry has been
7 managing their financial measures with only minimal financial cushion
8 from their downgrade threshold. While this strategy of limiting excess
9 credit capacity works well under ordinary conditions, when unexpected
10 risks occur or base case assumptions deviate from expectations, the utility
11 can become susceptible to a weakening of credit quality. This has been
12 one of the primary drivers of the industry's weakening of credit quality
13 over the past two years.

14 * * *

15 **ESG Credit Risks**

16 During 2020 and 2021 the industry credit quality was constrained by
17 many ESG-related credit risks. Unexpectedly, the industry faced several
18 governance-related credit risks in 2020. We view these governance events
19 as isolated incidents and do not believe that they will have broader
20 implications for the larger utility industry. However, we do expect that
21 physical and environmental risks will continue to constrain the industry's
22 credit quality. Wildfires, severe winter storms, hurricanes, and tornadoes
23 lead to higher costs that are either partially disallowed by regulators or
24 are deferred for future recovery. Similarly, higher environmental costs
25 can also result in higher costs that are either partially disallowed by
26 regulators or are deferred for future recovery. Either outcome for physical
27 and environmental risks typically results in weaker financial measures
28 until the utility fully recovers such costs from customers. Because of
29 climate change, we believe that these risks will continue to negatively
30 affect credit quality in 2022.^{14/}

31 **Q. HOW IS THIS OBSERVABLE MARKET DATA USED IN FORMING YOUR**
32 **RECOMMENDED RETURN ON EQUITY AND OVERALL RATE OF RETURN**
33 **FOR PACIFICORP?**

34 **A.** Generally, authorized returns on equity, credit standing, and access to capital have been
35 quite robust for utilities over the last several years. The COVID-19 pandemic has created

^{14/} *S&P Global Ratings*: "For the First Time Ever, the Median Investor-Owned Utility Ratings Falls to the 'BBB' Category," January 20, 2022, at 1, 6 and 10. (emphasis added).

1 challenges for the U.S. economy as a whole, including utility companies. However, the
2 U.S. economy has largely recovered and utilities are expected to weather the economic
3 downturn caused by the pandemic, and their financial strength will be restored as the
4 economy recovers. In the meantime, it is critical that the Commission ensure that rates
5 are increased no more than necessary to provide fair compensation and maintain financial
6 integrity, and be especially concerned about rate impacts on the service area economies
7 that are severely constrained due to current economic conditions.

8 **II.E. PacifiCorp's Investment Risk**

9 **Q. PLEASE DESCRIBE THE MARKET'S ASSESSMENT OF THE INVESTMENT**
10 **RISK OF PACIFICORP.**

11 A. The market's assessment of PacifiCorp's investment risk is described by credit rating
12 analysts' reports. PacifiCorp's current corporate bond ratings from S&P and Moody's
13 are A and A3, respectively.^{15/} PacifiCorp's outlook is "Stable" from S&P, and "Stable"
14 from Moody's.

15 Specifically, S&P states:

16 **Outlook: Stable**

17 The stable outlook on PacifiCorp reflects our stable outlook on parent
18 Berkshire Hathaway Energy Co. (BHE). The stable outlook on BHE over
19 the next 24 months reflects our expectation that management will
20 effectively integrate the acquired gas storage and transmission businesses
21 into BHE's existing energy operations. At the same time, management
22 will continue to focus on its core utility operations and reach constructive
23 regulatory outcomes supporting the business risk profile. As a result,
24 under our base-case forecast, we expect funds from operations (FFO) to
25 debt of 14%-16% in 2022.

26 * * *

^{15/} PacifiCorp/300, Bulkley/Page 26.

1 **Business Risk: Excellent**

2 Our assessment of PacifiCorp's business risk profile incorporates its
3 regulated vertically integrated electric operations under generally stable
4 and transparent regulatory frameworks. Additionally, the utility
5 demonstrates geographical and regulatory diversity with its operations in
6 six states, serving a larger customer base. Over 65% of customers are in
7 PacifiCorp's two primary markets, Utah and Oregon. Moreover, the
8 predominance of residential and commercial customers limits
9 susceptibility to economic cyclicalities and provides stable cash flows.

10 The company has a well-diversified generation supply portfolio that
11 consists of coal (about 45%), gas (about 25%), hydroelectric (about 10%),
12 and wind (about 20%). Our assessment also incorporates the utility's
13 compliance with environmental rules that affect its coal plant fleet. The
14 company has been retiring coal plants and investing in renewable
15 generation to reduce its portfolio's carbon emissions. From a regulatory
16 standpoint, PacifiCorp operates under generally constructive regulatory
17 environments that offer opportunities to recover capital and operating
18 costs with minimal regulatory lag. The constructive mechanisms provided
19 by regulators vary by state and include decoupling, fuel cost recovery
20 mechanisms, and renewable adjustment clauses. These mechanisms
21 support the company's operating cash flows and allow it to achieve
22 returns close to its authorized levels.

23 **Financial Risk: Significant**

24 Under our base-case scenario, we expect PacifiCorp will generate
25 adjusted FFO to total debt of 18%-21%, around the midpoint of the
26 significant financial profile range. We expect discretionary cash flow to
27 be negative through 2022 as the company accelerates its capital spending
28 on renewable generation. Additionally, we forecast that the company will
29 stay in the mid-to-high-4x range for FFO to cash interest while
30 deleveraging, indicated by a moderately decreasing debt to EBITDA in
31 the mid-to-low-4x area heading into 2023. Our base-case assumptions
32 include modest sales volume growth, elevated capital spending,
33 associated regulatory cost recovery, and bonus depreciation because of
34 new wind generation.

35 We assess PacifiCorp's financial risk under our medial volatility financial
36 benchmarks, reflecting its lower-risk regulated utility operations and
37 effective management of regulatory risk. These benchmarks are more
38 relaxed than those used for a typical corporate issuer. ^{16/}

^{16/} Standard & Poor's RatingsDirect®: "PacifiCorp," April 21, 2022.

1 **II.F. PacifiCorp's Proposed Capital Structure**

2 **Q. WHAT IS PACIFICORP'S PROPOSED CAPITAL STRUCTURE?**

3 **A.** PacifiCorp's proposed capital structure is shown below in Table 3. The Company's
4 projected capital structure ending on December 31, 2023 is sponsored by PacifiCorp
5 witness Ms. Nikki Kobliha.

<u>Description</u>	<u>Weight</u>
Long-Term Debt	47.74%
Preferred Stock	0.01%
Common Equity	<u>52.25%</u>
Total	100.00%

Source: PAC200, Kobliha /3.

6 PacifiCorp's capital structure is based on "an average of the five quarter-ending
7 balances spanning the 12-month period ending December 31, 2023.

8 **Q. IS THE COMPANY'S PROPOSED CAPITAL STRUCTURE REASONABLE?**

9 **A.** No. The Company's proposed projected capital structure for the forecasted test year
10 ending December 31, 2023 reflects an unnecessary increase in the common equity ratio.
11 The Company's historical capital structure has been around 51% common equity and
12 49% long-term debt, which has supported the Company's credit rating as "Stable" by
13 both Standard & Poor's and Moody's. Unnecessarily increasing the common equity ratio
14 unjustifiably increases the Company's cost of service, and requires setting rates above a
15 just and reasonable level.

1 **Q. HOW DID PACIFICORP SUPPORT ITS PROPOSED RATEMAKING CAPITAL**
2 **STRUCTURE IN THIS PROCEEDING?**

3 A. PacifiCorp witness Nikki Kobliha outlines the Company's development of a proposed
4 ratemaking capital structure in her testimony. Ms. Kobliha states that the Company's
5 proposed ratemaking capital structure including a 52.25% common equity implies a
6 common equity ratio considered by credit rating analysts of 50.21%, implying that the
7 proposed ratemaking capital structure is designed to support its ratemaking capital
8 structure.

9 **Q. DOES THE COMPANY'S PROPOSED RATEMAKING CAPITAL STRUCTURE**
10 **REFLECT A REASONABLE MIX OF DEBT AND EQUITY CAPITAL?**

11 A. No. I agree with the Company that a ratemaking capital structure should reflect a
12 reasonable mix of debt and equity capital that supports the utility's credit rating but
13 should do so at the most reasonable cost to customers possible. The Company's
14 proposed ratemaking capital structure reflects an unjustified increase in common equity
15 ratio of long-term capital and is more expensive than necessary to support the Company's
16 credit rating.

17 The Company's common equity ratio reflecting S&P's credit rating agency's
18 consideration of on-balance sheet and off-balance sheet debt obligations is shown below
19 in Table 4.

<u>Year</u>	<u>Debt</u> <u>Ratio</u>	<u>Equity</u> <u>Ratio</u>
2017	50.0%	50.0%
2018	48.8%	51.2%
2019	50.5%	49.5%
2020	51.0%	49.0%
2021	47.1%	52.9%

Source: S&P Capital IQ.

1 As shown in the table above, the equity ratio and adjusted debt ratio considered
2 by S&P in its credit rating of PacifiCorp was around 51% in 2019 and 2020, and
3 inexplicably PacifiCorp reduced that debt ratio down to only 47% in 2021. The equity
4 ratio and related adjusted debt ratio in 2019 and 2020 were adequate to support
5 PacifiCorp's current investment grade bond rating, and the Company's efforts to decrease
6 the amount of debt and increase the common equity ratio are simply not cost unjustified.

7 **Q. HOW DID YOU DEVELOP PACIFICORP'S FINANCIAL CAPITAL**
8 **STRUCTURE WEIGHTS BASED ON ITS PROPOSED RATEMAKING**
9 **CAPITAL STRUCTURE IN THIS PROCEEDING?**

10 **A.** I relied on the same methodology proposed by PacifiCorp witness Ms. Koblaha at
11 page 21 of her testimony, however I target an S&P ratemaking common equity ratio of
12 49% which reflects the Company's actual ratemaking capital structure in 2019 and 2020.
13 In 2021, the Company appears to unnecessarily be increasing its common equity ratio of
14 total capital. Reflecting approximately \$850 million of additional debt including
15 off-balance sheet obligations and debt not included in the ratemaking capital structure,

1 and using Table 8 Ms. Koblaha offers at page 22 of her testimony, I develop a ratemaking
2 capital structure composed of 51% long-term debt and 49% common equity as shown
3 below in my Table 5.

TABLE 5					
<u>Proposed Capital Structure</u>					
(Millions \$)					
	<u>Ratemaking</u>		Adjustment	<u>Credit Rating</u>	
	<u>Amount</u>	<u>Percentage</u>		<u>Amount</u>	<u>Percentage</u>
LTD	\$10,262	49.04%	\$850	\$11,112	51.0%
Pref Stock	\$2	0.01%		\$2	0.0%
Com Equity	<u>\$10,660</u>	<u>50.95%</u>		<u>\$10,660</u>	<u>49.0%</u>
Total	\$20,924	100.00%		\$21,774	100.0%

Source:
Koblaha/22 Table 8 - Adj.

4 The ratemaking adjusted debt ratio of 51% and adjusted equity ratio of 49% are
5 shown to be supportive of the Company's credit rating based on its actual credit metrics
6 in 2020. I recommend the Commission continue to set rates using a ratemaking capital
7 structure of around 51% debt and around 49% equity until or unless PacifiCorp can prove
8 a need to change its ratemaking capital structure is cost-effective and prudent and
9 reasonable for ratemaking purposes.

10 **Q. IS AN S&P TOTAL ADJUSTED DEBT RATIO OF 51% AS YOU PROPOSE**
11 **ADEQUATE TO SUPPORT PACIFICORP'S CURRENT A-RATED BOND**
12 **RATING?**

13 A. Yes. This total debt ratio reflects one of the more moderate debt financed utility
14 companies in the industry with a bond rating similar to PacifiCorp's of "A".

TABLE 6

**S&P Adjusted Debt Ratio
Value Line Utility Industry
Electric, Gas, and Water
(FY 2021 - Industry Distributions)**

<u>Rating</u>	<u>Count</u>	<u>Median</u>	<u>% Distribution of 3 Year Average</u>			
			<u><45</u>	<u><50</u>	<u>50 to 55</u>	<u>>55</u>
AA-	3	43.7%	2	3	0	0
A+	11	53.1%	2	6	0	5
A	27	48.9%	7	18	4	5
A-	108	52.6%	8	34	42	32
BBB+	79	51.8%	7	30	31	18
BBB	53	48.2%	16	28	16	9

Sources:
S&P Capital IQ, downloaded June 7, 2022.

1 As outlined in the table above, the median adjusted debt ratio for utility
2 companies with a median “A” bond rating has been approximately 49%, and over two-
3 thirds (25 of 34) of all “A”-rated utilities with debt ratios of 50% or less. PacifiCorp has
4 been able to maintain its “A” bond rating with an adjusted debt ratio since 2018 under
5 50%, which aligns it with the majority of other regulated utilities.

6 **Q. WOULD YOUR REGULATORY CAPITAL STRUCTURE COMPOSED OF**
7 **50.95% COMMON EQUITY BE CONSISTENT WITH INDUSTRY**
8 **RATEMAKING PRACTICES?**

9 A. Yes. As shown below in Table 7, my recommended capital structure includes a common
10 equity component that is aligned with industry practices. In contrast, PacifiCorp’s
11 proposed 52.25% common equity ratio is more expensive than that typically awarded to
12 an electric utility in support of regulated cost of service.

TABLE 7

Trends in State Authorized Common Equity Ratios
(Electric Utilities)

<u>Line</u>	<u>Year</u> (1)	<u>Average</u> (2)	<u>Median</u> (3)
1	2010	49.49%	49.79%
2	2011	49.09%	49.10%
3	2012	51.45%	52.00%
4	2013	50.12%	51.03%
5	2014	50.28%	50.00%
6	2015	49.89%	50.47%
7	2016	49.70%	49.99%
8	2017	50.03%	49.99%
9	2018	49.28%	50.23%
10	2019	51.55%	51.37%
11	2020	50.94%	51.17%
12	2021	51.01%	52.00%
13	2022	51.48%	51.92%
14	Average	50.33%	50.70%
15	Median	50.12%	50.47%

Source and Note:
S&P Global Market Intelligence; data through June 20, 2022.
Excludes Arkansas, Florida, Indiana, and Michigan,
because they include non-investor capital.

1 A ratemaking equity ratio of 50.95% reasonably aligns with the industry equity
2 ratios over the period 2020 and 2021, and to date in 2022.

3 **Q. WHAT IS YOUR PROPOSED CAPITAL STRUCTURE?**

4 A. My proposed capital structure is shown in Table 8 below.

<u>Description</u>	<u>Weight</u>
Long-Term Debt	49.04%
Preferred Stock	0.01%
Common Equity	<u>50.95%</u>
Total Regulatory Capital Structure	100.00%

Source: Exhibit AWEC-CUB/102.

1 **II.G. Embedded Cost of Debt**

2 **Q. WHAT IS PACIFICORP'S EMBEDDED COST OF LONG-TERM DEBT?**

3 A. PacifiCorp is proposing an embedded cost of long-term debt of 4.38% as shown on Nikki
4 L. Kobliha's Exhibit PAC/200, page 7. I have used PacifiCorp's proposed embedded
5 cost of long-term debt in my calculation of an overall rate of return.

6 **III. RETURN ON EQUITY**

7 **Q. PLEASE DESCRIBE WHAT IS MEANT BY A "UTILITY'S COST OF**
8 **COMMON EQUITY."**

9 A. A utility's cost of common equity is the expected return that investors require on an
10 investment in the utility. Investors expect to earn their required return from receiving
11 dividends and through stock price appreciation.

12 **Q. PLEASE DESCRIBE THE FRAMEWORK FOR DETERMINING A**
13 **REGULATED UTILITY'S COST OF COMMON EQUITY.**

14 A. In general, determining a fair cost of common equity for a regulated utility has been
15 framed by two hallmark decisions of the U.S. Supreme Court: Bluefield Water Works &

1 Improvement Co. v. Pub. Serv. Comm'n of W. Va., 262 U.S. 679 (1923) and Fed. Power
2 Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944). In these decisions, the Supreme
3 Court found that just compensation depends on many circumstances and must be
4 determined by fair and enlightened judgments based on relevant facts. The Court found
5 that a utility is entitled to such rates as were permitted to earn a return on a property
6 devoted to the convenience of the public that is generally consistent with the same returns
7 available in other investments of corresponding risk. The Court continued that the utility
8 has no constitutional rights to profits such as those realized or anticipated in highly
9 profitable enterprises or speculative ventures, and defined the ratepayer/investor balance
10 as follows:

11 The return should be reasonably sufficient to assure confidence in the
12 financial soundness of the utility and should be adequate, under efficient
13 and economical management, to maintain and support its credit and enable
14 it to raise the money necessary for the proper discharge of its public
15 duties.^{17/}

16 As such, a fair rate of return is based on the expectation that the utility's costs
17 reflect efficient and economical management, and the return will support its credit
18 standing and access to capital, without being in excess of this level. From these
19 standards, rates to customers will be just and reasonable, and under economic
20 management, compensation to the utility will be fair and support financial integrity and
21 credit standing.

^{17/} *Bluefield*, 262 U.S. 679, 693 (1923), emphasis added.

1 **III.A. Risk Proxy Group**

2 **Q. PLEASE DESCRIBE HOW YOU IDENTIFIED A PROXY UTILITY GROUP**
3 **THAT COULD BE USED TO ESTIMATE PACIFICORP'S CURRENT MARKET**
4 **COST OF EQUITY.**

5 A. I relied on the same proxy group developed by PacifiCorp witness Ms. Bulkley.

6 **Q. PLEASE DESCRIBE WHY YOU BELIEVE YOUR PROXY GROUP IS**
7 **REASONABLY COMPARABLE IN INVESTMENT RISK TO PACIFICORP.**

8 A. My proxy group is shown in Exhibit AWEC-CUB/104. The proxy group has an average
9 credit rating from S&P of BBB+, which is two notches lower than PacifiCorp's S&P
10 rating of A. The proxy group has an average Moody's credit rating of Baa2, which is
11 also two notches lower than PacifiCorp's Moody's rating of A3.^{18/}

12 The proxy group has an average common equity ratio of 42.1% from S&P
13 (including short-term debt) and a 45.6% equity ratio from *Value Line* (excluding short-
14 term debt). My recommended equity ratio of 50.95% for PacifiCorp aligns with the
15 financial risk of the proxy group.

16 **III.B. DCF Model**

17 **Q. PLEASE DESCRIBE THE DCF MODEL.**

18 A. The DCF model posits that a stock price is valued by summing the present value of
19 expected future cash flows discounted at the investor's required rate of return or cost of
20 capital. This model is expressed mathematically as follows:

21
$$P_0 = \frac{D_1}{(1+K)^1} + \frac{D_2}{(1+K)^2} + \dots + \frac{D_\infty}{(1+K)^\infty} \quad \text{(Equation 1)}$$

22
23 P_0 = Current stock price
24 D = Dividends in periods 1 - ∞
25 K = Investor's required return

^{18/} PacifiCorp/202, Wilson/Page 1.

1 This model can be rearranged in order to estimate the discount rate or investor-
2 required return, known as “K.” If it is reasonable to assume that earnings and dividends
3 will grow at a constant rate, then Equation 1 can be rearranged as follows:

4
$$K = D_1/P_0 + G \quad \text{(Equation 2)}$$

5 K = Investor’s required return

6 D₁ = Dividend in first year

7 P₀ = Current stock price

8 G = Expected constant dividend growth rate

9 Equation 2 is referred to as the annual “constant growth” DCF model.

10 **Q. PLEASE DESCRIBE THE INPUTS TO YOUR CONSTANT GROWTH DCF**
11 **MODEL.**

12 A. As shown in Equation 2 above, the DCF model requires a current stock price, expected
13 dividend, and expected growth rate in dividends.

14 **Q. WHAT STOCK PRICE DID YOU USE IN YOUR CONSTANT GROWTH DCF**
15 **MODEL?**

16 A. I relied on the average of the weekly high and low stock prices of the utilities in the proxy
17 group over a 13-week period ending on April 14, 2022. An average stock price is less
18 susceptible to market price variations than a price at a single point in time. Therefore, an
19 average stock price is less susceptible to aberrant market price movements, which may
20 not reflect the stock’s long-term value.

21 A 13-week average stock price reflects a period that is still short enough to
22 contain data that reasonably reflects current market expectations, but the period is not so
23 short as to be susceptible to market price variations that may not reflect the stock’s
24 long-term value. In my judgment, a 13-week average stock price is a reasonable balance
25 between the need to reflect current market expectations and the need to capture sufficient
26 data to smooth out aberrant market movements.

1 **Q. WHAT DIVIDEND DID YOU USE IN YOUR CONSTANT GROWTH DCF**
2 **MODEL?**

3 A. I used the most recently paid quarterly dividend as reported in *Value Line*.^{19/} This
4 dividend was annualized (multiplied by 4) and adjusted for next year's growth to produce
5 the D_1 factor for use in Equation 2 above. In other words, I calculate D_1 by multiplying
6 the annualized dividend (D_0) by $(1+G)$.

7 **Q. WHAT DIVIDEND GROWTH RATES DID YOU USE IN YOUR CONSTANT**
8 **GROWTH DCF MODEL?**

9 A. There are several methods that can be used to estimate the expected growth in dividends.
10 However, regardless of the method, to determine the market-required return on common
11 equity, one must attempt to estimate investors' consensus about what the dividend, or
12 earnings growth rate, will be and not what an individual investor or analyst may use to
13 make individual investment decisions.

14 As predictors of future returns, securities analysts' growth estimates have been
15 shown to be more accurate than growth rates derived from historical data.^{20/} That is,
16 assuming the market generally makes rational investment decisions, analysts' growth
17 projections are more likely to influence investors' decisions, which are captured in
18 observable stock prices, than growth rates derived only from historical data.

19 For my constant growth DCF analysis, I have relied on a consensus, or mean, of
20 professional securities analysts' earnings growth estimates as a proxy for investor
21 consensus dividend growth rate expectations. I used the average of analysts' growth rate

^{19/} *The Value Line Investment Survey*, January 21, February 11, and March 11, 2022.

^{20/} See, e.g., David Gordon, Myron Gordon & Lawrence Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management*, Spring 1989.

1 estimates from three sources: Zacks, MI, and Yahoo! Finance. All such projections were
2 available on April 14, 2022, and all were reported online.

3 Each consensus growth rate projection is based on a survey of securities analysts.
4 There is no clear evidence whether a particular analyst is most influential on general
5 market investors. Therefore, a single analyst's projection does not as reliably predict
6 consensus investor outlooks as does a consensus of market analysts' projections. The
7 consensus estimate is a simple arithmetic average, or mean, of surveyed analysts'
8 earnings growth forecasts. A simple average of the growth forecasts gives equal weight
9 to all surveyed analysts' projections. Therefore, a simple average, or arithmetic mean, of
10 analyst forecasts is a good proxy for market consensus expectations.

11 **Q. WHAT ARE THE GROWTH RATES YOU USED IN YOUR CONSTANT**
12 **GROWTH DCF MODEL?**

13 A. The growth rates I used in my DCF analysis are shown in Exhibit AWEC-CUB/105. The
14 average growth rate for my proxy group is 6.13%.

15 **Q. WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF MODEL?**

16 A. As shown in Exhibit AWEC-CUB/106, the average and median constant growth DCF
17 returns for my proxy group for the 13-week analysis are 9.55% and 9.65%, respectively.

18 **Q. DO YOU HAVE ANY COMMENTS ON THE RESULTS OF YOUR CONSTANT**
19 **GROWTH DCF ANALYSIS?**

20 A. Yes. The constant growth DCF analysis for my proxy group is based on an average
21 long-term sustainable growth rates of 6.13%. The three- to five-year growth rate is
22 higher than my estimate of a maximum long-term sustainable growth rate of 4.10%.

1 **Q. HOW DID YOU ESTIMATE A MAXIMUM LONG-TERM SUSTAINABLE**
2 **GROWTH RATE?**

3 A. The long-term sustainable growth rate for a utility stock cannot exceed the growth rate of
4 the economy in which it sells its goods and services. The long-term maximum
5 sustainable growth rate for a utility investment is, accordingly, best proxied by the
6 projected long-term Gross Domestic Product (“GDP”) growth rate as that reflects the
7 projected long-term growth rate of the economy as a whole. While growth rates on
8 shorter periods can exceed the GDP growth rate, those short-term growth periods are
9 likely followed by other periods where the growth rate is below the GDP. On average
10 over long periods of time, the growth rate is most accurately approximated by the
11 long-term growth rate outlooks of the U.S. GDP.

12 *Blue Chip Economic Indicators* projects that over the next 5 and 10 years, the
13 U.S. nominal GDP will grow at an annual rate of approximately 4.10%. These GDP
14 growth projections reflect a real growth outlook of around 2.00% and an inflation outlook
15 of around 2.10% going forward. As such, the average nominal growth rate over the next
16 10 years is around 4.10%, which I believe is a reasonable proxy of long-term sustainable
17 growth.^{21/}

18 **Q. DO YOU CITE ANY INDEPENDENT AUTHORITATIVE SUPPORT FOR**
19 **USING LONG-TERM GDP GROWTH AS A MAXIMUM SUSTAINABLE**
20 **GROWTH RATE?**

21 A. Yes. In my multi-stage growth DCF analysis, I discuss academic and investment
22 practitioner support for using the projected long-term GDP growth outlook as a
23 maximum sustainable growth rate projection. Using the long-term GDP growth rate,

^{21/} *Blue Chip Economic Indicators*, March 11, 2022, at 14.

1 however, as a conservative projection for the maximum sustainable growth rate is logical,
2 and is generally consistent with academic and economic practitioner accepted practices.

3 **III.C. Sustainable Growth DCF**

4 **Q. PLEASE DESCRIBE HOW YOU ESTIMATED A SUSTAINABLE LONG-TERM**
5 **GROWTH RATE FOR YOUR SUSTAINABLE GROWTH DCF MODEL.**

6 A. A sustainable growth rate is based on the percentage of the utility's earnings that is
7 retained and reinvested in utility plant and equipment. These reinvested earnings
8 increase the earnings base (rate base). Earnings grow when plant funded by reinvested
9 earnings is put into service, and the utility is allowed to earn its authorized return on such
10 additional rate base investment.

11 The internal growth methodology is tied to the percentage of earnings retained by
12 the utility and not paid out as dividends. The earnings retention ratio is 1 minus the
13 dividend payout ratio. As the payout ratio declines, the earnings retention ratio increases.
14 An increased earnings retention ratio will fuel stronger growth because the business funds
15 more investments with retained earnings.

16 The payout ratios of the proxy group are shown in my Exhibit AWEC-CUB/107.
17 These dividend payout ratios and earnings retention ratios then can be used to develop a
18 sustainable long-term earnings retention growth rate. A sustainable long-term earnings
19 retention ratio will help gauge whether analysts' current three- to five-year growth rate
20 projections can be sustained over an indefinite period of time.

21 The data used to estimate the long-term sustainable growth rate is based on
22 PacifiCorp's current market-to-book ratio and on *Value Line's* three- to five-year
23 projections of earnings, dividends, earned returns on book equity, and stock issuances.

1 As shown in Exhibit AWEC-CUB/108, the average sustainable growth rate using
2 this internal growth rate model is 4.96% for my proxy group. As shown on my exhibit
3 these extremely high growth rates are triggered by selling additional shares to the public.
4 The internal growth rate component (Column 10) of the sustainable growth rate is in line
5 with the long-term sustainable growth outlook as measured by the GDP growth.

6 **Q. WHAT IS THE DCF ESTIMATE USING THESE SUSTAINABLE LONG-TERM**
7 **GROWTH RATES?**

8 A. A DCF estimate based on these sustainable growth rates is developed in Exhibit AWEC-
9 CUB/109. As shown there, the sustainable growth DCF analysis produces a proxy group
10 average and median DCF results for the 13-week period of 8.34% and 8.45%,
11 respectively.

12 **III.D. Multi-Stage Growth DCF Model**

13 **Q. HAVE YOU CONDUCTED ANY OTHER DCF STUDIES?**

14 A. Yes. My first constant growth DCF is based on consensus analysts' growth rate
15 projections so it is a reasonable reflection of rational investment expectations over the
16 next three to five years. The limitation on this constant growth DCF model is that it
17 cannot reflect a rational expectation that a period of high or low short-term growth can be
18 followed by a change in growth to a rate that better reflects long-term sustainable growth.
19 Therefore, I performed a multi-stage growth DCF analysis to reflect this outlook of
20 changing growth expectations.

21 **Q. WHY DO YOU BELIEVE GROWTH RATES CAN CHANGE OVER TIME?**

22 A. Analyst-projected growth rates over the next three to five years will change as utility
23 earnings growth outlooks change. Utility companies go through cycles in making

1 investments in their systems. When utility companies are making large investments, their
2 rate base grows rapidly, which in turn accelerates earnings growth. Once a major
3 construction cycle is completed or levels off, growth in the utility rate base slows and its
4 earnings growth slows from an abnormally high three- to five-year rate to a lower
5 sustainable growth rate.

6 As major construction cycles extend over longer periods of time, even with an
7 accelerated construction program, the growth rate of the utility will slow simply because
8 the pace of rate base growth will slow and because the utility has limited human and
9 capital resources available to expand its construction program. Therefore, the three- to
10 five-year growth rate projection should only be used as a long-term sustainable growth
11 rate in concert with a reasonable, informed judgment as to whether it considers the
12 current market environment, the industry, and whether the three- to five-year growth
13 outlook is sustainable.

14 **Q. PLEASE DESCRIBE YOUR MULTI-STAGE GROWTH DCF MODEL.**

15 A. The multi-stage growth DCF model reflects the possibility of non-constant growth for a
16 company over time. The multi-stage growth DCF model reflects three growth periods:
17 (1) a short-term growth period consisting of the first five years; (2) a transition period,
18 consisting of the next five years (6 through 10); and (3) a long-term growth period
19 starting in year 11 through perpetuity.

20 For the short-term growth period, I relied on the consensus analysts' growth
21 projections I used above in my constant growth DCF model. For the transition period,
22 the growth rates were reduced or increased by an equal factor reflecting the difference
23 between the analysts' growth rates and the long-term sustainable growth rate. For the

1 long-term growth period, I assumed each company's growth would converge to the
2 maximum sustainable long-term growth rate, which is the projected long-term GDP
3 growth rate.

4 **Q. WHY IS THE GDP GROWTH PROJECTION A REASONABLE PROXY FOR**
5 **THE MAXIMUM SUSTAINABLE LONG-TERM GROWTH RATE?**

6 A. Utilities cannot indefinitely sustain a growth rate that exceeds the growth rate of the
7 economy in which they sell services. Utilities' earnings/dividend growth are created by
8 increased utility investment or rate base. Such investment, in turn, is driven by service
9 area economic growth and demand for utility service. In other words, utilities invest in
10 plant to meet sales demand growth. Sales growth, in turn, is tied to economic growth in
11 their service areas.

12 The U.S. Department of Energy, Energy Information Administration ("EIA") has
13 observed utility sales growth tracks U.S. GDP growth, albeit at a lower level, as shown in
14 Exhibit AWEC-CUB/110. Utility sales growth has lagged behind GDP growth for more
15 than a decade. As a result, nominal GDP growth is a very conservative proxy for utility
16 sales growth, rate base growth, and earnings growth. Therefore, the U.S. GDP nominal
17 growth rate is a reasonable proxy for the highest sustainable long-term growth rate of a
18 utility.

19 **Q. IS THERE RESEARCH THAT SUPPORTS YOUR POSITION THAT, OVER**
20 **THE LONG TERM, A COMPANY'S EARNINGS AND DIVIDENDS CANNOT**
21 **GROW AT A RATE GREATER THAN THE GROWTH OF THE U.S. GDP?**

22 A. Yes. This concept is supported in published analyst literature and academic work.
23 Specifically, in "Fundamentals of Financial Management," a textbook published by
24 Eugene Brigham and Joel F. Houston, the authors state:

1 The constant growth model is most appropriate for mature companies with
2 a stable history of growth and stable future expectations. Expected growth
3 rates vary somewhat among companies, but dividends for mature firms are
4 often expected to grow in the future at about the same rate as nominal
5 gross domestic product (real GDP plus inflation).^{22/}

6 The use of the economic growth rate is also supported by investment practitioners
7 as outlined as follows:

8 **Estimating Growth Rates**

9 One of the advantages of a three-stage discounted cash flow model is that
10 it fits with life cycle theories in regards to company growth. In these
11 theories, companies are assumed to have a life cycle with varying growth
12 characteristics. Typically, the potential for extraordinary growth in the
13 near term eases over time and eventually growth slows to a more stable
14 level.

15 * * *

16 Another approach to estimating long-term growth rates is to focus on
17 estimating the overall economic growth rate. Again, this is the approach
18 used in the *Ibbotson Cost of Capital Yearbook*. To obtain the economic
19 growth rate, a forecast is made of the growth rate's component parts.
20 Expected growth can be broken into two main parts: expected inflation
21 and expected real growth. By analyzing these components separately, it is
22 easier to see the factors that drive growth.^{23/}

23 **Q. ARE THERE ACTUAL INVESTMENT RESULTS THAT SUPPORT THE**
24 **THEORY THAT THE GROWTH ON STOCK INVESTMENTS WILL NOT**
25 **EXCEED THE NOMINAL GROWTH OF THE U.S. GDP?**

26 **A.** Yes. This is evident by a comparison of the compound annual growth of the U.S. GDP to
27 the geometric growth of the U.S. stock market. Kroll measures the historical geometric
28 growth of the U.S. stock market over the period 1926-2021 to be approximately 6.4%.^{24/}

^{22/} “*Fundamentals of Financial Management*,” Eugene F. Brigham & Joel F. Houston, Eleventh Edition 2007, Thomson South-Western, a Division of Thomson Corporation at 298, emphasis added.

^{23/} *Morningstar, Inc., Ibbotson SBBi 2013 Valuation Yearbook* at 51 and 52.

^{24/} *Kroll, 2022 SBBi Yearbook* at 145.

1 During this same time period, the U.S. nominal compound annual growth of the U.S.
2 GDP was approximately 6.0%.^{25/}

3 As such, over the past 95 years, the geometric average growth of the U.S. nominal
4 GDP has been slightly higher than, but comparable to, the geometric average growth of
5 the U.S. stock market capital appreciation. This historical relationship indicates that the
6 U.S. GDP growth outlook is a reasonable estimate of the long-term sustainable growth of
7 U.S. stock investments.

8 **Q. WHAT IS THE GEOMETRIC AVERAGE AND WHY IS IT APPROPRIATE TO**
9 **USE THIS MEASURE TO COMPARE GDP GROWTH TO CAPITAL**
10 **APPRECIATION IN THE STOCK MARKET?**

11 A. The terms geometric average growth rate and compound annual growth rate are used
12 interchangeably. The geometric annual growth rate is the calculated growth rate, or
13 return, that measures the magnitude of growth from start to finish. The geometric
14 average is best, and most often, used as a measurement of performance or growth over a
15 long period of time.^{26/} Since I am comparing achieved growth in the stock market to
16 achieved growth in U.S. GDP over a long period of time, the geometric average growth
17 rate is most appropriate.

18 **Q. HOW DID YOU DETERMINE A LONG-TERM GROWTH RATE THAT**
19 **REFLECTS THE CURRENT CONSENSUS MARKET PARTICIPANT**
20 **OUTLOOK?**

21 A. I relied on the economic consensus of long-term GDP growth projections. *Blue Chip*
22 *Economic Indicators* publishes the consensus for GDP growth projections twice a year.
23 These consensus GDP growth outlooks are the best available measure of the market's
24 assessment of long-term GDP growth because the analysts' projections reflect all current

^{25/} U.S. Bureau of Economic Analysis, Table 1.1.5 Gross Domestic Product, Revised May 26, 2022.

^{26/} *New Regulatory Finance*, Roger Morin, PhD, at 133-134.

1 outlooks for GDP. They are therefore likely the most influential on investors'
2 expectations of future growth outlooks. The consensus projections published GDP
3 growth rate outlook is 4.10% over the next 10 years.^{27/}

4 I propose to use the consensus for projected five- and ten-year average GDP
5 growth rates of 4.10%, as published by *Blue Chip Economic Indicators*, as an estimate of
6 long-term sustainable growth. *Blue Chip Economic Indicators* projections provide real
7 GDP growth projections of approximately 2.00% and inflation of 2.10% over the five-
8 year (2024-2028) and ten-year (2029-2033) projection periods, resulting in an average
9 ten-year nominal annual GDP growth projection of 4.10%.^{28/} These GDP growth
10 forecasts represent the most likely views of market participants because they are based on
11 published economic consensus projections.

12 **Q. DO YOU CONSIDER OTHER SOURCES OF PROJECTED LONG-TERM GDP**
13 **GROWTH?**

14 A. Yes, and these alternative sources corroborate the consensus analysts' projections I relied
15 on. Various commonly relied upon analysts' projections are shown in Table 9 below.

^{27/} *Blue Chip Economic Indicators*, March 11, 2022, at 14.

^{28/} *Id.*

TABLE 9

GDP Forecasts

<u>Source</u>	<u>Projected Period</u>	<u>Real GDP</u>	<u>Inflation</u>	<u>Nominal GDP</u>
Blue Chip Economic Indicators ¹	5-10 Yrs	2.0%	2.1%	4.1%
EIA - Annual Energy Outlook ²	29 Yrs	2.2%	2.3%	4.5%
Congressional Budget Office ³	30 Yrs	1.7%	2.0%	3.7%
Moody's Analytics ⁴	31 Yrs	2.1%	1.9%	4.1%
Social Security Administration ⁵	74 Yrs			4.1%
Economist Intelligence Unit ⁶	29 Yrs	1.7%	2.2%	3.9%

Sources:

¹Blue Chip Economic Indicators, March 11, 2022 at 14.
²U.S. Energy Information Administration (EIA), Annual Energy Outlook 2022, March 3, 2022.
³Congressional Budget Office, Long-Term Budget Outlook, March 2021.
⁴Moody's Analytics Forecast, downloaded March 8, 2022.
⁵Social Security Administration, "2021 OASDI Trustees Report," Table VI.G4, August 31, 2021.
⁶S&P MI, Economist Intelligence Unit, downloaded on March 9, 2022.

1 As shown in the table above, the real GDP and the inflation fall in the range of
2 1.70% to 2.10% and 1.9% to 2.3%, respectively. This results in a nominal GDP in the
3 range of 3.70% to 4.50%, with a midpoint of 4.10%.

4 Therefore, the nominal GDP growth projections made by these independent
5 sources support my use of 4.10% as a reasonable estimate of market participants'
6 expectations for long-term GDP growth.

7 **Q. WHAT STOCK PRICE, DIVIDEND, AND GROWTH RATES DID YOU USE IN**
8 **YOUR MULTI-STAGE GROWTH DCF ANALYSIS?**

9 A. I relied on the same 13-week average stock prices and the most recent quarterly dividend
10 payment data discussed above. For stage one growth, I used the consensus analysts'

1 growth rate projections discussed above in my constant growth DCF model. The first
 2 stage covers the first five years, consistent with the time horizon of the securities
 3 analysts' growth rate projections. The second stage, or transition stage, begins in year 6
 4 and extends through year 10. The second stage growth transitions the growth rate from
 5 the first stage to the third stage using a straight linear trend. For the third stage, or
 6 long-term sustainable growth stage, starting in year 11, I used a 4.10% long-term
 7 sustainable growth rate based on the consensus economists' long-term projected nominal
 8 GDP growth rate.

9 **Q. WHAT ARE THE RESULTS OF YOUR MULTI-STAGE GROWTH DCF**
 10 **MODEL?**

11 A. As shown in Exhibit AWEC-CUB/111, the average and median multi-stage DCF returns
 12 on equity for my proxy group using the 13-week average stock price are 7.89% and
 13 7.96%, respectively.

14 **III.E. DCF Summary Results**

15 **Q. PLEASE SUMMARIZE THE RESULTS FROM YOUR DCF ANALYSES.**

16 A. The results from my DCF analyses are summarized in Table 10 below:

TABLE 10		
<u>Summary of DCF Results</u>		
Description	Electric	
	Average	Median
Constant Growth DCF Model (Analysts' Growth)	9.55%	9.65%
Constant Growth DCF Model (Sustainable Growth)	8.34%	8.45%
Multi-Stage Growth DCF Model	7.89%	7.96%

1 My DCF studies indicate a fair return on equity for PacifiCorp in the range of 8.0% to
2 9.6%, with a midpoint of 8.8%.

3 **III.F. Risk Premium Model**

4 **Q. PLEASE DESCRIBE YOUR BOND YIELD PLUS RISK PREMIUM MODEL.**

5 A. This model is based on the principle that investors require a higher return to assume
6 greater risk. Common equity investments have greater risk than bonds because bonds
7 have more security of payment in bankruptcy proceedings than common equity and the
8 coupon payments on bonds represent contractual obligations. In contrast, companies are
9 not required to pay dividends or guarantee returns on common equity investments.
10 Therefore, common equity securities are considered to be riskier than bond securities.

11 This risk premium model is based on two estimates of an equity risk premium.
12 First, I quantify the difference between regulatory commission-authorized returns on
13 common equity and contemporary U.S. Treasury bonds. The difference between the
14 authorized return on common equity and the Treasury bond yield is the risk premium. I
15 estimated the risk premium on an annual basis for each year from 1986 through
16 December 2021. The authorized returns on equity were based on regulatory commission-
17 authorized returns for utility companies. Authorized returns are typically based on expert
18 witnesses' estimates of the investor-required return at the time of the proceeding.

19 The second equity risk premium estimate is based on the difference between
20 regulatory commission-authorized returns on common equity and contemporary
21 "A" rated utility bond yields by Moody's. I selected the period 1986 through December
22 2021 because public utility stocks consistently traded at a premium to book value during
23 that period. This is illustrated in Exhibit AWEC-CUB/112, which shows the

1 market-to-book ratio since 1986 for the electric utility industry was consistently above a
2 multiple of 1.0x. Over this period, an analyst can infer that authorized returns on equity
3 were sufficient to support market prices that at least exceeded book value. This is an
4 indication that commission-authorized returns on common equity supported a utility's
5 ability to issue additional common stock without diluting existing shares. It further
6 demonstrates utilities were able to access equity markets without a detrimental impact on
7 current shareholders.

8 Based on this analysis, as shown in Exhibit AWEC-CUB/113, the average
9 indicated equity risk premium over U.S. Treasury bond yields has been 5.70%. Since
10 the risk premium can vary depending upon market conditions and changing investor risk
11 perceptions, I believe using an estimated range of risk premiums provides the best
12 method to measure the current return on common equity for a risk premium
13 methodology.

14 I incorporated five-year and ten-year rolling average risk premiums over the study
15 period to gauge the variability over time of risk premiums. These rolling average risk
16 premiums mitigate the impact of anomalous market conditions and skewed risk
17 premiums over an entire business cycle. As shown on my Exhibit AWEC-CUB/113, the
18 five-year rolling average risk premium over Treasury bonds ranged from 4.25% to
19 7.09%, with an average of 5.64%. The ten-year rolling average risk premium ranged
20 from 4.38% to 6.91%, with an average of 5.64%.

21 As shown on my Exhibit AWEC-CUB/114, the average indicated equity risk
22 premium over contemporary "A" rated Moody's utility bond yields was 4.34%. The five-
23 year rolling average risk premiums ranged from 2.88% to 5.90%, with an average of

1 4.29%. The ten-year rolling average risk premiums ranged from 3.20% to 5.73%, with
2 an average of 4.27%.

3 **Q. DO YOU BELIEVE THAT THE TIME PERIOD USED TO DERIVE THESE**
4 **EQUITY RISK PREMIUM ESTIMATES IS APPROPRIATE TO FORM**
5 **ACCURATE CONCLUSIONS ABOUT CONTEMPORARY MARKET**
6 **CONDITIONS?**

7 A. Yes. Contemporary market conditions can change during the period that rates
8 determined in this proceeding will be in effect. A relatively long period of time where
9 stock valuations reflect premiums to book value indicates that the authorized returns on
10 equity and the corresponding equity risk premiums were supportive of investors' return
11 expectations and provided utilities access to the equity markets under reasonable terms
12 and conditions. Further, this time period is long enough to smooth abnormal market
13 movement that might distort equity risk premiums. While market conditions and risk
14 premiums do vary over time, this historical time period is a reasonable period to estimate
15 contemporary risk premiums.

16 Alternatively, some studies, such as Kroll, have recommended that the use of
17 "actual achieved investment return data" in a risk premium study should be based on long
18 historical time periods. The studies find that achieved returns over short time periods
19 may not reflect investors' expected returns due to unexpected and abnormal stock price
20 performance. Short-term, abnormal actual returns would be smoothed over time and the
21 achieved actual investment returns over long time periods would approximate investors'
22 expected returns. Therefore, it is reasonable to assume that averages of annual achieved
23 returns over long time periods will generally converge on the investors' expected returns.

1 My risk premium study is based on data that inherently relied on investor
2 expectations, not actual investment returns, and, thus, need not encompass a very long
3 historical time period.

4 **Q. WHAT DOES CURRENT OBSERVABLE MARKET DATA SUGGEST ABOUT**
5 **INVESTOR PERCEPTIONS OF UTILITY INVESTMENTS?**

6 A. The equity risk premium should reflect the relative market perception of risk today in the
7 utility industry. I have gauged investor perceptions in utility risk today in Exhibit
8 AWEC-CUB/115, where I show the yield spread between utility bonds and Treasury
9 bonds over the last 42 years. As shown in this exhibit, the average utility bond yield
10 spreads over Treasury bonds for “A” and “Baa” rated utility bonds for this historical
11 period are 1.48% and 1.91%, respectively. The utility bond yield spreads over Treasury
12 bonds for “A” and “Baa” rated utilities for 2019 were 1.18% and 1.61%, respectively. In
13 2020, the “A” and “Baa” utility spreads are 1.49% and 1.87%, respectively. In 2021, the
14 “A” and “Baa” utility spreads declined to 1.05% and 1.30%, respectively. More recently,
15 for the first three months of 2022, the “A” and “Baa” utility spreads increased to 1.40%
16 and 1.67%, respectively. Both the current average “A” rated and “Baa” rated utility bond
17 yield spreads over Treasury bond yields are lower than or comparable to the respective
18 42-year average spreads.

19 The current 13-week average “A” rated utility bond yield of 3.83% when
20 compared to the current Treasury bond yield of 2.37%, as shown in Exhibit AWEC-
21 CUB/116, implies a yield spread of 1.46%. This current utility bond yield spread is
22 significantly lower than the 42-year average spread for “A” rated utility bonds of 1.48%.
23 The current spread for the “Baa” rated utility bond yield of 1.74% is also lower than the
24 42-year average spread of 1.94%.

1 **Q. IS THERE OBSERVABLE MARKET EVIDENCE TO HELP GAUGE MARKET**
2 **RISK PREMIUMS?**

3 A. Yes. Market data illustrates how the market is pricing investment risk, and gauging the
4 current demands for returns based on securities of varying levels of investment risk. This
5 market evidence includes bond yield spreads for different bond return ratings as implied
6 by the yield spreads for Treasury, corporate and utility bonds. These spreads provide an
7 indication of the market’s return requirement for securities of different levels of
8 investment risk and required risk premiums.

9 Table 11 below summarizes the utility and corporate bond spreads relative to
10 Treasury bond yields.

<u>Description</u>	<u>Utility</u>		<u>Corporate</u>	
	<u>A</u>	<u>Baa</u>	<u>Aaa</u>	<u>Baa</u>
Average Historical Spread	1.48%	1.91%	0.84%	1.91%
2019 Spread	1.18%	1.61%	0.81%	1.79%
2020 Spread	1.49%	1.87%	0.96%	2.10%
2021 Spread	1.05%	1.30%	0.65%	1.34%
2022 Spread*	1.76%	2.04%	1.09%	1.87%

Source: Moody's Bond Yields
*2022 data through May, 2022

11 As shown in Table 11 above, the long-term historical spread from A and Baa
12 utility bonds and that of corporate bonds relative to Treasuries exceeded the actual spread
13 for utilities and corporates in 2019 and 2021. The spread in 2020 aligned with historical
14 averages. The spread in 2022 is converging back to the historical norm. As such, the risk
15 premiums in 2019 through 2021 appear to have been above normal but risk premiums are

1 converging to more normalized levels based on observable data for calendar year 2022.
2 For these reasons, I believe that a recent increase in short-term and a modest increase in
3 long-term interest rates reflect a reduction in risk premiums demanded by market
4 participants to assume securities of greater investment risk. Stated more specifically,
5 observable risk premiums inherent in securities of different investment risk are starting to
6 converge to more normal levels.

7 **Q. WHAT IS YOUR RECOMMENDED RETURN FOR PACIFICORP BASED ON**
8 **YOUR RISK PREMIUM STUDY?**

9 A. I am recommending more weight be given to the high-end risk premium estimates than
10 the low-end. As outlined above, I believe the current market is reflecting high premiums
11 for investing in securities of greater levels of investment risk. Based on this observation,
12 I propose to be conservative in applying a risk premium analysis. For these reasons, I
13 recommend my high-end equity risk premium in forming a return on equity in this
14 proceeding.

15 For the Treasury bond yields, I relied on an average historical risk premium of
16 approximately 5.70% in combination with a forecasted Treasury bond yield of 3.30%.^{29/}
17 A forecasted Treasury bond yield of 3.30% reflects a substantial increase in the Treasury
18 bond yield over a 13-week study period of 2.37%, as shown on my Exhibit
19 AWEC/CUB/116, Gorman/Page 1. Using a Treasury bond risk premium of 5.70% and a
20 projected 30-year Treasury bond yield of 3.30% produces an indicated equity risk
21 premium of 9.00% (5.70% + 3.30%).

22 A risk premium based on utility bond yields reflects current observable bond
23 yields. Current observable bond yields may increase over time based on economists'

^{29/} *Blue Chip Financial Forecasts*, April 1, 2022 at 2.

1 projections of changes in interest rates. However, history indicates that economists
2 typically overestimate increases in interest rates. Therefore, current observable rates
3 should also be considered. With current observable rates, I recommend an above average
4 risk premium estimate. Using a five-year risk premium range of 2.88% to 5.90%,
5 applying 75% weight to the high-end and 25% to the low-end, produces a risk premium
6 over utility bond yields of 5.15%.^{30/} A risk premium of 5.15% with an A utility yield of
7 3.83% as shown on my Exhibit AWEC-CUB/116, produces a risk premium return on
8 equity of 8.98% (5.15% + 3.83%).

9 Based on this methodology, my Treasury bond risk premium and my utility bond
10 risk premium indicate a return on equity for PacifiCorp of 9.00%.

11 **III.G. Capital Asset Pricing Model (“CAPM”)**

12 **Q. PLEASE DESCRIBE THE CAPM.**

13 A. The CAPM method of analysis is based upon the theory that the market-required rate of
14 return for a security is equal to the risk-free rate, plus a risk premium associated with the
15 specific security. This relationship between risk and return can be expressed
16 mathematically as follows:

17 $R_i = R_f + B_i \times (R_m - R_f)$ where:

18 R_i = Required return for stock i

19 R_f = Risk-free rate

20 R_m = Expected return for the market portfolio

21 B_i = Beta - Measure of the risk for stock

22 The stock-specific risk term in the above equation is beta. Beta represents the
23 investment risk that cannot be diversified away when the security is held in a diversified
24 portfolio. When stocks are held in a diversified portfolio, stock-specific risks can be

^{30/} $75\% \times 5.97\% + 25\% \times 2.80\% = 5.18\%$.

1 eliminated by balancing the portfolio with securities that react in the opposite direction to
2 firm-specific risk factors (e.g., business cycle, competition, product mix, and production
3 limitations).

4 Risks that cannot be eliminated when held in a diversified portfolio are
5 non-diversifiable risks. Non-diversifiable risks are related to the market and referred to
6 as systematic risks. Risks that can be eliminated by diversification are non-systematic
7 risks. In a broad sense, systematic risks are market risks and non-systematic risks are
8 business risks. The CAPM theory suggests the market will not compensate investors for
9 assuming risks that can be diversified away. Therefore, the only risk investors will be
10 compensated for are systematic, or non-diversifiable, risks. The beta is a measure of the
11 systematic, or non-diversifiable risks.

12 **Q. PLEASE DESCRIBE THE INPUTS TO YOUR CAPM.**

13 A. The CAPM requires an estimate of the market risk-free rate, PacifiCorp's beta, and the
14 market risk premium.

15 **Q. WHAT DID YOU USE AS AN ESTIMATE OF THE MARKET RISK-FREE**
16 **RATE?**

17 A. As previously noted, *Blue Chip Financial Forecasts'* projected 30-year Treasury bond
18 yield is 3.30%.^{31/} The current 30-year Treasury bond yield is 2.37%, as shown in Exhibit
19 AWEC-CUB/116.

20 **Q. WHY DID YOU USE LONG-TERM TREASURY BOND YIELDS AS AN**
21 **ESTIMATE OF THE RISK-FREE RATE?**

22 A. Treasury securities are backed by the full faith and credit of the United States
23 government. Therefore, long-term Treasury bonds are considered to have negligible

^{31/} *Id.*

1 credit risk. Also, long-term Treasury bonds have an investment horizon similar to that of
2 common stock. As a result, investor-anticipated long-run inflation expectations are
3 reflected in both common stock required returns and long-term bond yields. Therefore,
4 the nominal risk-free rate (or expected inflation rate and real risk-free rate) included in a
5 long-term bond yield is a reasonable estimate of the nominal risk-free rate included in
6 common stock returns.

7 Treasury bond yields, however, do include risk premiums related to unanticipated
8 future inflation and interest rates. In this regard, a Treasury bond yield is not a risk-free
9 rate. Risk premiums related to unanticipated inflation and interest rates reflect systematic
10 market risks. Consequently, for companies with betas less than 1.0, using the Treasury
11 bond yield as a proxy for the risk-free rate in the CAPM analysis can produce an
12 overstated estimate of the CAPM return.

13 **Q. WHAT BETA DID YOU USE IN YOUR ANALYSIS?**

14 A. The average beta of my proxy group is 0.88.^{32/}

15 I also reviewed the long-term trend of *Value Line* betas reported for the proxy
16 group companies, and the *Value Line* regulated utility industries. The proxy group's
17 betas have generally ranged between 0.60 and 0.80 prior to the elevated betas published
18 after the COVID-19 pandemic commenced.^{33/} The historical variability in the proxy
19 group *Value Line* betas is similar to the historical variability in the entire regulated utility
20 industry betas followed by *Value Line*.^{34/} On this schedule, similar to the proxy group
21 companies, I show the *Value Line* electric industry historical beta estimates, which also

^{32/} Exhibit AWEC-CUB/117, Gorman/Page 1.

^{33/} *Id.*, Gorman/Page 2.

^{34/} *Id.*, Gorman/Pages 3-4.

1 indicate that the current beta is abnormally high, and the long-term historical average beta
2 of the proxy group reasonably aligns with that of the entire industry.

3 The normalized historical beta estimates for the proxy group is 0.73. Thus, the
4 current beta estimate of 0.88 is well above the normalized historical beta for these proxy
5 groups.

6 **Q. IS IT REASONABLE TO ESTIMATE A CAPM RETURN ON A REGULATED**
7 **UTILITY BASED ON BETA ESTIMATES THAT ARE CLEARLY OUTLIERS**
8 **FOR HISTORICAL AVERAGE BETAS?**

9 A. No. Utility company betas have increased from around 0.65 to 0.75 up to a current level
10 around 0.88 over the last two years. This increase in betas suggests that utility
11 companies' investment risks are increasing relative to the overall general marketplace.
12 The outlook of increasing utility investment risk is simply not supported by a review of
13 other risk measures for utilities including: (a) current robust valuation metrics of utilities
14 as described above; (b) risk spreads of utility stock yields relative to bond yields; (c)
15 sustained investment grade bond ratings for utility companies, and (d) access to
16 significant amount of capital. Again, as shown on Exhibit AWEC-CUB/103, the
17 historically strong valuation metrics of regulated utilities are particularly robust,
18 indicating the market is paying a premium for utility stocks. The fact that utility stocks
19 are trading at a premium is inconsistent with the notion that the market perceives the
20 utility's industry's investment risk to be increasing. It also shows that the market is not
21 demanding a higher rate of return to invest in these securities.

22 For these reasons, in performing my CAPM I used a more normalized beta of 0.73
23 and market risk premium factors in order to derive a CAPM return estimate in this
24 proceeding.

1 **Q. HOW DID YOU DERIVE YOUR MARKET RISK PREMIUM ESTIMATE?**

2 A. I derived two market risk premium estimates: a forward-looking estimate and one based
3 on a long-term historical average.

4 The forward-looking estimate was derived by estimating the expected return on
5 the market (as represented by the S&P 500) and subtracting the risk-free rate from this
6 estimate. I estimated the expected return on the S&P 500 by adding an expected inflation
7 rate to the long-term historical arithmetic average real return on the market. The real
8 return on the market represents the achieved return above the rate of inflation.

9 Kroll's *2022 SBBI Yearbook* estimates the historical arithmetic average real
10 market return over the period 1926 to 2021 to be 9.2%.^{35/} A current consensus for
11 projected inflation, as measured by the Consumer Price Index, is 2.6%.^{36/} Using these
12 estimates, the expected market return is 12.04%.^{37/} The market risk premium then is the
13 difference between the 12.04% expected market return and my 3.30% risk-free rate
14 estimate, or 8.74%, which I referred to as a normalized market risk premium.

15 I also developed a current market risk premium based on the difference between
16 the expected return on the market of 12.04% as described above and the current 30-year
17 Treasury yield of 2.37% as shown on my Exhibit AWEC-CUB/116, which produced a
18 current market risk premium of approximately 9.67%.

19 A historical estimate of the market risk premium was also calculated by using
20 data provided by Kroll in its *2022 SBBI Yearbook*. Over the period 1926 through 2021,
21 the Kroll study estimated that the arithmetic average of the achieved total return on the

^{35/} Kroll, *2022 SBBI Yearbook at 146*.

^{36/} *Blue Chip Financial Forecasts*, April 1, 2022 at 2.

^{37/} $\{ (1 + 0.092) * (1 + 0.026) - 1 \} * 100$.

1 S&P 500 was 12.3%^{38/} and the total return on long-term Treasury bonds was 6.0%.^{39/}

2 The indicated market risk premium is 6.3% (12.3% - 6.0% = 6.3%).

3 The long-term government bond yield of 6.0% occurred during a period of
4 inflation of approximately 3.0 %, thus implying a real return on long-term government
5 bonds of 3.0%.

6 **Q. HOW DOES YOUR ESTIMATED MARKET RISK PREMIUM RANGE**
7 **COMPARE TO THAT ESTIMATED BY KROLL?**

8 A. Kroll makes several estimates of a forward-looking market risk premium based on actual
9 achieved data from the historical period of 1926 through 2021 as well as normalized data.
10 Using this data, Kroll estimates a market risk premium derived from the total return on
11 the securities that comprise the S&P 500, less the income return on Treasury bonds. The
12 total return includes capital appreciation, dividend or coupon reinvestment returns, and
13 annual yields received from coupons and/or dividend payments. The income return, in
14 contrast, only reflects the income return received from dividend payments or coupon
15 yields.

16 Kroll's range is based on several methodologies. First, Kroll estimates a market
17 risk premium of 7.46% based on the difference between the total market return on
18 common stocks (S&P 500) less the income return on 20-year Treasury bond investments
19 over the 1926-2021 period.^{40/}

20 Second, Kroll used the Ibbotson & Chen supply-side model which produced a
21 market risk premium estimate of 6.22%.^{41/} Kroll explains that the historical market risk

^{38/} *Kroll 2022 SBBI Yearbook* at 145.

^{39/} *Id.*

^{40/} *Id.* at 199.

^{41/} *Id.* at 207-208.

1 premium based on the S&P 500 was influenced by an abnormal expansion of P/E ratios
2 relative to earnings and dividend growth during the period, primarily over the last
3 30 years. Kroll believes this abnormal P/E expansion is not sustainable. In order to
4 control for the volatility of extraordinary events and their impacts on P/E ratios, Kroll
5 takes into consideration the three-year average P/E ratio as the current P/E ratio.^{42/}

6 Finally, Kroll develops its own recommended equity, or market risk premium, by
7 employing an analysis that takes into consideration a wide range of economic
8 information, multiple risk premium estimation methodologies, and the current state of the
9 economy by observing measures such as the level of stock indices and corporate spreads
10 as indicators of perceived risk. Based on this methodology, and utilizing a “normalized”
11 risk-free rate of 3.0%, Kroll concludes the current expected, or forward-looking, market
12 risk premium is 5.5%, implying an expected return on the market of 8.5%.^{43/}

13 Importantly, Kroll’s market risk premiums are measured over a 20-year Treasury
14 bond. Because I am relying on a projected 30-year Treasury bond yield, the results of my
15 CAPM analysis should be considered conservative estimates for the cost of equity.

16 **Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?**

17 A. As shown on my Exhibit AWEC-CUB/118, using a current market risk-free rate of
18 2.37%, a projected market return of 12.04%, produces a market risk premium of
19 approximately 9.67%, combined with the beta of 0.73 indicates a CAPM return estimate
20 of 9.45%.

^{42/} *Id.*

^{43/} Kroll: “U.S. Normalized Risk-Free Rate Increased from 2.5% to 3.0% Effective April 7, 2022.”

1 Using a market return of 12.04%, with a projected risk-free rate of 3.30%,
2 produces a market risk premium of 8.74%. This market risk premium and risk-free rate
3 with a normalized utility beta of 0.73, indicates a CAPM return of about 9.70%.

4 I believe based on current risk-free rates and the results of my analysis, the most
5 reasonable CAPM return estimate for PacifiCorp in this case is approximately 9.7%.

6 **III.H. Return on Equity Summary**

7 **Q. BASED ON THE RESULTS OF YOUR RETURN ON COMMON EQUITY**
8 **ANALYSES DESCRIBED ABOVE, WHAT RETURN ON COMMON EQUITY**
9 **DO YOU RECOMMEND FOR PACIFICORP?**

10 A. Based on my analyses, I recommend PacifiCorp's current market cost of equity be in the
11 range of 8.80% to 9.70%, with an approximate midpoint of 9.25%.

<u>Description</u>	<u>Results</u>
DCF	8.80%
Risk Premium	9.00%
CAPM	9.70%

12 My recommended return on common equity of 9.25% falls at the midpoint of the
13 range of 8.80% to 9.70%. The low-end of my range is based on my DCF studies, and the
14 high-end is based on my CAPM. My risk premium study also falls in this range.

15 My return on equity estimates reflect observable market evidence, the impact of
16 Federal Reserve policies on current and expected long-term capital market costs, an
17 assessment of the current risk premium built into current market securities, and a general

1 assessment of the current investment risk characteristics of the regulated utility industry
2 and the market's demand for utility securities.

3 **III.I. Financial Integrity**

4 **Q. WILL YOUR RECOMMENDED OVERALL RATE OF RETURN SUPPORT AN**
5 **INVESTMENT GRADE BOND RATING FOR PACIFICORP?**

6 A. Yes. I have reached this conclusion by comparing the key credit rating financial ratios
7 for PacifiCorp at my proposed return on equity and capital structure to S&P's benchmark
8 financial ratios using S&P's new credit metric ranges.

9 **Q. PLEASE DESCRIBE THE MOST RECENT S&P FINANCIAL RATIO CREDIT**
10 **METRIC METHODOLOGY.**

11 A. S&P publishes a matrix of financial ratios corresponding to its assessment of the business
12 risk of utility companies and related bond ratings. On May 27, 2009, S&P expanded its
13 matrix criteria by including additional business and financial risk categories.^{44/}

14 Based on S&P's most recent credit matrix, the business risk profile categories are
15 "Excellent," "Strong," "Satisfactory," "Fair," "Weak," and "Vulnerable." Most utilities
16 have a business risk profile of "Excellent" or "Strong."

17 The financial risk profile categories are "Minimal," "Modest," "Intermediate,"
18 "Significant," "Aggressive," and "Highly Leveraged." Most of the utilities have a
19 financial risk profile of "Aggressive." Based on the most recent S&P report, PacifiCorp
20 has an "Excellent" business risk profile and a "Significant" financial risk profile.

^{44/} S&P updated its 2008 credit metric guidelines in 2009, and incorporated utility metric benchmarks with the general corporate rating metrics. *Standard & Poor's RatingsDirect: "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded,"* May 27, 2009.

1 **Q. PLEASE DESCRIBE S&P'S USE OF THE FINANCIAL BENCHMARK RATIOS**
2 **IN ITS CREDIT RATING REVIEW.**

3 A. S&P evaluates a utility's credit rating based on an assessment of its financial and
4 business risks. A combination of financial and business risks equates to the overall
5 assessment of PacifiCorp's total credit risk exposure. On November 19, 2013, S&P
6 updated its methodology. In its update, S&P published a matrix of financial ratios that
7 defines the level of financial risk as a function of the level of business risk.

8 S&P publishes ranges for primary financial ratios that it uses as guidance in its
9 credit review for utility companies. The two core financial ratio benchmarks it relies on
10 in its credit rating process include: (1) Debt to Earnings Before Interest, Taxes,
11 Depreciation and Amortization ("EBITDA"); and (2) Funds From Operations ("FFO") to
12 Total Debt.^{45/}

13 **Q. HOW DID YOU APPLY S&P'S FINANCIAL RATIOS TO TEST THE**
14 **REASONABLENESS OF YOUR RATE OF RETURN RECOMMENDATIONS?**

15 A. I calculated each of S&P's financial ratios based on PacifiCorp's cost of service for its
16 regulated utility operations in its Oregon service territory. While S&P would normally
17 look at total consolidated PacifiCorp financial ratios in its credit review process, my
18 investigation in this proceeding is not the same as S&P's. I am attempting to judge the
19 reasonableness of my proposed cost of capital for rate-setting in PacifiCorp's Oregon
20 regulated utility operations. Hence, I am attempting to determine whether my proposed
21 rate of return will in turn support cash flow metrics, balance sheet strength, and earnings
22 that will support an investment grade bond rating and PacifiCorp's financial integrity.
23 However, because I am measuring this based on retail operations for purposes of

^{45/} *Standard & Poor's RatingsDirect*: "Criteria: Corporate Methodology," November 19, 2013.

1 determining a rate of return that is fair and reasonable, I allocated the total Company
2 adjusted debt leverage to retail operations using a rate base allocation factor. This
3 allocated retail total adjusted debt will then be used to calculate the credit metrics in
4 support of a fair rate of return in this proceeding.

5 **Q. DID YOU INCLUDE ANY OFF-BALANCE SHEET (“OBS”) DEBT**
6 **EQUIVALENTS?**

7 A. Yes. PacifiCorp witness Nikki Kobliha identified an amount of test year debt to be used
8 to calculate the credit metric financial ratios for PacifiCorp at page 22 of her direct
9 testimony. There, she states that the amount of long-term debt used to support rate base
10 investments should be increased by \$850 million in order to derive the total amount of
11 debt considered by credit rating agencies in assessing PacifiCorp’s financial risk. This
12 rating agency debt includes off-balance sheet debt equivalents and debt not included in
13 the ratemaking capital structure such as short-term debt.

14 **Q. PLEASE DESCRIBE THE RESULTS OF THIS CREDIT METRIC ANALYSIS**
15 **AS IT RELATES TO PACIFICORP.**

16 A. The S&P financial metric calculations for PacifiCorp at a 9.25% return are developed on
17 Exhibit AWEC-CUB/119, Gorman/Page 1. The credit metrics produced below, with
18 PacifiCorp’s financial risk profile from S&P of “Significant” and business risk profile of
19 “Excellent,” will be used to assess the strength of the credit metrics based on
20 PacifiCorp’s retail operations in the state of Oregon.

21 The adjusted debt ratio for credit metric purposes at my proposed capital structure
22 is 51.0%, which aligns with the industry median adjusted debt ratio for A+/A rated

1 utilities of 49%/53%.^{46/} A lower debt ratio indicates, all else equal, less financial risk.
2 PacifiCorp's financial risk is significantly lower than the industry.

3 Based on an equity return of 9.25% and my proposed common equity ratio of
4 50.95%, PacifiCorp will be provided an opportunity to produce a Debt to Earnings
5 Before Interest, Taxes, Depreciation and Amortization ("EBITDA") ratio of 4.2x. This is
6 within S&P's "Significant" guideline range of 3.5x to 4.5x.^{47/}

7 PacifiCorp's retail utility operations FFO to total debt coverage at a 9.25% equity
8 return and 50.95% equity ratio is 18%, which is within S&P's "Significant" metric
9 guideline range of 13% to 23%. This ratio is again within the FFO/total debt range that
10 will support PacifiCorp's credit rating.

11 I conclude that PacifiCorp's core credit metrics ratios based on my proposed
12 capital structure and my return on equity will support its investment grade credit rating of
13 A. Significantly, my recommended overall rate of return will accomplish these
14 objectives while minimizing PacifiCorp's cost of service and supporting the most
15 competitive rates that remain just and reasonable from a rate-setting standpoint.

16 **Q. DOES THIS FINANCIAL INTEGRITY ASSESSMENT SUPPORT YOUR**
17 **RECOMMENDED OVERALL RATE OF RETURN FOR PACIFICORP?**

18 A. Yes. As noted above, I believe my return on equity and my proposed capital structure
19 represent fair compensation in today's very low capital market costs, and as outlined
20 above, my overall rate of return will provide PacifiCorp an opportunity to earn credit
21 metrics that will support its bond rating.

^{46/} *Id.*, Gorman/Page 4.

^{47/} *Standard & Poor's RatingsDirect*[®]: "Criteria: Corporate Methodology," November 19, 2013.

1 **IV. RESPONSE TO PACIFICORP WITNESS MS. BULKLEY**

2 **Q. WHAT RETURN ON COMMON EQUITY IS PACIFICORP PROPOSING FOR**
3 **THIS PROCEEDING?**

4 A. Ms. Bulkley recommends a return on equity based on her market-based model results that
5 fall in the range of 9.90% to 10.75%, with a point estimate requested return on equity of
6 9.80%. Her recommended return is based on forward-looking estimates including
7 forecasted growth rates, projected interest rates, and a forward-looking risk premium in
8 the CAPM.^{48/}

9 **Q. ARE MS. BULKLEY'S RETURN ON EQUITY ESTIMATES REASONABLE?**

10 A. No. Ms. Bulkley's estimated return on equity is overstated and should be rejected. Ms.
11 Bulkley's analyses produce excessive results for various reasons, including the following:

- 12 1. Her constant growth DCF results are based on unsustainably high growth rates;
- 13 2. Her DCF results are based on an asymmetrical application of outlier thresholds,
14 artificially inflating her averages;
- 15 3. Her CAPM is based on inflated market risk premiums; and
- 16 4. Her ECAPM inappropriately relies on adjusted betas and should be rejected.
- 17 5. She erroneously ignores two-thirds of her Bond Yield Plus Risk Premium
18 ("BYPRP").

19 **Q. PLEASE COMPARE YOUR RECOMMENDED RETURN ON EQUITY WITH**
20 **MS. BULKLEY'S RETURN ON EQUITY ESTIMATES.**

21 A. Ms. Bulkley's return on equity estimates are summarized in Table 13 below. In the
22 "Adjusted" Column 2, I show the results with prudent and sound adjustments to correct
23 the flaws referenced above. With such adjustments to Ms. Bulkley's proxy group's DCF,
24 CAPM, and Risk Premium return estimates, Ms. Bulkley's studies show that my 9.25%
25 recommended return on equity for PacifiCorp is reasonable.

^{48/} Exhibit PAC/300, Bulkley/Page 3 and Bulkley/Page 4.

TABLE 13

Bulkley's Adjusted Return on Equity Estimates

<u>Description</u>	<u>Bulkley¹</u> (1)	<u>Adjusted</u> (2)
<u>Constant Growth DCF (Mean/Median)</u>		
30-Day Average	9.39%/9.44%	N/A
90-Day Average	9.43%/9.50%	N/A
180-Day Average	<u>9.42%/9.35%</u>	<u>N/A</u>
DCF Average	9.41%/9.43%	9.41%/9.43%
<u>Multi-Stage Mean Growth DCF (Mean/Median)</u>		
30-Day Average	9.17%/9.45%	8.05%/8.34%
90-Day Average	9.22%/9.50%	8.10%/8.40%
180-Day Average	<u>9.21%/9.48%</u>	<u>8.09%/8.38%</u>
MSDCF Average	9.20%/9.47%	8.08%/8.37%
<u>CAPM (Value Line Beta)</u>		
Current 30-Yr Treasury (1.87%)	11.28%	10.28%/9.95%
Near-Term Projected 30-Yr Treasury (2.52%)	11.36%	10.36%/10.04%
Long-Term Projected 30-Yr Treasury (3.40%)	11.47%	10.46%/10.17%
<u>CAPM (Bloomberg Beta)</u>		
Current 30-Yr Treasury (1.87%)	10.56%	9.84%/9.85%
Near-Term Projected 30-Yr Treasury (2.52%)	10.68%	9.94%/9.95%
Long-Term Projected 30-Yr Treasury (3.40%)	10.85%	10.08%/10.09%
<u>CAPM (Long-Term Beta)</u>		
Current 30-Yr Treasury (1.87%)	9.72%	8.85%
Near-Term Projected 30-Yr Treasury (2.52%)	9.90%	9.02%
Long-Term Projected 30-Yr Treasury (3.40%)	<u>10.14%</u>	<u>9.26%</u>
CAPM Average	10.66%	9.79%/9.69%
<u>Bond Yield Plus Risk Premium</u>		
Current 30-Yr Treasury (1.87%)	9.47%	
Near-Term Projected 30-Yr Treasury (2.52%)	9.75%	
Long-Term Projected 30-Yr Treasury (3.40%)	<u>10.13%</u>	
BYPRP Average	9.78%	9.63%
Recommended Range	9.9%-10.75%	8.4%-9.70%
Recommended ROE	9.8%	9.25%

Source:

¹ Exhibit PAC/302, Bulkley/1.

1 As shown in Table 13 above, corrections and improvements to the accuracy of
2 Ms. Bulkley's return on equity estimates support a ROE for PacifiCorp of 9.20% in the
3 current market.

4 While my adjustments are presented in Adjusted Column 2 of Table 13 above, a
5 description of the basis for my adjustments to Ms. Bulkley's return on equity estimates is
6 presented below.

7 **IV.A. Bulkley's Constant Growth DCF**

8 **Q. PLEASE DESCRIBE MS. BULKLEY'S CONSTANT GROWTH DCF RETURN**
9 **ESTIMATES.**

10 A. Ms. Bulkley's constant growth DCF returns are developed on her Exhibit PAC/304. Ms.
11 Bulkley's constant growth DCF models are based on consensus growth rates published
12 by *Yahoo! Finance and Zacks* and individual growth rate projections made by *Value*
13 *Line*.

14 She relied on dividend yield calculations based on average stock prices over four
15 different time periods: 30-day, 90-day and 180-day ending December 31, 2021. Ms.
16 Bulkley's DCF mean results fall in the range of 9.39% to 9.43%, and her median results
17 fall in the range of 9.35% to 9.50%.^{49/}

18 **Q. ARE THE RESULTS OF MS. BULKLEY'S CONSTANT GROWTH DCF**
19 **REFLECTED IN HER ROE RECOMMENDATION?**

20 A. No. Ms. Bulkley ignores the results of the Constant Growth DCF in her ROE
21 recommendation. Her recommendation of 9.80% is well above the median and mean
22 results of her own study as seen in Table 13 above. Instead, Ms. Bulkley relies only on
23 the Median High results when considering the Constant Growth DCF which improperly

^{49/} Exhibit PAC/304, Bulkley/1.

1 selects the highest published growth rate when calculating the Constant Growth DCF and
2 is not indicative of the consensus industry analysts' opinions. In addition, Ms. Bulkley
3 elected not to publish the mean results of her own constant growth DCF study which are
4 in the range of 50-70 basis points lower than the median results depending the on the
5 study period as shown in Table 13 above.

6 **IV.B. Bulkley's Multi-Stage Growth DCF**

7 **Q. PLEASE DESCRIBE MS. BULKLEY'S MULTI-STAGE GROWTH DCF**
8 **RETURN ESTIMATES.**

9 A. Ms. Bulkley's Multi-Stage Growth DCF returns are developed on her Exhibit PAC/305.
10 Ms. Bulkley's first-stage growths are based on growth rates published by *Yahoo! Finance*
11 *and Zacks* and individual growth rate projections made by *Value Line*. In addition, she
12 develops the third stage growth on Exhibit PAC/306 by calculating a long-term GDP
13 growth rate of 5.49%. Ms. Bulkley's Multi-Stage Growth DCF mean results fall in the
14 range of 9.17% to 9.22%, and her median results fall in the range of 9.45% to 9.50%.^{50/}

15 **Q. ARE THE RESULTS OF MS. BULKLEY'S MULTI-STAGE GROWTH DCF**
16 **REFLECTED IN HER ROE RECOMMENDATION?**

17 A. No. Similar to the Constant Growth DCF Study, Ms. Bulkley ignores the results of the
18 Multi-Stage Growth DCF in her ROE recommendation. Her recommendation of 9.80%
19 is well above the median and mean results of her own study as seen in Table 13 above.
20 Instead, Ms. Bulkley relies only on the Median High results when considering the Multi-
21 Stage Growth DCF which improperly selects the highest published growth rate when
22 calculating the Constant Growth DCF and is not indicative of the consensus industry
23 analysts' opinions. In addition, Ms. Bulkley elected not to publish the mean results of her

^{50/} Exhibit PAC/305.

1 own constant growth DCF study which are in the range of 270-280 basis points lower
2 than the median results depending the on the study period as shown in Table 13 above.

3 **Q. ARE THE MULTI-STAGE GROWTH DCF RESULTS PRODUCED BY MS.**
4 **BULKLEY REASONABLE?**

5 A. No. As discussed in regard to my own DCF study, her third-stage growth rates of 5.49%
6 is substantially higher than the long-term sustainable growth rate of 4.10% as described
7 above.^{51/} Specifically, Ms. Bulkley's third-stage growth rate developed in Exhibit
8 PAC/306 based on her calculated Longer-Term GDP Growth Rate of 5.49% is
9 substantially higher than the long-term growth rates published by independent
10 economists, all of which fall in the range of 3.9% - 4.5% as shown on Table 9 GDP
11 Forecasts above.

12 **Q. WHY DO YOU BELIEVE THAT MS. BULKLEY'S LONG-TERM GDP**
13 **GROWTH FORECAST DOES NOT REASONABLY ALIGN WITH**
14 **INDEPENDENT ECONOMISTS' PROJECTIONS OF FUTURE NOMINAL GDP**
15 **GROWTH?**

16 A. The primary difference between Ms. Bulkley's GDP growth forecast and that of
17 independent economists is her means of estimating real GDP growth. Ms. Bulkley's
18 derives a forward-looking real GDP growth estimate of 3.13% based on actual historical
19 real GDP growth over the period 1929 through 2020 of 3.13%. She then combines this
20 historical real GDP growth with forecasted inflation outlooks of around 2.28%.^{52/} Ms.
21 Bulkley's forecasted nominal GDP growth breaks from consensus independent
22 economists' projections of growth based on this real GDP growth outlook. Specifically,
23 as I outlined above in Table 9 of my testimony, real GDP growth projections made by
24 several independent economists generally range around 2.2% down to 1.7%. *Blue Chip*

^{51/} See generally pages 37-40 of this testimony.

^{52/} Ms. Bulkley's Exhibit PAC/306.

1 *Economic Indicators'* consensus projection of real GDP growth over the next five to ten
2 years is around 2%. As such, Ms. Bulkley's projected nominal GDP growth does not
3 reflect the investment community's outlook of future GDP growth, and therefore is not
4 reasonably capturing investor expectations in developing growth outlooks used in her
5 multi-stage DCF model.

6 **Q. CAN MS. BULKLEY'S DCF RESULTS BE CORRECTED TO ACCOUNT FOR**
7 **MORE REASONABLE ASSUMPTIONS?**

8 A. Yes. Simply using a third-stage growth rate that is more indicative of the long-term
9 expected growth would improve the accuracy of her Multi-Stage DCF Study. I illustrate
10 the impact of this adjustment in my revised Bulkley Multi-Stage DCF Study shown in
11 Exhibit AWEC-CUB/120. As can be seen in Table 13 above, this adjustment produces
12 mean results in the range of 8.05% to 8.10%, and her median results fall in the range of
13 8.34% to 8.50%. Notably, these are more consistent with my own Multi-Stage DCF
14 results.

15 **IV.C. Bulkley's CAPM Studies**

16 **Q. PLEASE DESCRIBE MS. BULKLEY'S CAPM ANALYSIS.**

17 A. As indicated above, the CAPM analysis is based upon the theory that the market required
18 rate of return for a security is equal to the risk-free rate, plus a risk premium associated
19 with the specific security. The risk premium associated with the specific security is
20 expressed mathematically as:

21 $B_i \times (R_m - R_f)$ where:

22 B_i = Beta - Measure of the risk for stock

23 R_m = Expected return for the market portfolio

24 R_f = Risk-free rate

1 **Q. PLEASE DESCRIBE THE ISSUES YOU HAVE WITH MS. BULKLEY'S CAPM**
2 **STUDY.**

3 A. My primary issue with Ms. Bulkley's CAPM study is her sole reliance on a single
4 DCF-derived expected market return ultimately used to estimate the market risk
5 premiums, which inflates her results.

6 **Q. PLEASE DESCRIBE MS. BULKLEY'S MARKET RISK PREMIUMS.**

7 A. Ms. Bulkley derived her market risk premiums by conducting a DCF analysis for the
8 market (S&P 500) and subtracting three estimates of the risk-free rate. In similar fashion
9 to my own DCF-derived expected return on the market, Ms. Bulkley excluded S&P 500
10 member companies from the analysis that had growth rates less than 0% and greater than
11 20%. Ms. Bulkley used three market risk premium estimates of 10.76%, 10.11%, and
12 9.23% based on a DCF market return of 12.63% less the current, near-term, and projected
13 30-year Treasury bond yields of 1.87%, 2.52%, and 3.40%, respectively.^{53/}

14 **Q. WHAT ISSUES DO YOU HAVE WITH MS. BULKLEY'S DCF-DERIVED**
15 **MARKET RISK PREMIUM ESTIMATES?**

16 A. My primary concern is her sole reliance on a DCF-derived expected return on the market
17 to form the basis for her market risk premium estimates. Ms. Bulkley recognizes the
18 need to apply multiple analytical methods for estimating the cost of equity, however, she
19 only chose to apply, and consider the results of the constant growth DCF to estimate the
20 cost of equity for the S&P 500. As Ms. Bulkley states in her testimony,

21 Because the cost of equity is not directly observable, it must be estimated
22 based on both quantitative and qualitative information. When faced with
23 the task of estimating the cost of equity, analysts and investors gather and
24 evaluate as much relevant data as reasonably can be analyzed. Several
25 models have been developed to estimate the cost of equity, and I use
26 multiple approaches to estimate the cost of equity. As a practical matter,

^{53/} Exhibit PAC/307.

1 however, all of the models available for estimating the cost of equity are
2 subject to limiting assumptions or other methodological constraints.
3 Consequently, many well-regarded finance texts recommend using
4 multiple approaches when estimating the cost of equity.^{54/}

5 To be consistent with her testimony, Ms. Bulkley should have implemented
6 alternative measures of the expected market return and market risk premium. As Dr.
7 Morin notes in his book, *New Regulatory Finance*,

8 Although realized returns for a particular time period can deviate
9 substantially from what was expected, it is reasonable to believe that long-
10 run average realized returns provide an unbiased estimate of what were
11 expected returns. This is the fundamental rationale behind the historical
12 risk premium approach. Analysts and regulators often assume that the
13 average historical risk premium over long periods is the best proxy for the
14 future risk premium.^{55/}

15 Dr. Morin concludes that “[t]here are two broad approaches to estimating the risk
16 premium: retrospective and prospective. Each has its own strengths and weaknesses,
17 hence the need to utilize both methods.”^{56/} As such, Ms. Bulkley should have considered
18 the results of multiple estimates of the expected market return from multiple methods. I
19 have provided examples of other such methods of estimating the expected market return
20 and market risk premium above, in reference to my application of the CAPM.

21 **Q. CAN MS. BULKLEY’S CAPM ANALYSIS BE REVISED TO REFLECT A**
22 **MORE REASONABLE ESTIMATE OF THE MARKET RISK PREMIUM?**

23 A. Yes. Subtracting Ms. Bulkley’s risk-free rates of 1.87%, 2.52%, and 3.40% from my
24 average return on the market of 11.37% produces market risk premium estimates of
25 9.50%, 8.85%, and 7.97%, respectively. By applying these corrected market risk
26 premiums to her average *Value Line*, Bloomberg and her historical beta estimates, Ms.

^{54/} Exhibit PAC/300, Bulkley/30.

^{55/} Morin, Dr. Roger A, “New Regulatory Finance,” at p. 156.

^{56/} *Id.* at p. 162.

1 Bulkley's CAPM would be in the range of 8.85% to 10.46% with an average of 9.79%.
2 Similarly, the median results would be in the range of 8.85% to 10.17% with a mean of
3 9.69%.

4 **IV.D. Bulkley's Bond Yield Plus ("BYP") Risk Premium**

5 **Q. PLEASE DESCRIBE MS. BULKLEY'S BYP RISK PREMIUM**
6 **METHODOLOGY.**

7 A. As shown on her Exhibit PAC/308, Ms. Bulkley constructs a risk premium return on
8 equity estimate based on the premise that equity risk premiums are inversely related to
9 interest rates. She estimates the average utility equity risk premiums of approximately
10 6.04% over the period 1992 through 2021. She performs a linear regression using the 30-
11 Year Treasury yield as the independent variable (x-axis) and the risk premium as the
12 dependent variable (y-axis). This model produces a regression formula, which she
13 applies by inputting the current, near-term, and long-term projected 30-year Treasury
14 bond yields of 1.87%, 2.42%, and 3.40%, respectively. The resulting expected equity
15 risk premiums based on these inputs are 7.61%, 7.23%, and 6.73%, respectively. She
16 then adds these estimated risk premiums to their corresponding levels of interest rates to
17 produce return on equity estimates of 9.47%, 9.75%, and 10.13%, respectively. The
18 average of her three risk premium method results is 9.78%.

19 **Q. DO YOU HAVE ANY INITIAL COMMENTS REGARDING HER RISK**
20 **PREMIUM RESULTS?**

21 A. Yes. Ms. Bulkley's methodology produces results in the range of 9.47% to 10.13%.
22 However, her recommended range of reasonableness is 9.9% to 10.75%. Given her
23 recommended range starts at 9.9%, she seems to provide little weight to the risk premium
24 results based on her current and near-term interest rate levels. This is curious considering

1 that during the last eight quarters used in her risk premium analysis, all of the quarterly
2 average authorized ROEs are lower than her average risk premium model result of
3 9.78%. During those most recent eight quarters, there were 73 authorized ROE outcomes
4 Ms. Bulkley used, which is slightly more than 10% of her entire dataset. Meanwhile, her
5 high-end risk premium result of 10.13% has not been realized once in the last 28 quarters.

6 **Q. IS MS. BULKLEY'S BYP RISK PREMIUM METHODOLOGY REASONABLE?**

7 A. I generally disagree with the application of a regression analysis to estimate the cost of
8 equity in the risk premium model. However, Ms. Bulkley's results are largely consistent
9 with mine at this time. It is her interpretation and weighting of the results to determine
10 her recommended range that are mostly unreasonable at this time. As I explained above,
11 it is hard to imagine how she reasonably ignores two out of her three risk premium ROE
12 estimates even though they are consistent with the most recent eight quarters, while
13 relying on one of the highest risk premium ROE estimates. Clearly her interpretation of
14 her own results is skewed and the lower-end of her recommended range should be well
15 below 10.0%.

16 **V. CONCLUSION**

17 **Q. WHAT IS YOUR CONCLUSION REGARDING THE APPROPRIATE RETURN**
18 **ON EQUITY FOR THE COMPANY BASED ON YOUR ANALYSIS?**

19 A. My analysis supports that a reasonable range of the current cost of equity is from 8.80%
20 to 9.70%, with a midpoint estimate of 9.25%. Should the Commission adopt a lower
21 equity ratio that is more in-line with the industry as well as the proxy group, I conclude
22 that an ROE of 9.2% is reasonable for PacifiCorp. Further, the Commission should reject
23 Ms. Bulkley's recommended cost of common equity for the reasons outlined above.

1 **Q. DOES THIS CONCLUDE YOUR OPENING TESTIMONY?**

2 A. Yes, it does.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/101
QUALIFICATION STATEMENT OF
MICHAEL P. GORMAN**

Qualifications of Michael P. Gorman

1 **Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140,
3 Chesterfield, MO 63017.

4 **Q PLEASE STATE YOUR OCCUPATION.**

5 A I am a consultant in the field of public utility regulation and a Managing Principal with
6 the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory
7 consultants.

8 **Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND WORK**
9 **EXPERIENCE.**

10 A In 1983 I received a Bachelor of Science Degree in Electrical Engineering from Southern
11 Illinois University, and in 1986, I received a Master's Degree in Business Administration
12 with a concentration in Finance from the University of Illinois at Springfield. I have also
13 completed several graduate level economics courses.

14 In August of 1983, I accepted an analyst position with the Illinois Commerce
15 Commission ("ICC"). In this position, I performed a variety of analyses for both formal
16 and informal investigations before the ICC, including: marginal cost of energy, central
17 dispatch, avoided cost of energy, annual system production costs, and working capital. In
18 October of 1986, I was promoted to the position of Senior Analyst. In this position, I
19 assumed the additional responsibilities of technical leader on projects, and my areas of
20 responsibility were expanded to include utility financial modeling and financial analyses.

21 In 1987, I was promoted to Director of the Financial Analysis Department. In this
22 position, I was responsible for all financial analyses conducted by the Staff. Among
23 other things, I conducted analyses and sponsored testimony before the ICC on rate of

1 return, financial integrity, financial modeling and related issues. I also supervised the
2 development of all Staff analyses and testimony on these same issues. In addition, I
3 supervised the Staff's review and recommendations to the Commission concerning utility
4 plans to issue debt and equity securities.

5 In August of 1989, I accepted a position with Merrill-Lynch as a financial
6 consultant. After receiving all required securities licenses, I worked with individual
7 investors and small businesses in evaluating and selecting investments suitable to their
8 requirements.

9 In September of 1990, I accepted a position with Drazen-Brubaker & Associates,
10 Inc. ("DBA"). In April 1995, the firm of Brubaker & Associates, Inc. was formed. It
11 includes most of the former DBA principals and Staff. Since 1990, I have performed
12 various analyses and sponsored testimony on cost of capital, cost/benefits of utility
13 mergers and acquisitions, utility reorganizations, level of operating expenses and rate
14 base, cost of service studies, and analyses relating to industrial jobs and economic
15 development. I also participated in a study used to revise the financial policy for the
16 municipal utility in Kansas City, Kansas.

17 At BAI, I also have extensive experience working with large energy users to
18 distribute and critically evaluate responses to requests for proposals ("RFPs") for electric,
19 steam, and gas energy supply from competitive energy suppliers. These analyses include
20 the evaluation of gas supply and delivery charges, cogeneration and/or combined cycle
21 unit feasibility studies, and the evaluation of third-party asset/supply management
22 agreements. I have participated in rate cases on rate design and class cost of service for
23 electric, natural gas, water and wastewater utilities. I have also analyzed commodity

1 pricing indices and forward pricing methods for third party supply agreements, and have
2 also conducted regional electric market price forecasts.

3 In addition to our main office in St. Louis, the firm also has branch offices in
4 Corpus Christi, Texas; Detroit, Michigan; Louisville, Kentucky and Phoenix, Arizona.

5 **Q HAVE YOU EVER TESTIFIED BEFORE A REGULATORY BODY?**

6 A Yes. I have sponsored testimony on cost of capital, revenue requirements, cost of service
7 and other issues before the Federal Energy Regulatory Commission and numerous state
8 regulatory commissions including: Alaska, Arkansas, Arizona, California, Colorado,
9 Delaware, the District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa,
10 Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota,
11 Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico,
12 New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, South Carolina,
13 South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia,
14 Wisconsin, Wyoming, and before the provincial regulatory boards in Alberta, Nova
15 Scotia, and Quebec, Canada. I have also sponsored testimony before the Board of Public
16 Utilities in Kansas City, Kansas; presented rate setting position reports to the regulatory
17 board of the municipal utility in Austin, Texas, and Salt River Project, Arizona, on behalf
18 of industrial customers; and negotiated rate disputes for industrial customers of the
19 Municipal Electric Authority of Georgia in the LaGrange, Georgia district.

20 **Q PLEASE DESCRIBE ANY PROFESSIONAL REGISTRATIONS OR**
21 **ORGANIZATIONS TO WHICH YOU BELONG.**

22 A I earned the designation of Chartered Financial Analyst (“CFA”) from the CFA Institute.
23 The CFA charter was awarded after successfully completing three examinations which

1 covered the subject areas of financial accounting, economics, fixed income and equity
2 valuation and professional and ethical conduct. I am a member of the CFA Institute's
3 Financial Analyst Society.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/102
RATE OF RETURN**

PacifiCorp

Gorman Recommended Rate of Return (December 31, 2023)

<u>Line</u>	<u>Description</u>	<u>Weight</u> (1)	<u>Cost</u> (2)	<u>Weighted</u> <u>Cost</u> (3)
1	Long-Term Debt	49.04%	4.38%	2.15%
2	Preferred Stock	0.01%	6.75%	0.00%
3	Common Equity	<u>50.95%</u>	9.25%	<u>4.71%</u>
4	Total	100.00%		6.86%

Source:

Exhibit AWEC-CUB/100, Table 5 - Proposed Capital Structure.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

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Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/103
VALUATION METRICS**

PacifiCorp

Electric Utilities
(Valuation Metrics)

Price to Earnings (P/E) Ratio¹

Line	Company	20-Year																				
		Average (1)	2021 ² (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)	2005 (18)	2004 (19)	2003 (20)	2002 (21)
1	ALLETE	18.08	16.70	18.28	24.75	22.17	23.05	18.63	15.06	17.23	18.59	15.88	14.66	15.98	16.08	13.95	14.78	16.55	17.91	25.21	N/A	N/A
2	Alliant Energy	16.81	21.90	21.23	21.16	19.14	20.60	22.30	18.07	16.60	15.28	14.50	14.45	12.47	13.86	13.43	15.08	16.82	12.59	14.00	12.69	19.93
3	Ameren Corp.	16.54	21.10	22.23	22.09	18.29	20.60	18.29	17.55	16.71	16.52	13.35	11.93	9.66	9.26	14.21	17.45	19.39	16.72	16.28	13.51	15.78
4	American Electric Power	14.92	17.90	19.57	21.41	18.04	19.33	15.16	15.77	15.88	14.49	13.77	11.92	13.42	10.03	13.06	16.27	12.91	13.70	12.42	10.66	12.68
5	Avangrid, Inc.	26.79	25.30	25.34	22.15	26.05	27.27	20.49	40.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	18.44	20.70	21.18	14.98	24.54	23.37	18.80	17.60	17.28	14.64	19.30	14.08	12.74	11.42	14.97	30.88	15.39	19.45	24.43	13.84	19.27
7	Black Hills	17.74	16.90	17.00	21.18	16.82	19.48	22.29	16.14	19.03	18.24	17.13	31.13	18.10	9.93	N/A	15.02	15.77	17.27	17.13	15.95	12.52
8	CenterPoint Energy	16.63	26.60	15.92	19.45	36.99	17.91	21.91	18.10	16.96	18.75	14.85	14.58	13.78	11.81	11.27	15.00	10.27	19.06	17.84	6.05	5.59
9	CMS Energy Corp.	18.08	23.70	23.32	24.28	20.31	21.32	20.94	18.29	17.30	16.32	15.07	13.62	12.46	13.56	10.87	26.84	22.18	12.60	12.39	N/A	N/A
10	Consol. Edison	16.07	19.50	20.08	21.10	17.10	19.77	18.80	15.59	15.90	14.72	15.39	15.08	13.30	12.55	12.29	13.78	15.49	15.13	18.21	14.30	13.28
11	Dominion Resources	20.50	20.20	43.94	35.21	21.80	22.17	21.33	22.14	22.97	19.25	18.91	17.27	14.35	12.74	13.78	20.63	15.98	24.89	15.07	15.24	12.05
12	DTE Energy	15.90	19.60	16.30	19.88	17.41	18.59	18.97	18.11	14.91	17.92	14.89	13.51	12.27	10.41	14.81	18.27	17.43	13.80	16.04	13.69	11.28
13	Duke Energy	17.63	19.60	22.40	17.71	19.41	19.93	21.25	18.22	17.91	17.45	17.46	13.76	12.69	13.32	17.28	16.13	N/A	N/A	N/A	N/A	N/A
14	Edison Int'l	16.22	34.00	34.93	16.66	N/A	17.23	17.92	14.77	13.05	12.70	9.71	11.81	10.32	9.72	12.36	16.03	12.99	11.74	37.59	6.97	7.78
15	El Paso Electric	17.68	N/A	N/A	N/A	26.85	21.78	18.66	18.33	16.38	15.88	14.47	12.60	10.72	10.79	11.89	15.26	16.92	26.72	22.03	18.26	22.99
16	Entergy Corp.	13.81	15.40	15.26	16.50	13.81	15.01	10.92	12.53	12.89	13.21	11.22	9.06	11.57	11.98	16.56	19.30	14.28	16.28	15.09	13.77	11.53
17	Eversource Energy	18.46	22.80	24.33	22.11	18.73	19.47	18.69	18.11	17.92	16.94	19.86	15.35	13.42	11.96	13.66	18.75	27.07	19.76	20.77	13.35	16.07
18	Evelyn, Inc.	21.02	17.90	21.71	21.76	22.71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	14.98	18.10	15.39	15.75	20.09	13.41	18.68	12.58	16.02	13.43	19.08	11.30	10.97	11.49	17.97	18.22	16.53	15.37	12.99	11.77	10.46
20	FirstEnergy Corp.	18.24	17.70	20.24	23.78	26.47	11.41	15.91	17.02	39.79	13.06	21.10	22.39	11.75	13.02	15.64	15.59	14.23	16.07	14.13	22.47	12.95
21	Fortis Inc.	19.29	21.30	20.63	19.22	17.08	16.81	21.60	18.00	24.29	19.97	20.12	18.79	18.22	16.36	17.48	21.14	17.68	N/A	N/A	N/A	N/A
22	Great Plains Energy	15.52	N/A	N/A	N/A	N/A	NMF	17.98	19.37	16.47	14.19	15.53	16.11	12.10	16.03	20.55	16.35	18.30	13.96	12.59	12.23	11.09
23	Hawaiian Elec.	18.60	22.60	21.48	21.27	18.95	20.69	13.56	20.40	15.88	16.21	15.81	17.09	18.59	19.79	23.16	21.57	20.33	18.27	19.18	13.76	13.47
24	IDACORP, Inc.	17.04	23.30	19.88	22.31	20.50	20.60	19.06	16.22	14.67	13.45	12.41	11.54	11.83	10.20	13.93	18.19	15.07	16.70	15.49	26.51	18.88
25	MGE Energy	19.80	25.20	26.41	28.36	25.11	29.36	24.90	20.28	17.19	17.01	17.23	15.82	14.98	15.14	14.22	15.01	15.88	22.40	17.98	17.55	15.96
26	NextEra Energy, Inc.	18.17	26.80	31.75	26.79	24.80	21.65	20.71	16.89	17.25	16.57	14.43	11.54	10.83	13.42	14.48	18.90	13.65	17.88	13.65	17.88	13.60
27	NorthWestern Corp	17.13	17.10	19.49	19.89	16.77	17.85	17.19	18.36	16.24	16.86	15.72	12.62	12.90	11.54	13.87	21.74	25.95	17.09	N/A	N/A	N/A
28	OGE Energy	15.26	15.20	16.25	19.00	16.53	18.32	17.68	17.69	18.27	17.69	15.16	14.37	13.31	10.83	12.41	13.75	13.68	14.95	14.13	11.84	14.12
29	Otter Tail Corp.	23.34	13.80	18.31	23.51	22.25	22.06	20.19	18.20	18.84	21.12	21.75	47.48	55.10	31.16	30.06	19.02	17.35	15.40	17.34	17.77	16.01
30	PG&E Corp.	16.79	N/A	N/A	N/A	N/A	18.28	21.13	26.40	15.00	23.67	20.70	15.46	15.80	13.01	12.08	16.85	14.84	15.37	13.81	9.50	N/A
31	Pinnacle West Capital	15.86	14.80	16.71	19.37	17.82	19.28	18.74	16.04	15.89	15.27	14.35	14.60	12.57	13.74	16.07	14.93	13.69	19.24	15.80	13.96	14.43
32	PNM Resources	18.54	20.00	20.79	21.08	23.39	20.43	19.83	16.85	18.68	16.13	14.97	14.53	14.05	18.09	N/A	35.65	15.57	17.38	15.02	14.73	15.08
33	Portland General	17.47	18.90	26.57	22.31	18.42	20.03	19.06	17.71	15.32	16.88	13.98	12.37	12.00	14.40	16.30	11.94	23.35	N/A	N/A	N/A	N/A
34	PPL Corp.	14.44	21.70	13.94	13.29	11.33	17.65	12.83	13.92	14.08	12.84	10.88	10.52	11.93	25.69	17.64	17.26	14.10	15.12	12.51	10.59	11.06
35	Public Serv. Enterprise	14.02	18.30	14.91	15.10	18.71	16.31	15.35	12.41	12.61	13.50	12.79	10.40	10.37	10.04	13.65	16.54	17.81	16.74	14.26	10.58	10.00
36	SCANA Corp.	13.96	N/A	N/A	N/A	N/A	14.46	16.80	14.67	13.68	14.43	14.80	13.67	12.93	11.63	12.67	14.96	15.42	14.44	13.57	13.05	12.17
37	Sempra Energy	16.66	36.40	19.62	22.50	20.40	24.33	24.37	19.73	21.87	19.68	14.89	11.77	12.60	10.09	11.80	14.01	11.50	11.79	8.65	8.96	8.19
38	Southern Co.	16.03	19.20	17.91	17.58	15.06	15.48	17.76	15.85	16.04	16.19	16.97	15.85	14.90	13.52	16.13	15.95	16.19	15.92	14.68	14.83	14.63
39	Vectren Corp.	17.05	N/A	N/A	N/A	N/A	23.54	19.18	17.92	19.98	20.66	15.02	15.83	15.10	12.89	16.79	15.33	18.92	15.11	17.57	14.80	14.16
40	WEC Energy Group	17.21	21.30	24.89	23.49	19.57	20.01	19.95	21.33	17.71	16.50	15.76	14.25	14.01	13.35	14.77	16.47	15.97	14.46	17.51	12.43	10.46
41	Westar Energy	15.58	N/A	N/A	N/A	N/A	23.40	21.59	18.45	15.36	14.04	13.43	14.78	12.96	14.95	16.96	14.10	12.18	14.79	17.44	10.78	14.02
42	Xcel Energy Inc.	17.82	23.10	23.88	22.34	18.93	20.20	18.48	16.54	15.44	15.04	14.82	14.24	14.13	12.66	13.69	16.65	14.80	15.36	13.65	11.62	40.80
43	Average	17.19	20.96	21.45	21.09	20.34	19.81	18.97	18.00	17.39	16.38	15.69	15.30	14.28	13.56	15.18	17.74	16.47	16.52	16.57	13.70	14.31
44	Median	16.09	20.10	20.43	21.22	19.28	19.97	18.80	17.71	16.54	16.27	15.04	14.31	12.91	12.82	14.21	16.41	15.88	15.92	15.29	13.60	13.47

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

PacifiCorp

Electric Utilities
(Valuation Metrics)

Market Price to Cash Flow (MP/CF) Ratio ¹

Line	Company	20-Year																				
		Average (1)	2021 ^{2/a} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)	2005 (18)	2004 (19)	2003 (20)	2002 (21)
1	ALLETE	9.41	8.75	8.14	11.38	10.16	10.95	8.26	7.49	8.80	9.15	8.18	7.91	8.04	8.51	9.29	10.30	11.06	11.54	11.46	N/A	N/A
2	Alliant Energy	8.08	10.31	10.66	10.74	9.71	13.21	10.67	8.86	8.40	7.52	7.50	7.21	6.59	6.23	7.49	7.92	8.00	5.09	5.52	4.76	5.20
3	Ameren Corp.	7.27	9.03	9.63	9.45	7.95	8.38	7.44	6.87	6.95	6.61	5.48	5.02	4.23	4.25	6.35	7.69	8.57	8.57	8.24	6.74	7.96
4	American Electric Power	6.58	7.57	8.41	9.34	8.03	8.81	7.57	7.09	7.00	6.57	5.93	5.46	5.54	4.71	5.71	6.84	5.54	6.07	5.50	4.69	5.19
5	Avangrid, Inc.	9.87	10.31	9.39	9.11	10.24	10.14	8.56	11.30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	6.86	8.17	7.80	7.34	10.14	9.35	7.63	6.76	7.30	6.21	6.88	6.40	5.80	4.06	5.12	7.58	5.30	6.58	7.58	5.36	5.90
7	Black Hills	7.85	8.46	8.56	10.65	8.83	9.20	9.33	8.06	8.81	8.03	6.04	7.85	6.16	4.25	11.26	7.62	6.92	7.57	6.69	6.89	5.92
8	CenterPoint Energy	5.33	7.75	5.94	7.03	8.45	6.97	5.96	5.75	6.25	6.56	5.15	5.39	4.70	4.05	4.29	5.17	3.94	4.70	4.26	2.08	2.16
9	CMS Energy Corp.	6.27	9.27	9.87	9.85	8.40	8.75	8.50	7.53	7.13	6.68	6.03	5.41	4.48	3.64	3.45	5.57	4.40	4.04	3.20	2.88	NMF
10	Consol. Edison	8.24	7.82	8.35	9.46	8.73	9.64	9.39	7.96	7.89	7.77	8.31	8.15	7.39	6.72	6.89	8.31	8.65	8.59	9.31	7.90	7.64
11	Dominion Resources	9.96	11.35	14.59	13.47	10.94	11.35	11.59	11.84	12.27	10.88	9.92	9.45	8.12	6.98	8.27	8.65	7.81	10.09	7.68	7.51	6.53
12	DTE Energy	6.68	10.72	7.85	9.67	8.54	9.05	8.64	8.52	6.42	6.65	5.91	5.18	4.69	3.59	4.90	5.73	5.21	5.54	6.00	5.62	5.20
13	Duke Energy	7.55	6.69	8.06	7.40	7.65	8.40	8.57	7.95	8.12	8.11	9.53	6.56	6.01	5.96	7.13	7.16	N/A	N/A	N/A	N/A	N/A
14	Edison Int'l	6.01	7.39	7.57	7.25	13.46	7.05	6.77	5.92	5.68	5.46	4.59	4.22	4.11	3.95	5.63	7.01	5.87	5.61	6.84	2.82	2.96
15	El Paso Electric	5.93	N/A	N/A	N/A	9.43	8.54	7.46	6.47	6.33	6.19	5.78	5.16	4.31	3.98	4.95	6.44	6.25	6.67	4.65	3.90	4.39
16	Entergy Corp.	5.72	5.61	5.78	6.05	4.92	4.66	4.01	4.11	4.21	4.03	4.23	3.90	4.66	5.68	7.96	9.21	7.16	8.76	7.12	6.84	5.57
17	Eversource Energy	7.44	11.77	12.53	11.47	9.16	10.36	10.14	10.12	10.14	8.08	9.30	6.99	4.97	4.61	4.12	6.18	6.02	3.55	3.78	2.85	2.75
18	Eergy, Inc.	7.41	7.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	5.91	4.16	4.44	5.29	5.05	4.45	4.80	4.70	5.09	4.61	5.54	5.86	5.10	5.98	9.65	9.89	8.62	7.97	6.29	5.71	4.97
20	FirstEnergy Corp.	6.89	9.39	9.23	11.09	8.84	4.76	5.12	5.38	7.43	6.15	7.42	7.33	4.49	4.91	7.58	7.89	7.53	6.04	5.15	6.90	5.10
21	Fortis Inc.	8.42	9.38	9.50	9.46	7.97	8.23	10.46	7.29	9.25	7.93	8.09	8.38	7.40	6.76	7.58	9.18	7.89	N/A	N/A	N/A	N/A
22	Great Plains Energy	6.89	N/A	N/A	N/A	N/A	14.62	8.63	6.66	6.45	5.73	6.09	5.74	4.49	5.06	7.71	7.13	7.68	6.70	6.52	5.92	5.14
23	Hawaiian Elec.	8.06	7.98	8.69	9.30	8.34	9.21	7.44	9.25	7.64	8.15	8.05	7.73	7.81	6.95	9.10	7.95	8.47	8.29	8.44	6.12	6.20
24	IDACORP, Inc.	8.67	11.19	11.38	12.75	11.72	11.56	10.95	9.37	8.59	7.78	7.05	6.64	6.52	5.31	7.10	8.23	7.73	7.55	7.15	7.27	7.53
25	MGE Energy	11.69	14.45	14.90	15.58	15.04	17.33	15.66	12.53	11.42	11.20	10.77	9.48	9.05	8.40	8.42	9.23	9.30	11.73	11.04	10.20	8.09
26	NextEra Energy, Inc.	10.70	57.99	15.48	12.33	10.77	11.61	9.24	7.93	7.98	7.60	7.58	5.98	5.33	6.09	7.34	9.02	6.51	6.71	6.71	5.97	5.77
27	NorthWestern Corp	7.85	8.79	8.88	9.93	8.19	8.82	8.65	8.99	9.01	7.61	6.85	5.89	5.79	5.05	5.57	8.45	9.39	7.31	8.13	N/A	N/A
28	OGE Energy	7.91	7.42	8.38	10.58	9.36	10.52	9.03	9.25	10.65	9.93	7.35	7.48	6.61	5.37	6.43	7.58	7.50	7.04	6.73	5.62	5.39
29	Otter Tail Corp.	9.34	7.33	9.99	12.42	11.58	11.09	9.38	9.04	9.45	9.58	8.43	9.04	8.07	8.01	11.65	9.53	8.66	8.18	9.01	8.13	8.33
30	PG&E Corp.	5.55	N/A	N/A	N/A	- 5.65	7.09	7.26	7.24	5.65	6.84	5.86	5.32	5.42	4.71	4.61	5.84	5.28	5.07	5.13	4.05	14.69
31	Pinnacle West Capital	6.27	6.71	7.49	8.30	7.09	8.73	7.89	6.91	7.03	6.85	6.34	5.80	5.65	3.84	4.19	4.76	4.48	7.48	5.88	4.80	5.21
32	PNM Resources	6.89	7.57	7.87	7.92	7.57	7.40	7.64	6.95	7.48	6.47	5.80	4.94	4.58	4.53	7.10	10.67	7.50	7.62	6.84	5.55	5.72
33	Portland General	5.91	6.16	6.72	7.65	6.56	7.45	7.12	6.73	5.49	6.06	5.08	4.86	4.13	4.63	4.81	5.34	5.74	N/A	N/A	N/A	N/A
34	PPL Corp.	7.73	12.48	7.46	7.99	7.02	10.11	8.37	8.73	7.32	6.59	5.87	5.98	7.46	8.82	9.17	8.90	7.58	7.57	6.49	5.41	5.30
35	Public Serv. Enterprise	7.62	8.97	8.22	8.72	9.48	8.67	8.56	6.66	6.48	6.40	6.40	6.03	6.04	6.20	8.46	9.83	8.41	8.59	7.17	6.79	6.24
36	SCANA Corp.	7.09	N/A	N/A	N/A	N/A	8.26	9.59	8.33	7.50	7.49	7.40	6.75	6.52	5.88	6.38	7.15	7.03	5.40	6.86	6.59	6.36
37	Sempra Energy	8.44	14.67	10.40	12.05	10.10	10.65	10.88	9.99	10.77	9.37	7.26	6.13	6.53	6.07	7.07	8.61	7.22	6.96	5.16	4.85	4.00
38	Southern Co.	8.16	7.85	8.34	8.80	7.05	7.49	8.83	8.23	8.42	8.30	8.75	8.22	7.79	7.08	8.18	8.62	8.47	8.41	8.28	8.28	7.83
39	Vectren Corp.	7.08	N/A	N/A	N/A	N/A	10.32	8.60	7.82	7.57	6.82	5.79	5.81	5.58	5.24	6.90	6.53	7.37	7.06	7.63	7.27	6.92
40	WEC Energy Group	9.07	11.99	13.67	12.88	10.82	11.04	10.95	12.90	10.27	9.58	9.24	8.43	8.15	6.87	7.57	7.84	7.27	6.40	6.27	4.91	4.27
41	Westar Energy	6.91	N/A	N/A	N/A	N/A	10.87	10.86	9.05	7.93	7.23	6.71	6.67	5.51	5.32	7.09	6.88	5.81	7.00	6.54	4.24	2.94
42	Xcel Energy Inc.	6.93	9.16	10.07	9.44	7.90	8.50	8.10	7.62	7.31	7.00	6.85	6.47	6.28	5.43	5.71	6.51	5.54	5.62	5.31	4.27	5.46
43	Average	7.58	10.33	9.26	9.78	8.64	9.36	8.65	8.05	7.85	7.39	6.98	6.53	6.00	5.59	6.95	7.72	7.12	7.13	6.77	5.70	5.85
44	Median	7.25	8.77	8.56	9.46	8.73	9.05	8.57	7.93	7.54	7.12	6.85	6.27	5.80	5.35	7.09	7.76	7.37	7.04	6.71	5.62	5.52

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

Note:

^a Based on the average of the high and low price and the projected Cash Flow per share.

PacifiCorp

Electric Utilities
(Valuation Metrics)

Market Price to Book Value (MP/BV) Ratio ¹

Line	Company	17-Year																	
		Average	2021 ^{2b}	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALLETE	1.59	1.46	1.39	1.91	1.79	1.78	1.53	1.37	1.42	1.51	1.34	1.35	1.28	1.15	1.55	1.89	2.09	2.22
2	Alliant Energy	1.78	2.26	2.30	2.32	2.16	2.38	2.17	1.86	1.86	1.70	1.57	1.46	1.31	1.04	1.33	1.67	1.52	1.33
3	Ameren Corp.	1.54	2.13	2.21	2.26	1.95	1.93	1.67	1.46	1.45	1.29	1.18	0.90	0.83	0.78	1.25	1.60	1.62	1.68
4	American Electric Power	1.62	1.87	2.09	2.20	1.82	1.88	1.81	1.55	1.54	1.40	1.31	1.23	1.23	1.08	1.48	1.85	1.56	1.57
5	Avangrid, Inc.	0.92	0.93	0.97	1.02	1.02	0.93	0.83	0.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	1.34	1.43	1.37	1.54	1.88	1.73	1.57	1.36	1.33	1.25	1.21	1.19	1.07	0.94	1.11	1.29	1.30	1.13
7	Black Hills	1.52	1.50	1.55	1.95	1.61	2.06	1.94	1.59	1.79	1.62	1.21	1.14	1.07	0.83	1.22	1.57	1.47	1.63
8	CenterPoint Energy	2.31	1.70	1.90	2.21	2.18	2.59	2.73	2.43	2.27	2.30	1.99	1.87	1.96	1.77	2.49	3.13	2.75	3.06
9	CMS Energy Corp.	2.14	2.69	3.24	3.28	2.81	2.93	2.72	2.43	2.26	2.09	1.91	1.66	1.48	1.10	1.23	1.82	1.42	1.32
10	Consol. Edison	1.41	1.39	1.44	1.59	1.49	1.63	1.58	1.42	1.34	1.38	1.47	1.38	1.22	1.08	1.17	1.47	1.47	1.52
11	Dominion Resources	2.61	2.45	2.72	2.18	2.40	2.94	3.15	3.34	3.55	2.97	2.84	2.37	2.01	1.80	2.42	2.69	2.07	2.50
12	DTE Energy	1.59	2.85	1.80	2.07	1.91	2.01	1.82	1.65	1.62	1.51	1.35	1.20	1.16	0.89	1.10	1.35	1.29	1.39
13	Duke Energy	1.23	1.36	1.47	1.47	1.33	1.41	1.35	1.29	1.28	1.19	1.12	1.11	1.00	0.91	1.06	1.15	N/A	N/A
14	Edison Int'l	1.67	1.61	1.62	1.80	1.97	2.17	1.92	1.76	1.68	1.57	1.53	1.24	1.07	1.04	1.56	2.05	1.80	1.93
15	El Paso Electric	1.56	N/A	N/A	N/A	1.94	1.87	1.68	1.48	1.52	1.49	1.59	1.64	1.17	0.98	1.33	1.69	1.71	1.76
16	Entergy Corp.	1.75	1.75	1.93	2.03	1.74	1.76	1.67	1.40	1.33	1.21	1.31	1.35	1.62	1.66	2.44	2.65	1.89	2.01
17	Eversource Energy	1.52	1.90	2.11	1.99	1.68	1.73	1.64	1.53	1.47	1.38	1.28	1.50	1.31	1.12	1.31	1.60	1.22	1.05
18	Evergy, Inc.	1.50	1.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	2.11	1.17	1.20	1.43	1.31	1.20	1.20	1.14	1.28	1.17	1.46	1.95	2.07	2.57	4.39	4.79	3.89	3.60
20	FirstEnergy Corp.	2.07	2.80	2.81	3.39	2.67	3.53	2.37	1.16	1.15	1.28	1.44	1.33	1.36	1.54	2.52	2.23	1.92	1.64
21	Fortis Inc.	1.47	1.45	1.47	1.41	1.24	1.41	1.26	1.33	1.35	1.45	1.59	1.59	1.56	1.33	1.48	1.63	1.96	N/A
22	Great Plains Energy	1.21	N/A	N/A	N/A	N/A	1.33	1.17	1.12	1.11	1.02	0.96	0.93	0.87	0.80	1.11	1.66	1.77	1.86
23	Hawaiian Elec.	1.66	1.78	1.82	2.02	1.76	1.76	1.63	1.71	1.49	1.54	1.62	1.54	1.44	1.16	1.61	1.57	2.01	1.78
24	IDACORP, Inc.	1.47	1.80	1.84	2.10	1.96	1.94	1.76	1.54	1.45	1.33	1.19	1.17	1.13	0.92	1.09	1.26	1.37	1.22
25	MGE Energy	2.15	2.57	2.54	2.88	2.59	2.88	2.60	2.10	2.10	2.06	1.92	1.75	1.65	1.54	1.62	1.75	1.83	2.09
26	NextEra Energy, Inc.	2.72	12.09	3.58	2.75	2.32	2.35	2.30	2.09	2.15	1.93	1.74	1.55	1.49	1.70	2.06	2.34	1.80	1.93
27	NorthWestern Corp	1.46	1.44	1.45	1.74	1.48	1.64	1.68	1.60	1.54	1.56	1.42	1.35	1.22	1.07	1.15	1.48	1.65	1.42
28	OGE Energy	1.84	1.63	1.86	2.06	1.75	1.82	1.73	1.79	2.22	2.24	1.94	1.90	1.70	1.37	1.52	1.98	1.91	1.80
29	Otter Tail Corp.	1.85	1.98	2.04	2.62	2.49	2.33	1.90	1.78	1.90	1.96	1.58	1.35	1.19	1.18	1.71	1.93	1.76	1.74
30	PG&E Corp.	1.60	N/A	N/A	N/A	1.70	1.71	1.69	1.57	1.39	1.38	1.41	1.46	1.56	1.41	1.50	1.94	1.83	1.84
31	Pinnacle West Capital	1.43	1.52	1.63	1.91	1.74	1.91	1.72	1.52	1.44	1.47	1.39	1.25	1.14	0.95	1.00	1.26	1.26	1.25
32	PNM Resources	1.32	1.92	1.87	2.28	1.83	1.84	1.56	1.33	1.21	1.09	0.98	0.80	0.69	0.56	0.66	1.23	1.21	1.45
33	Portland General	1.35	1.53	1.57	1.84	1.56	1.69	1.56	1.42	1.37	1.28	1.14	1.09	0.94	0.92	1.05	1.32	1.36	N/A
34	PPL Corp.	2.12	2.57	1.63	1.86	1.81	2.40	2.46	2.24	1.64	1.55	1.58	1.47	1.61	2.10	3.19	3.05	2.43	2.50
35	Public Serv. Enterprise	1.89	1.74	1.70	1.97	1.81	1.68	1.67	1.58	1.57	1.44	1.46	1.59	1.67	1.78	2.58	2.99	2.46	2.45
36	SCANA Corp.	1.51	N/A	N/A	N/A	N/A	1.65	1.74	1.47	1.48	1.48	1.48	1.36	1.33	1.20	1.45	1.62	1.64	1.72
37	Sempra Energy	1.80	1.72	1.84	2.22	2.06	2.24	2.00	2.17	2.20	1.84	1.53	1.28	1.35	1.32	1.60	1.87	1.70	1.73
38	Southern Co.	2.07	2.11	2.20	2.13	1.89	2.07	2.01	1.99	2.02	2.04	2.15	1.99	1.83	1.73	2.12	2.24	2.23	2.35
39	Vectren Corp.	1.83	N/A	N/A	N/A	N/A	2.75	2.29	2.11	2.08	1.82	1.57	1.53	1.41	1.34	1.64	1.74	1.77	1.82
40	WEC Energy Group	2.02	2.61	2.84	2.62	2.11	2.10	2.09	1.82	2.34	2.21	2.05	1.81	1.65	1.40	1.57	1.77	1.71	1.62
41	Westar Energy	1.37	N/A	N/A	N/A	N/A	1.94	1.95	1.49	1.44	1.33	1.26	1.20	1.10	0.93	1.10	1.36	1.30	1.41
42	Xcel Energy Inc.	1.69	2.29	2.46	2.34	1.97	2.06	1.88	1.66	1.55	1.50	1.51	1.41	1.32	1.19	1.30	1.53	1.40	1.38
43	Average	1.74	2.15	1.96	2.10	1.88	2.00	1.85	1.67	1.68	1.60	1.51	1.43	1.35	1.25	1.63	1.90	1.78	1.80
44	Median	1.71	1.77	1.84	2.06	1.83	1.91	1.74	1.57	1.53	1.49	1.47	1.37	1.31	1.15	1.48	1.71	1.71	1.73

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

Notes:

^b Based on the average of the high and low price and the projected Book Value per share.

PacifiCorp

Electric Utilities
(Valuation Metrics)

Line	Company	Dividend per Share ¹																
		16-Year																
		Average (1)	2021 ² (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
1	ALLETE	1.98	2.52	2.47	2.35	2.24	2.14	2.08	2.02	1.96	1.90	1.84	1.78	1.76	1.76	1.72	1.64	1.45
2	Alliant Energy	1.04	1.61	1.52	1.42	1.34	1.26	1.18	1.10	1.02	0.94	0.90	0.85	0.79	0.75	0.70	0.64	0.58
3	Ameren Corp.	1.89	2.20	2.00	1.92	1.85	1.78	1.72	1.66	1.61	1.60	1.60	1.56	1.54	1.54	2.54	2.54	2.54
4	American Electric Power	2.10	3.00	2.84	2.71	2.53	2.39	2.27	2.15	2.03	1.95	1.88	1.85	1.71	1.64	1.64	1.58	1.50
5	Avangrid, Inc.	1.75	1.76	1.76	1.76	1.74	1.73	1.73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	1.18	1.69	1.62	1.55	1.49	1.43	1.37	1.32	1.27	1.22	1.16	1.10	1.00	0.81	0.69	0.60	0.57
7	Black Hills	1.66	2.29	2.17	2.05	1.93	1.81	1.68	1.62	1.56	1.52	1.48	1.46	1.44	1.42	1.40	1.37	1.32
8	CenterPoint Energy	0.87	0.66	0.90	0.86	1.12	1.35	1.03	0.99	0.95	0.83	0.81	0.79	0.78	0.76	0.73	0.68	0.60
9	CMS Energy Corp.	1.05	1.74	1.63	1.53	1.43	1.33	1.24	1.16	1.08	1.02	0.96	0.84	0.66	0.50	0.36	0.20	N/A
10	Consol. Edison	2.60	3.10	3.06	2.96	2.86	2.76	2.68	2.60	2.52	2.46	2.42	2.40	2.38	2.36	2.34	2.32	2.30
11	Dominion Resources	2.38	2.52	3.45	3.67	3.34	3.04	2.80	2.59	2.40	2.25	2.11	1.97	1.83	1.75	1.58	1.46	1.38
12	DTE Energy	2.83	3.88	4.12	3.85	3.59	3.36	3.06	2.84	2.69	2.59	2.42	2.32	2.18	2.12	2.12	2.12	2.08
13	Duke Energy	3.23	3.90	3.82	3.75	3.64	3.49	3.36	3.24	3.15	3.09	3.03	2.97	2.91	2.82	2.70	2.58	N/A
14	Edison Int'l	1.72	2.69	2.58	2.48	2.43	2.23	1.98	1.73	1.48	1.37	1.31	1.29	1.27	1.25	1.23	1.18	1.10
15	El Paso Electric	1.11	N/A	N/A	N/A	1.42	1.32	1.23	1.17	1.11	1.05	0.97	0.66	N/A	N/A	N/A	N/A	N/A
16	Energy Corp.	3.27	3.86	3.74	3.66	3.58	3.50	3.42	3.34	3.32	3.32	3.32	3.24	3.00	3.00	2.58	2.58	2.16
17	Eversource Energy	1.50	2.41	2.27	2.14	2.02	1.90	1.78	1.67	1.57	1.47	1.32	1.10	1.03	0.95	0.83	0.78	0.73
18	Evergy, Inc.	2.18	2.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	1.64	1.53	1.53	1.45	1.38	1.31	1.26	1.24	1.24	1.46	2.10	2.10	2.10	2.10	2.05	1.82	1.64
20	FirstEnergy Corp.	1.80	1.56	1.56	1.53	1.82	1.44	1.44	1.44	1.44	1.65	2.20	2.20	2.20	2.20	2.05	2.05	1.85
21	Fortis Inc.	1.37	2.08	1.97	1.86	1.75	1.65	1.55	1.43	1.30	1.25	1.21	1.17	1.12	1.04	1.00	0.82	0.67
22	Great Plains Energy	1.11	N/A	N/A	N/A	N/A	1.10	1.06	1.00	0.94	0.88	0.86	0.84	0.83	0.83	1.66	1.66	1.66
23	Hawaiian Elec.	1.26	1.36	1.32	1.28	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
24	IDACORP, Inc.	1.79	2.88	2.72	2.56	2.40	2.24	2.08	1.92	1.76	1.57	1.37	1.20	1.20	1.20	1.20	1.20	1.20
25	MGE Energy	1.14	1.52	1.45	1.38	1.32	1.26	1.21	1.16	1.11	1.07	1.04	1.01	0.99	0.97	0.96	0.94	0.93
26	NextEra Energy, Inc.	0.79	1.54	1.40	1.25	1.11	0.98	0.87	0.77	0.73	0.66	0.60	0.55	0.50	0.47	0.45	0.41	0.38
27	NorthWestern Corp	1.75	2.48	2.40	2.30	2.20	2.10	2.00	1.92	1.60	1.52	1.48	1.44	1.36	1.34	1.32	1.28	1.24
28	OGE Energy	1.03	1.63	1.58	1.51	1.40	1.27	1.16	1.05	0.95	0.85	0.80	0.76	0.73	0.71	0.70	0.68	0.67
29	Otter Tail Corp.	1.26	1.56	1.48	1.40	1.34	1.28	1.25	1.23	1.21	1.19	1.19	1.19	1.19	1.19	1.19	1.17	1.15
30	PG&E Corp.	1.70	N/A	N/A	N/A	N/A	1.55	1.93	1.82	1.82	1.82	1.82	1.82	1.82	1.68	1.56	1.44	1.32
31	Pinnacle West Capital	2.50	3.36	3.23	3.04	2.87	2.70	2.56	2.44	2.33	2.23	2.67	2.10	2.10	2.10	2.10	2.10	2.03
32	PNM Resources	0.82	0.98	1.25	1.18	1.09	0.99	0.88	0.80	0.76	0.68	0.58	0.50	0.50	0.61	0.91	0.91	0.86
33	Portland General	1.19	1.70	1.59	1.52	1.43	1.34	1.26	1.18	1.12	1.10	1.08	1.06	1.04	1.01	0.97	0.93	0.68
34	PPL Corp.	1.47	1.66	1.66	1.65	1.64	1.58	1.52	1.50	1.49	1.47	1.44	1.40	1.40	1.38	1.34	1.22	1.10
35	Public Serv. Enterprise	1.54	2.04	1.96	1.88	1.80	1.72	1.64	1.56	1.48	1.44	1.42	1.37	1.37	1.33	1.29	1.17	1.14
36	SCANA Corp.	2.00	N/A	N/A	N/A	N/A	2.45	2.30	2.18	2.10	2.03	1.98	1.94	1.90	1.88	1.84	1.76	1.68
37	Sempra Energy	2.60	4.40	4.18	3.87	3.58	3.29	3.02	2.80	2.64	2.52	2.40	1.92	1.56	1.37	1.24	1.20	1.20
38	Southern Co.	2.06	2.62	2.54	2.46	2.38	2.30	2.22	2.15	2.08	2.01	1.94	1.87	1.80	1.73	1.66	1.60	1.54
39	Vectren Corp.	1.42	N/A	N/A	N/A	N/A	1.71	1.62	1.54	1.46	1.43	1.41	1.39	1.37	1.35	1.31	1.27	1.23
40	WEC Energy Group	1.49	2.71	2.53	2.36	2.21	2.08	1.98	1.74	1.56	1.45	1.20	1.04	0.80	0.68	0.54	0.50	0.46
41	Westar Energy	1.30	N/A	N/A	N/A	N/A	1.60	1.52	1.44	1.40	1.36	1.32	1.28	1.24	1.20	1.16	1.08	0.98
42	Xcel Energy Inc.	1.24	1.83	1.72	1.62	1.52	1.44	1.36	1.28	1.20	1.11	1.07	1.03	1.00	0.97	0.94	0.91	0.88
43	Average	1.69	2.26	2.23	2.14	2.03	1.90	1.79	1.70	1.62	1.56	1.55	1.47	1.43	1.39	1.39	1.32	1.24
44	Industry Average Growth	4.09%	1.52%	4.36%	5.29%	6.91%	5.79%	5.44%	5.20%	3.38%	0.98%	5.59%	2.36%	3.30%	-0.25%	4.98%	6.51%	

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

Notes:

PG&E is excluded from 2017, 2018 and 2019 average calculations due to their Dividend Suspension.

PacifiCorp

Electric Utilities
(Valuation Metrics)

		Earnings per Share ¹																
Line	Company	16-Year															2007 (16)	2008 (17)
		Average (1)	2021 ² (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)		
1	ALLETE	2.90	3.23	3.35	3.33	3.38	3.13	3.14	3.38	2.90	2.63	2.58	2.65	2.19	1.89	2.82	3.08	2.77
2	Alliant Energy	1.70	2.63	2.47	2.33	2.19	1.99	1.65	1.69	1.74	1.65	1.53	1.38	1.38	0.95	1.27	1.35	1.03
3	Ameren Corp.	2.83	3.84	3.50	3.35	3.32	2.77	2.68	2.38	2.40	2.10	2.41	2.47	2.77	2.78	2.88	2.98	2.66
4	American Electric Power	3.48	4.96	4.42	4.08	3.90	3.62	4.23	3.59	3.34	3.18	2.98	3.13	2.60	2.97	2.99	2.86	2.86
5	Avangrid, Inc.	1.80	2.05	1.88	2.26	1.92	1.67	1.98	0.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	1.78	2.05	1.90	2.97	2.07	1.95	2.15	1.89	1.84	1.85	1.32	1.72	1.65	1.58	1.36	0.72	1.47
7	Black Hills	2.57	3.95	3.73	3.53	3.47	3.38	2.63	2.83	2.89	2.61	1.97	1.01	1.66	2.32	0.18	2.68	2.21
8	CenterPoint Energy	1.20	0.94	1.29	1.49	0.74	1.57	1.00	1.08	1.42	1.24	1.35	1.27	1.07	1.01	1.30	1.17	1.33
9	CMS Energy Corp.	1.70	2.58	2.64	2.39	2.32	2.17	1.98	1.89	1.74	1.66	1.53	1.45	1.33	0.93	1.23	0.64	0.64
10	Consol. Edison	3.78	4.45	3.94	4.08	4.55	4.10	3.94	4.05	3.62	3.93	3.86	3.57	3.47	3.14	3.36	3.48	2.95
11	Dominion Resources	2.83	3.10	1.82	2.19	3.25	3.53	3.44	3.20	3.05	3.09	2.75	2.76	2.89	2.64	3.04	2.13	2.40
12	DTE Energy	4.37	4.10	7.08	6.31	6.17	5.73	4.83	4.44	5.10	3.76	3.88	3.67	3.74	3.24	2.73	2.66	2.45
13	Duke Energy	3.93	4.95	3.92	5.07	4.13	4.22	3.71	4.10	4.13	3.98	3.71	4.14	4.02	3.39	3.03	3.60	2.73
14	Edison Int'l	3.21	1.60	1.72	3.98	-1.26	4.51	3.94	4.15	4.33	3.78	4.55	3.23	3.35	3.24	3.68	3.32	3.28
15	El Paso Electric	2.02	N/A	N/A	N/A	2.07	2.42	2.39	2.03	2.27	2.20	2.26	2.48	2.07	1.50	1.73	1.63	1.27
16	Entergy Corp.	6.14	6.87	6.90	6.30	5.88	5.19	6.88	5.81	5.77	4.96	6.02	7.55	6.66	6.30	6.20	5.60	5.36
17	Eversource Energy	2.50	3.45	3.55	3.45	3.25	3.11	2.96	2.76	2.58	2.49	1.89	2.22	2.10	1.91	1.86	1.59	0.82
18	Energy, Inc.	3.83	3.83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	2.95	2.60	2.60	3.01	2.07	2.78	1.80	2.54	2.10	2.31	1.92	3.75	3.87	4.29	4.10	4.03	3.50
20	FirstEnergy Corp.	2.57	2.40	1.85	1.84	1.33	2.73	2.10	2.00	0.85	2.97	2.13	1.88	3.25	3.32	4.38	4.22	3.82
21	Fortis Inc.	1.92	2.61	2.60	2.68	2.52	2.66	1.89	2.11	1.38	1.63	1.65	1.74	1.62	1.51	1.52	1.29	1.36
22	Great Plains Energy	1.33	N/A	N/A	N/A	N/A	-0.06	1.61	1.37	1.57	1.62	1.35	1.25	1.53	1.03	1.16	1.85	1.62
23	Hawaiian Elec.	1.58	2.15	1.81	1.99	1.85	1.64	2.29	1.50	1.64	1.62	1.67	1.44	1.21	0.91	1.07	1.11	1.33
24	IDACORP, Inc.	3.56	4.90	4.69	4.61	4.49	4.21	3.94	3.87	3.85	3.64	3.37	3.36	2.95	2.64	2.18	1.86	2.35
25	MGE Energy	2.04	2.92	2.60	2.51	2.43	2.20	2.18	2.06	2.32	2.16	1.86	1.76	1.67	1.47	1.59	1.51	1.37
26	NextEra Energy, Inc.	1.37	1.81	2.10	1.94	1.67	1.63	1.45	1.52	1.40	1.21	1.14	1.21	1.19	0.99	1.02	0.82	0.81
27	NorthWestern Corp	2.64	3.65	3.06	3.53	3.40	3.34	3.39	2.90	2.99	2.46	2.26	2.53	2.14	2.02	1.77	1.44	1.31
28	OGE Energy	1.76	2.36	2.08	2.24	2.12	1.92	1.69	1.69	1.98	1.94	1.79	1.73	1.50	1.33	1.25	1.32	1.23
29	Otter Tail Corp.	1.62	4.23	2.34	2.17	2.06	1.86	1.60	1.56	1.55	1.37	1.05	0.45	0.38	0.71	1.09	1.78	1.69
30	PG&E Corp.	1.49	N/A	N/A	N/A	-13.25	3.50	2.83	2.00	3.06	1.83	2.07	2.78	2.82	3.03	3.22	2.78	2.76
31	Pinnacle West Capital	3.70	5.45	4.87	4.77	4.54	4.43	3.95	3.92	3.58	3.66	3.50	2.99	3.08	2.26	2.12	2.96	3.17
32	PNM Resources	1.43	2.35	2.15	2.28	1.66	1.92	1.65	1.64	1.45	1.41	1.31	1.08	0.87	0.58	0.11	0.76	1.72
33	Portland General	1.96	2.75	1.72	2.39	2.37	2.29	2.16	2.04	2.18	1.77	1.87	1.95	1.66	1.31	1.39	2.33	1.14
34	PPL Corp.	2.23	0.60	2.04	2.37	2.58	2.11	2.79	2.37	2.38	2.38	2.61	2.61	2.29	1.19	2.45	2.63	2.29
35	Public Serv. Enterprise	2.87	2.30	3.61	3.90	2.76	2.82	2.83	3.30	2.99	2.45	2.44	3.11	3.07	3.08	2.90	2.59	1.85
36	SCANA Corp.	3.30	N/A	N/A	N/A	N/A	4.20	4.16	3.81	3.79	3.39	3.15	2.97	2.98	2.85	2.95	2.74	2.59
37	Sempra Energy	4.67	3.25	6.58	5.97	5.48	4.63	4.24	5.23	4.63	4.22	4.35	4.47	4.02	4.78	4.43	4.26	4.23
38	Southern Co.	2.74	3.50	3.25	3.17	3.00	3.21	2.83	2.84	2.77	2.70	2.67	2.55	2.36	2.32	2.25	2.28	2.10
39	Vectren Corp.	1.94	N/A	N/A	N/A	N/A	2.60	2.55	2.39	2.02	1.66	1.94	1.73	1.64	1.79	1.63	1.83	1.44
40	WEC Energy Group	2.54	4.11	3.79	3.58	3.34	3.14	2.96	2.34	2.59	2.51	2.35	2.18	1.92	1.60	1.52	1.42	1.32
41	Westar Energy	1.96	N/A	N/A	N/A	N/A	2.27	2.43	2.09	2.35	2.27	2.15	1.79	1.80	1.28	1.31	1.84	1.88
42	Xcel Energy Inc.	2.01	2.95	2.79	2.64	2.47	2.30	2.21	2.10	2.03	1.91	1.85	1.72	1.56	1.49	1.46	1.35	1.35
43	Average	2.63	3.21	3.16	3.28	2.87	2.90	2.81	2.67	2.66	2.50	2.43	2.44	2.36	2.19	2.21	2.26	2.11
44	Industry Average Growth	2.92%	1.47%	-3.54%	14.00%	-0.78%	3.24%	5.25%	0.08%	6.36%	3.26%	-0.70%	3.61%	7.71%	-1.07%	-2.17%	7.14%	

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

Notes:

PG&E is excluded from 2017, 2018, and 2019 average calculations due to their Dividend Suspension.

PacifiCorp

Electric Utilities (Valuation Metrics)

Line	Company	Cash Flow / Capital Spending				3 - 5 yr Projection (5)
		2019 (1)	2020 (2)	2021 (3)	2022 (4)	
1	ALLETE	0.63x	0.74x	0.80x	2.26x	1.33x
2	Alliant Energy	0.73x	0.82x	0.97x	0.94x	1.12x
3	Ameren Corp.	0.79x	0.51x	0.59x	0.72x	0.90x
4	American Electric Power	0.75x	0.74x	0.69x	0.73x	0.98x
5	Avangrid, Inc.	0.70x	0.56x	0.62x	0.57x	0.63x
6	Avista Corp.	0.89x	0.85x	0.87x	0.83x	1.04x
7	Black Hills	0.51x	0.72x	0.76x	0.85x	0.97x
8	CenterPoint Energy	0.83x	0.88x	0.62x	0.62x	0.62x
9	CMS Energy Corp.	0.79x	0.82x	0.77x	0.78x	0.90x
10	Consol. Edison	0.79x	0.82x	0.89x	0.89x	1.00x
11	Dominion Resources	0.81x	1.00x	0.89x	0.87x	0.77x
12	DTE Energy	0.83x	0.67x	0.70x	0.75x	0.92x
13	Duke Energy	0.78x	0.86x	0.93x	0.80x	1.06x
14	Edison Int'l	0.69x	0.67x	0.74x	0.69x	0.71x
15	El Paso Electric	0.96x	1.00x	0.83x	N/A	N/A
16	Entergy Corp.	0.79x	0.81x	1.05x	0.98x	1.08x
17	Eversource Energy	0.78x	0.95x	0.74x	0.74x	1.09x
18	Evergy, Inc.	1.34x	1.06x	0.96x	0.94x	1.05x
19	Exelon Corp.	1.18x	1.30x	1.32x	0.96x	1.03x
20	FirstEnergy Corp.	0.74x	0.96x	0.91x	0.82x	0.96x
21	Fortis Inc.	0.68x	0.60x	0.74x	0.75x	0.97x
22	Hawaiian Elec.	1.12x	1.10x	1.42x	1.20x	1.22x
23	IDACORP, Inc.	1.25x	1.25x	1.16x	1.14x	1.00x
24	MGE Energy	0.97x	0.73x	0.87x	0.93x	1.09x
25	NextEra Energy, Inc.	0.67x	0.58x	0.69x	0.62x	0.65x
26	NorthWestern Corp	1.07x	0.98x	0.82x	0.68x	1.11x
27	OGE Energy	1.26x	1.43x	1.13x	0.99x	1.32x
28	Otter Tail Corp.	0.80x	0.45x	1.42x	1.45x	1.04x
29	Pinnacle West Capital	0.98x	0.98x	0.85x	0.77x	1.04x
30	PNM Resources	0.72x	0.59x	0.51x	0.75x	1.03x
31	Portland General	0.99x	0.75x	0.97x	1.05x	1.44x
32	PPL Corp.	0.92x	1.06x	1.12x	1.47x	2.14x
33	Public Serv. Enterprise	1.07x	1.00x	1.05x	0.92x	1.14x
34	Sempra Energy	0.66x	0.92x	0.78x	0.93x	1.42x
35	Southern Co.	0.88x	1.01x	0.93x	1.13x	1.44x
36	WEC Energy Group	0.91x	0.70x	0.75x	0.87x	1.16x
37	Xcel Energy Inc.	0.69x	0.99x	0.86x	0.78x	0.90x
38	Average	0.86x	0.86x	0.88x	0.92x	1.06x
39	Median	0.80x	0.85x	0.86x	0.86x	1.04x

Source:

The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

Notes:

Based on the projected Cash Flow per share and Capital Spending per share.

PacifiCorp

Electric Utilities (Valuation Metrics)

		Percent Dividends to Book Value ¹																	
Line	Company	16-Year																	
		Average (1)	2021 ^{2a} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)	
1	ALLETE	5.95%	5.56%	5.61%	5.44%	5.35%	5.29%	5.45%	5.45%	5.59%	5.86%	6.04%	6.18%	6.46%	6.67%	6.78%	6.80%	6.62%	
2	Alliant Energy	6.33%	6.73%	6.68%	6.68%	6.90%	7.32%	6.96%	6.70%	6.56%	6.36%	6.37%	6.26%	6.06%	5.98%	5.48%	5.23%	5.04%	
3	Ameren Corp.	6.02%	5.84%	5.67%	5.87%	5.92%	6.01%	5.86%	5.78%	5.82%	5.93%	5.87%	4.76%	4.79%	4.66%	7.74%	7.84%	7.97%	
4	American Electric Power	6.28%	6.74%	6.86%	6.82%	6.56%	6.43%	6.42%	5.90%	5.91%	5.91%	5.99%	6.10%	6.04%	5.97%	6.23%	6.28%	6.32%	
5	Avangrid, Inc.	3.04%	3.52%	3.58%	3.57%	3.57%	3.54%	3.53%	0.00%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
6	Avista Corp.	4.99%	5.63%	5.53%	5.37%	5.52%	5.41%	5.33%	5.38%	5.33%	5.65%	5.51%	5.42%	5.07%	4.23%	3.77%	3.44%	3.26%	
7	Black Hills	5.33%	5.32%	5.32%	5.34%	5.31%	5.67%	5.55%	5.66%	5.06%	5.17%	5.31%	5.30%	5.14%	5.10%	5.15%	5.34%	5.58%	
8	CenterPoint Energy	9.85%	4.82%	8.35%	6.59%	8.94%	12.39%	12.82%	12.30%	8.96%	8.23%	8.05%	7.97%	10.36%	11.28%	12.40%	12.12%	12.09%	
9	CMS Energy Corp.	6.56%	7.87%	8.57%	8.66%	8.52%	8.43%	8.14%	8.16%	8.10%	7.86%	7.94%	7.05%	5.90%	4.38%	3.31%	2.11%	0.00%	
10	Consol. Edison	6.05%	5.48%	5.56%	5.46%	5.49%	5.55%	5.72%	5.84%	5.87%	5.88%	5.97%	6.15%	6.27%	6.47%	6.60%	7.12%	7.40%	
11	DOMINION Resources	10.37%	8.29%	11.72%	10.39%	11.31%	11.41%	12.04%	12.20%	12.16%	11.24%	11.50%	9.81%	8.86%	9.38%	9.14%	8.95%	7.46%	
12	DTE Energy	6.11%	8.64%	6.43%	6.34%	6.38%	6.34%	6.09%	5.81%	5.72%	5.79%	5.66%	5.60%	5.49%	5.59%	5.76%	5.91%	6.28%	
13	Duke Energy	5.37%	6.40%	6.39%	6.12%	6.04%	5.85%	5.73%	5.61%	5.45%	5.28%	5.22%	5.81%	5.72%	5.66%	5.45%	5.12%	0.00%	
14	Edison Intl	5.26%	7.39%	6.96%	6.73%	7.56%	6.23%	5.39%	4.97%	4.41%	4.48%	4.54%	4.16%	3.90%	4.12%	4.19%	4.53%	4.65%	
15	El Paso Electric	2.94%	N/A	5.13%	N/A	4.94%	4.67%	4.62%	4.63%	4.53%	4.46%	4.72%	3.47%	0.00%	0.00%	0.00%	0.00%	0.00%	
16	Entergy Corp.	6.72%	6.72%	6.85%	7.13%	7.65%	7.90%	7.58%	6.44%	5.95%	6.15%	6.42%	6.53%	6.82%	6.59%	7.13%	6.34%	5.34%	
17	Eversource Energy	4.95%	5.71%	5.54%	5.59%	5.57%	5.43%	5.27%	5.12%	4.99%	4.82%	4.49%	4.86%	4.75%	4.66%	4.26%	4.16%	4.00%	
18	Evergy, Inc.	5.37%	5.41%	5.32%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
19	Exelon Corp.	7.22%	4.49%	4.62%	4.38%	4.34%	4.23%	4.51%	4.42%	4.72%	5.49%	8.38%	9.68%	10.25%	10.96%	12.21%	11.87%	11.02%	
20	FirstEnergy Corp.	8.80%	10.33%	11.70%	11.86%	13.82%	16.34%	10.21%	4.91%	4.88%	5.44%	7.03%	6.93%	7.85%	7.84%	8.10%	6.96%	6.54%	
21	Fortis Inc.	5.36%	5.59%	5.39%	5.08%	5.03%	5.19%	4.80%	5.00%	5.22%	5.58%	5.81%	5.70%	5.91%	5.60%	5.55%	4.90%	5.47%	
22	Great Plains Energy	5.31%	N/A	N/A	N/A	N/A	4.78%	4.27%	4.21%	4.02%	3.91%	3.93%	3.84%	3.90%	4.03%	7.76%	9.13%	9.94%	
23	Hawaiian Elec.	7.22%	6.14%	6.17%	6.12%	6.24%	6.43%	6.51%	6.91%	7.10%	7.27%	7.62%	7.77%	7.91%	7.96%	8.08%	8.11%	9.22%	
24	IDACORP, Inc.	4.59%	5.45%	5.36%	5.24%	5.11%	5.02%	4.87%	4.70%	4.53%	4.26%	3.91%	3.62%	3.87%	4.11%	4.32%	4.48%	4.66%	
25	MGE Energy	6.16%	5.35%	5.22%	5.59%	5.60%	5.61%	5.79%	5.82%	5.84%	6.01%	6.22%	6.36%	6.66%	6.72%	6.87%	7.24%	7.77%	
26	NextEra Energy, Inc.	6.49%	8.13%	7.51%	6.61%	6.22%	6.55%	6.69%	6.29%	6.49%	6.36%	6.34%	6.12%	5.82%	5.99%	6.30%	6.22%	6.21%	
27	NorthWestern Corp	5.84%	5.77%	5.84%	5.69%	5.70%	5.76%	5.77%	5.78%	5.08%	5.71%	5.90%	6.08%	6.01%	6.13%	6.21%	6.06%	6.00%	
28	OGE Energy	6.78%	8.04%	8.71%	7.28%	6.96%	6.59%	6.70%	6.30%	5.84%	5.56%	5.70%	5.81%	6.24%	6.79%	6.89%	7.47%	7.61%	
29	Otter Tail Corp.	7.19%	6.54%	7.05%	7.19%	7.29%	7.27%	7.34%	7.70%	7.86%	8.07%	8.25%	7.52%	6.77%	6.33%	6.22%	6.67%	6.90%	
30	PG&E Corp.	4.91%	N/A	N/A	0.00%	0.00%	4.15%	5.44%	5.40%	5.50%	5.80%	6.00%	6.20%	6.38%	6.03%	6.01%	5.96%	5.88%	
31	Pinnacle West Capital	6.19%	6.47%	6.47%	6.29%	6.16%	6.03%	5.93%	5.91%	5.89%	5.84%	7.38%	6.00%	6.20%	6.42%	6.15%	5.98%	5.87%	
32	PNM Resources	3.83%	3.88%	5.23%	5.59%	5.12%	4.67%	4.18%	3.85%	3.37%	3.26%	2.89%	2.55%	2.84%	2.65%	3.20%	4.13%	3.89%	
33	Portland General	4.79%	5.63%	5.45%	5.24%	5.09%	4.94%	4.78%	4.64%	4.56%	4.70%	4.70%	4.78%	4.90%	4.93%	4.48%	4.42%	3.45%	
34	PPL Corp.	9.38%	15.51%	9.55%	9.74%	10.13%	10.18%	10.44%	10.19%	7.28%	7.43%	8.00%	7.48%	8.24%	9.47%	9.89%	8.20%	8.27%	
35	Public Serv. Enterprise	6.91%	7.34%	6.18%	6.28%	6.31%	6.27%	6.31%	6.03%	6.14%	6.28%	6.66%	6.75%	7.20%	7.66%	8.40%	8.15%	8.54%	
36	SCANA Corp.	6.44%	N/A	N/A	N/A	N/A	6.67%	5.74%	5.72%	6.01%	6.14%	6.29%	6.48%	6.54%	6.80%	7.12%	6.94%	6.89%	
37	Sempra Energy	5.34%	5.84%	5.96%	6.39%	6.59%	6.53%	5.83%	5.89%	5.74%	5.60%	5.66%	4.68%	4.16%	4.27%	4.18%	3.89%	4.19%	
38	Southern Co.	9.54%	9.79%	9.59%	9.42%	9.95%	9.59%	8.89%	9.53%	9.48%	9.39%	9.22%	9.22%	9.38%	9.55%	9.74%	9.83%	10.07%	
39	Vectren Corp.	7.71%	N/A	N/A	N/A	N/A	7.67%	7.60%	7.57%	7.51%	7.55%	7.57%	7.74%	7.78%	7.84%	7.85%	7.86%	7.97%	
40	WEC Energy Group	6.20%	7.83%	7.62%	7.36%	7.12%	6.84%	7.00%	6.35%	7.96%	7.71%	6.65%	6.05%	4.92%	4.42%	3.78%	3.77%	3.72%	
41	Westar Energy	5.71%	N/A	N/A	N/A	N/A	5.82%	5.66%	5.57%	5.60%	5.70%	5.77%	5.81%	5.84%	5.83%	5.75%	5.64%	5.56%	
42	Xcel Energy Inc.	6.15%	6.43%	6.34%	6.42%	6.39%	6.38%	6.26%	6.13%	5.94%	5.78%	5.88%	5.91%	5.97%	6.09%	6.13%	6.19%	6.16%	
43	Average	6.31%	6.68%	6.65%	6.39%	6.51%	6.67%	6.44%	6.12%	6.07%	6.10%	6.28%	6.11%	6.08%	6.13%	6.36%	6.28%	6.10%	
44	Median	6.14%	6.27%	6.18%	6.29%	6.22%	6.23%	5.83%	5.81%	5.83%	5.82%	5.99%	6.09%	6.02%	6.01%	6.21%	6.21%	6.19%	

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

³ Based on the projected 2019 Dividend Declared per share and Book Value per share, published in The Value Line Investment Survey, January 24, February 14, and March 13, 2020.

PacifiCorp

Electric Utilities
(Valuation Metrics)

		Dividends to Earnings Ratio ¹																
Line	Company	16-Year																
		Average (1)	2021 ^{2b} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
1	ALLETE	0.69	0.78	0.74	0.71	0.66	0.68	0.66	0.60	0.68	0.72	0.71	0.67	0.80	0.93	0.61	0.53	0.52
2	Alliant Energy	0.61	0.61	0.62	0.61	0.61	0.63	0.72	0.65	0.59	0.57	0.59	0.62	0.57	0.79	0.55	0.47	0.56
3	Ameren Corp.	0.67	0.57	0.57	0.57	0.56	0.64	0.64	0.70	0.67	0.76	0.66	0.63	0.56	0.55	0.88	0.85	0.95
4	American Electric Power	0.60	0.60	0.64	0.66	0.65	0.66	0.54	0.60	0.61	0.61	0.63	0.59	0.66	0.55	0.55	0.55	0.52
5	Avangrid, Inc.	0.90	0.86	0.94	0.78	0.91	1.03	0.87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	0.67	0.82	0.85	0.52	0.72	0.73	0.64	0.70	0.69	0.66	0.88	0.64	0.61	0.51	0.51	0.83	0.39
7	Black Hills	1.11	0.58	0.58	0.58	0.56	0.54	0.64	0.57	0.54	0.58	0.75	1.45	0.87	0.61	7.78	0.51	0.60
8	CenterPoint Energy	0.75	0.70	0.70	0.58	1.51	0.86	1.03	0.92	0.67	0.67	0.60	0.62	0.73	0.75	0.56	0.58	0.45
9	CMS Energy Corp.	0.57	0.67	0.62	0.64	0.62	0.61	0.63	0.61	0.62	0.61	0.63	0.58	0.50	0.54	0.29	0.31	N/A
10	Consol. Edison	0.69	0.70	0.76	0.73	0.63	0.67	0.68	0.64	0.70	0.63	0.63	0.67	0.69	0.75	0.70	0.67	0.78
11	Dominion Resources	0.67	0.81	1.90	1.68	1.03	0.86	0.81	0.81	0.79	0.73	0.77	0.71	0.63	0.66	0.52	0.69	0.58
12	DTE Energy	0.67	0.95	0.58	0.61	0.58	0.59	0.63	0.64	0.53	0.69	0.62	0.63	0.58	0.65	0.78	0.80	0.85
13	Duke Energy	0.81	0.79	0.97	0.74	0.88	0.83	0.91	0.79	0.76	0.78	0.82	0.72	0.72	0.83	0.89	0.72	N/A
14	Edison Intl	0.40	1.68	1.50	0.62	-1.93	0.50	0.50	0.42	0.34	0.36	0.29	0.40	0.38	0.38	0.33	0.35	0.34
15	El Paso Electric	0.50	N/A	N/A	N/A	0.68	0.54	0.51	0.57	0.49	0.48	0.43	0.27	N/A	N/A	N/A	N/A	N/A
16	Entergy Corp.	0.54	0.56	0.54	0.58	0.61	0.67	0.50	0.57	0.58	0.67	0.55	0.44	0.49	0.48	0.48	0.46	0.40
17	Eversource Energy	0.60	0.70	0.64	0.62	0.62	0.61	0.60	0.61	0.61	0.59	0.70	0.50	0.49	0.50	0.44	0.49	0.88
18	Evergy, Inc.	0.57	0.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	0.58	0.59	0.59	0.48	0.67	0.47	0.70	0.49	0.59	0.63	1.09	0.56	0.54	0.49	0.50	0.45	0.47
20	FirstEnergy Corp.	0.81	0.65	0.84	0.83	1.37	0.53	0.69	0.72	1.69	0.56	1.03	1.17	0.68	0.66	0.50	0.49	0.48
21	Fortis Inc.	0.71	0.80	0.76	0.69	0.69	0.62	0.82	0.68	0.94	0.77	0.73	0.67	0.69	0.69	0.66	0.64	0.49
22	Great Plains Energy	-0.82	N/A	N/A	N/A	N/A	-18.33	0.66	0.73	0.60	0.54	0.63	0.67	0.54	0.81	1.43	0.90	1.02
23	Hawaiian Elec.	0.85	0.63	0.73	0.64	0.67	0.76	0.54	0.83	0.76	0.77	0.74	0.86	1.02	1.36	1.16	1.12	0.93
24	IDACORP, Inc.	0.50	0.59	0.58	0.56	0.53	0.53	0.53	0.50	0.46	0.43	0.41	0.36	0.41	0.45	0.55	0.65	0.51
25	MGE Energy	0.57	0.52	0.56	0.55	0.54	0.57	0.56	0.56	0.48	0.50	0.56	0.57	0.60	0.66	0.60	0.62	0.68
26	NextEra Energy, Inc.	0.56	0.85	0.67	0.64	0.66	0.60	0.60	0.51	0.52	0.55	0.53	0.45	0.42	0.47	0.44	0.50	0.47
27	NorthWestern Corp	0.68	0.68	0.78	0.65	0.65	0.63	0.59	0.66	0.54	0.62	0.65	0.57	0.64	0.66	0.75	0.89	0.95
28	OGE Energy	0.58	0.69	0.76	0.67	0.66	0.66	0.68	0.62	0.48	0.44	0.45	0.44	0.49	0.54	0.56	0.52	0.55
29	Otter Tail Corp.	1.08	0.37	0.63	0.65	0.65	0.69	0.78	0.79	0.78	0.87	1.13	2.64	3.13	1.68	1.09	0.66	0.68
30	PG&E Corp.	0.65	N/A	N/A	N/A	N/A	0.44	0.68	0.91	0.59	0.99	0.88	0.65	0.65	0.55	0.48	0.52	0.48
31	Pinnacle West Capital	0.69	0.62	0.66	0.64	0.63	0.61	0.65	0.62	0.65	0.61	0.76	0.70	0.68	0.93	0.99	0.71	0.64
32	PNM Resources	0.89	0.42	0.58	0.52	0.65	0.52	0.53	0.49	0.52	0.48	0.44	0.46	0.57	0.86	5.50	1.20	0.50
33	Portland General	0.62	0.62	0.92	0.64	0.60	0.59	0.58	0.58	0.51	0.62	0.57	0.54	0.62	0.77	0.70	0.40	0.59
34	PPL Corp.	0.78	2.77	0.81	0.70	0.64	0.75	0.54	0.63	0.63	0.62	0.55	0.54	0.61	1.16	0.55	0.46	0.48
35	Public Serv. Enterprise	0.55	0.89	0.54	0.48	0.65	0.61	0.58	0.47	0.49	0.59	0.58	0.44	0.45	0.43	0.44	0.45	0.62
36	SCANA Corp.	0.61	N/A	N/A	N/A	N/A	0.58	0.55	0.57	0.55	0.60	0.63	0.65	0.64	0.66	0.62	0.64	0.65
37	Sempra Energy	0.56	1.35	0.64	0.65	0.65	0.71	0.71	0.54	0.57	0.60	0.55	0.43	0.39	0.33	0.31	0.29	0.28
38	Southern Co.	0.75	0.75	0.78	0.78	0.79	0.72	0.79	0.76	0.75	0.75	0.73	0.73	0.76	0.75	0.74	0.70	0.73
39	Vectren Corp.	0.75	N/A	N/A	N/A	N/A	0.66	0.64	0.64	0.72	0.86	0.72	0.80	0.84	0.75	0.80	0.69	0.85
40	WEC Energy Group	0.55	0.66	0.67	0.66	0.66	0.66	0.67	0.74	0.60	0.58	0.51	0.48	0.42	0.42	0.36	0.35	0.35
41	Westar Energy	0.68	N/A	N/A	N/A	N/A	0.70	0.63	0.69	0.60	0.60	0.61	0.72	0.69	0.94	0.89	0.59	0.52
42	Xcel Energy Inc.	0.62	0.62	0.62	0.61	0.62	0.63	0.62	0.61	0.59	0.58	0.58	0.60	0.64	0.65	0.64	0.67	0.65
43	Average	0.65	0.78	0.75	0.66	0.64	0.18	0.65	0.64	0.64	0.63	0.66	0.67	0.68	0.70	0.95	0.61	0.61
44	Median	0.63	0.68	0.67	0.64	0.65	0.63	0.64	0.63	0.60	0.61	0.63	0.62	0.62	0.66	0.60	0.59	0.56

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

Note:

^b Based on the projected 2019 Dividends Declared per share and Earnings per share, published in The Value Line Investment Survey, January 24, February 14, and March 13, 2020.

PacifiCorp

Electric Utilities
(Valuation Metrics)

Cash Flow to Capital Spending Ratio ¹

Line	Company	16-Year																
		Average (1)	2021 ^{2c} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
1	ALLETE	0.80	0.55	0.55	0.63	1.22	1.61	1.32	1.16	0.45	0.67	0.49	0.77	0.63	0.39	0.46	0.65	1.23
2	Alliant Energy	0.80	0.95	N/A	N/A	N/A	0.49	N/A	0.81	0.91	1.01	0.57	0.91	0.67	0.39	0.57	1.04	1.27
3	Ameren Corp.	0.88	0.62	0.62	0.79	0.80	0.75	0.75	0.75	0.75	0.89	1.07	1.31	1.36	0.81	0.66	0.97	1.21
4	American Electric Power	0.87	0.81	0.81	0.75	0.68	0.67	0.85	0.85	0.87	0.91	1.07	1.19	1.24	1.02	0.70	0.77	0.75
5	Avangrid, Inc.	0.70	0.56	0.56	0.62	0.85	0.57	0.86	0.89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	0.90	0.88	0.88	0.92	0.78	0.77	0.84	0.76	0.80	0.86	0.80	0.90	0.99	1.15	0.97	0.73	1.36
7	Black Hills	0.65	0.61	0.61	0.53	0.87	1.17	0.71	0.64	0.70	0.74	0.71	0.40	0.41	0.61	0.35	0.76	0.55
8	CenterPoint Energy	1.03	0.73	0.73	0.83	0.98	1.22	1.12	0.92	1.20	1.18	1.37	1.12	0.88	0.99	1.16	0.98	1.08
9	CMS Energy Corp.	0.87	0.78	0.78	0.79	0.77	0.89	0.81	0.81	0.74	0.82	0.82	1.05	1.13	0.97	1.11	0.55	1.07
10	Consol. Edison	0.82	0.83	0.83	0.87	0.82	0.76	0.65	0.76	0.88	0.86	1.01	0.98	0.90	0.75	0.70	0.81	0.74
11	Dominion Resources	1.78	0.73	0.73	0.96	1.04	0.81	0.65	0.64	0.63	0.77	0.73	0.79	0.87	0.75	0.83	0.74	0.85
12	DTE Energy	1.00	0.74	0.74	0.83	0.84	0.94	0.93	0.84	1.02	0.96	0.93	1.09	1.51	1.50	0.98	1.07	1.03
13	Duke Energy	0.89	0.85	0.85	0.80	0.81	0.87	0.82	0.96	1.20	1.09	0.87	0.89	0.78	0.77	0.71	1.09	0.97
14	Edison Intl	0.74	0.55	0.55	0.68	0.34	0.94	0.91	0.80	0.83	0.80	0.76	0.61	0.60	0.79	0.93	0.88	0.93
15	El Paso Electric	0.87	0.83	N/A	N/A	0.86	1.04	0.85	0.67	0.69	0.79	0.85	1.03	0.98	0.68	0.78	0.84	1.26
16	Energy Corp.	0.98	0.74	0.74	0.79	0.73	0.76	1.08	1.05	1.19	1.03	0.88	1.15	1.24	1.02	0.93	1.14	1.13
17	Eversource Energy	0.85	0.80	0.80	0.75	0.83	0.79	0.87	0.91	0.90	1.13	0.86	0.80	1.05	0.96	0.77	0.68	0.67
18	Evergy, Inc.	1.03	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Exelon Corp.	1.24	1.09	1.09	1.20	1.05	1.06	0.76	0.82	0.93	1.07	0.98	1.19	1.66	1.66	1.61	1.84	1.86
20	FirstEnergy Corp.	1.02	0.83	0.83	0.80	0.76	1.03	0.94	0.93	0.54	0.91	0.85	1.05	1.32	1.22	0.95	1.56	1.75
21	Fortis Inc.	0.68	0.65	0.65	0.68	0.72	0.76	0.76	0.65	0.60	0.77	0.72	0.66	0.68	0.63	0.66	0.57	0.63
22	Great Plains Energy	0.79	N/A	N/A	N/A	N/A	0.78	1.17	0.90	0.79	0.91	0.86	1.03	0.86	0.50	0.35	0.69	0.64
23	Hawaiian Elec.	1.09	1.27	1.27	1.08	0.85	0.81	1.37	0.98	1.03	0.92	0.99	1.30	1.50	0.79	0.87	1.15	1.23
24	IDACORP, Inc.	1.12	1.33	1.33	1.46	1.42	1.33	1.16	1.15	1.21	1.34	1.24	0.86	0.78	0.96	0.82	0.64	0.89
25	MGE Energy	1.08	0.82	0.82	0.97	0.66	1.19	1.44	1.60	1.31	0.96	1.05	1.56	1.57	1.13	0.87	0.59	0.80
26	NextEra Energy, Inc.	0.62	0.58	0.58	0.67	0.56	0.53	0.63	0.71	0.77	0.68	0.39	0.58	0.69	0.60	0.63	0.56	0.73
27	NorthWestern Corp	1.04	0.84	0.84	1.13	1.23	1.21	1.13	1.01	0.93	0.92	0.88	1.04	0.76	0.88	1.27	1.23	1.29
28	OGE Energy	0.91	1.24	1.24	1.27	1.30	0.81	1.00	1.18	1.19	0.69	0.63	0.51	0.69	0.61	0.60	0.79	0.84
29	Otter Tail Corp.	0.84	0.48	0.48	0.80	1.49	1.10	0.84	0.74	0.70	0.67	0.85	1.16	1.09	0.56	0.37	0.65	1.44
30	PG&E Corp.	0.58	N/A	0.28	- 0.70	- 0.58	0.82	0.73	0.69	0.80	0.56	0.68	0.83	0.85	0.78	0.84	1.02	1.12
31	Pinnacle West Capital	0.95	0.91	0.91	1.03	1.06	0.76	0.81	0.92	0.97	0.87	0.96	0.91	0.97	1.06	0.86	0.99	1.28
32	PNM Resources	0.71	0.72	0.72	0.78	0.82	0.84	0.57	0.57	0.63	0.80	0.87	0.77	0.82	0.70	0.44	0.43	0.89
33	Portland General	0.84	0.78	0.78	1.03	1.00	1.07	0.88	0.80	0.47	0.59	1.28	1.25	0.81	0.44	0.77	0.72	0.78
34	PPL Corp.	0.96	0.90	0.90	0.98	0.93	0.82	1.00	0.72	0.75	0.69	0.91	1.07	1.11	1.07	1.25	1.13	1.18
35	Public Serv. Enterprise	1.12	1.13	1.13	1.08	0.70	0.64	0.61	0.80	1.04	0.93	0.96	1.30	1.23	1.41	1.34	1.64	1.94
36	SCANA Corp.	0.86	N/A	N/A	N/A	N/A	0.86	0.66	0.83	0.90	0.83	0.77	0.88	0.86	0.76	0.76	0.92	1.26
37	Sempra Energy	0.81	0.77	0.77	0.88	0.80	0.67	0.56	0.81	0.74	0.84	0.73	0.72	0.90	1.02	0.87	0.90	0.93
38	Southern Co.	0.89	0.99	0.99	0.88	0.83	0.90	0.77	0.88	0.80	0.86	0.93	0.94	0.93	0.78	0.87	0.91	1.00
39	Vectren Corp.	1.00	N/A	N/A	N/A	N/A	0.82	0.87	0.95	0.98	1.05	1.13	1.20	1.31	0.83	0.82	0.98	1.00
40	WEC Energy Group	0.98	0.97	0.97	0.91	0.90	0.92	1.20	0.97	1.37	1.42	1.30	1.02	0.97	0.89	0.61	0.56	0.69
41	Westar Energy	0.72	N/A	N/A	N/A	N/A	0.91	0.63	0.86	0.70	0.72	0.67	0.71	0.88	0.68	0.36	0.48	1.00
42	Xcel Energy Inc.	0.75	0.66	0.66	0.78	0.77	0.84	0.79	0.63	0.68	0.60	0.76	0.83	0.76	0.89	0.75	0.71	0.90
43	Average	0.88	0.83	0.80	0.84	0.85	0.89	0.88	0.86	0.87	0.88	0.88	0.96	0.98	0.86	0.80	0.88	1.05
44	Median	0.83	0.81	0.78	0.83	0.83	0.84	0.84	0.83	0.82	0.86	0.87	0.96	0.90	0.80	0.80	0.82	1.00

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

Notes:

^c Based on the projected Cash Flow per share and Capital Spending per share

PacifiCorp

Natural Gas Utilities
(Valuation Metrics)

Price to Earnings (P/E) Ratio ¹

Line	Company	16-Year																
		Average (1)	2021 ² (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
1	Atmos Energy	17.37	19.30	22.30	23.22	21.75	22.04	20.80	17.50	16.09	15.87	15.93	14.36	13.21	12.54	13.59	15.87	13.52
2	Chesapeake Utilities	18.86	26.30	21.57	24.74	22.94	27.84	21.77	19.15	17.70	15.62	14.81	14.16	12.21	14.20	14.15	16.72	17.85
3	New Jersey Resources	17.29	17.50	17.70	24.33	15.64	22.38	21.25	16.61	11.73	15.98	16.83	16.76	14.98	14.93	12.27	21.61	16.13
4	NiSource Inc.	19.86	19.50	18.67	21.32	19.34	NMF	23.18	37.34	22.74	18.89	17.87	19.36	15.33	14.34	12.07	18.82	19.16
5	Northwest Nat. Gas	20.91	17.60	24.96	30.85	26.63	NMF	26.92	23.69	20.69	19.38	21.08	19.02	16.97	15.17	18.08	16.74	15.85
6	ONE Gas Inc.	21.56	18.60	21.71	25.27	23.06	23.47	22.74	19.79	17.83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	18.55	14.30	14.89	28.28	22.64	27.92	21.71	17.95	18.03	18.90	16.94	18.48	16.81	14.96	15.90	17.18	11.86
8	Southwest Gas	17.57	15.30	16.80	21.30	20.61	22.21	21.64	19.35	17.86	15.76	15.00	15.69	13.97	12.20	20.27	17.26	15.94
9	Spire Inc.	18.96	19.00	51.12	22.79	16.74	19.62	19.61	16.49	19.80	21.25	14.46	13.05	13.74	13.39	14.31	14.19	13.60
10	UGI Corp.	15.75	12.90	13.80	23.40	17.77	20.84	19.33	17.71	15.81	15.44	16.38	15.03	10.86	10.30	13.30	15.14	13.97
11	WGL Holdings Inc.	16.71	N/A	N/A	N/A	N/A	25.40	20.05	16.99	15.15	18.25	15.27	16.97	15.11	12.58	13.66	15.60	15.46
12	Average	18.36	18.03	22.35	24.55	20.71	23.55	21.73	20.23	17.58	17.53	16.46	16.29	14.32	13.46	14.76	16.91	15.33
13	Median	17.47	18.10	20.12	23.87	21.18	22.38	21.64	17.95	17.83	17.11	16.15	16.22	14.48	13.80	13.91	16.73	15.66

Market Price to Cash Flow (MP/CF) Ratio ¹

Line	Company	16-Year																
		Average (1)	2021 ^{2a} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
14	Atmos Energy	9.04	10.97	13.11	13.35	12.02	11.99	11.36	9.30	8.79	7.72	7.02	6.87	6.15	5.76	6.48	7.44	6.36
15	Chesapeake Utilities	10.12	13.41	12.31	14.17	12.24	13.78	12.06	10.16	9.25	8.12	7.46	7.35	6.36	9.48	7.88	8.58	9.40
16	New Jersey Resources	12.00	11.56	11.10	15.98	11.44	14.45	13.94	11.71	8.95	11.29	12.29	12.71	11.32	11.34	9.15	13.76	11.01
17	NiSource Inc.	7.86	7.69	7.83	8.81	8.91	12.11	8.56	10.38	10.56	8.71	7.81	6.81	5.09	4.06	4.87	6.69	6.87
18	Northwest Nat. Gas	12.66	8.57	10.10	13.13	11.75	59.72	11.57	9.46	8.84	8.61	9.48	9.08	8.94	8.26	8.75	8.54	7.83
19	ONE Gas Inc.	10.67	9.59	10.85	12.75	11.85	11.89	11.10	9.19	8.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	South Jersey Inds.	10.57	9.26	7.54	12.38	10.72	12.33	10.88	10.70	10.57	11.57	10.95	11.98	10.78	9.57	10.38	11.23	8.32
21	Southwest Gas	6.44	6.87	7.05	8.92	9.32	9.10	7.41	6.56	6.35	5.94	5.55	5.60	4.91	3.84	4.89	5.42	5.28
22	Spire Inc.	9.80	7.55	14.01	11.27	9.60	10.39	10.32	8.47	12.03	13.76	8.80	8.08	8.12	8.58	8.95	8.46	8.46
23	UGI Corp.	8.04	9.56	7.39	12.95	9.01	10.09	9.02	8.47	7.49	6.55	6.30	7.51	6.02	5.74	7.11	7.92	7.48
24	WGL Holdings Inc.	9.17	N/A	N/A	N/A	N/A	12.92	11.36	9.59	8.46	9.83	9.03	9.52	8.34	7.17	7.68	8.39	7.81
25	Average	9.59	9.50	10.13	12.37	10.69	16.25	10.69	9.45	9.04	9.21	8.47	8.55	7.60	7.38	7.62	8.64	7.88
26	Median	8.75	9.41	10.47	12.65	11.08	12.11	11.10	9.46	8.84	8.66	8.31	7.80	7.24	7.71	7.76	8.42	7.82

Market Price to Book Value (MP/BV) Ratio ¹

Line	Company	16-Year																
		Average (1)	2021 ^{2b} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
27	Atmos Energy	1.58	1.59	1.95	2.10	2.03	2.16	2.11	1.72	1.55	1.39	1.28	1.30	1.18	1.05	1.20	1.40	1.34
28	Chesapeake Utilities	2.02	2.62	2.27	2.69	2.50	2.51	2.28	2.19	2.12	1.83	1.66	1.61	1.40	1.37	1.64	1.84	1.85
29	New Jersey Resources	2.26	2.26	1.90	2.75	2.63	2.70	2.52	2.28	2.13	2.05	2.33	2.31	2.09	2.16	1.92	2.17	2.01
30	NiSource Inc.	1.53	1.81	1.95	2.09	1.92	1.96	1.84	1.95	1.94	1.58	1.37	1.15	0.92	0.69	0.94	1.16	1.19
31	Northwest Nat. Gas	1.87	1.45	1.98	2.38	2.35	2.41	1.92	1.63	1.59	1.56	1.72	1.70	1.78	1.73	1.96	2.05	1.69
32	ONE Gas Inc.	1.69	1.61	1.90	2.20	1.93	1.89	1.67	1.26	1.07	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
33	South Jersey Inds.	2.05	1.54	1.52	2.06	2.11	2.29	1.79	1.77	2.07	2.27	2.21	2.59	2.38	1.95	2.08	2.21	1.93
34	Southwest Gas	1.55	1.32	1.49	1.84	1.79	2.13	1.96	1.68	1.68	1.61	1.51	1.43	1.24	0.97	1.20	1.46	1.46
35	Spire Inc.	1.57	1.47	1.67	1.78	1.63	1.65	1.64	1.44	1.33	1.34	1.51	1.46	1.39	1.68	1.71	1.66	1.71
36	UGI Corp.	2.03	1.64	1.87	2.92	2.30	2.62	2.41	2.29	1.97	1.69	1.45	1.75	1.55	1.66	2.01	2.16	2.21
37	WGL Holdings Inc.	1.81	N/A	N/A	N/A	N/A	2.69	2.45	2.15	1.69	1.71	1.66	1.63	1.50	1.45	1.59	1.64	1.59
38	Average	1.82	1.73	1.85	2.28	2.12	2.27	2.05	1.85	1.74	1.70	1.67	1.69	1.54	1.47	1.62	1.78	1.70
39	Median	1.69	1.60	1.90	2.15	2.07	2.29	1.96	1.77	1.69	1.65	1.58	1.62	1.45	1.56	1.67	1.75	1.70

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, February 25, 2022

Notes:

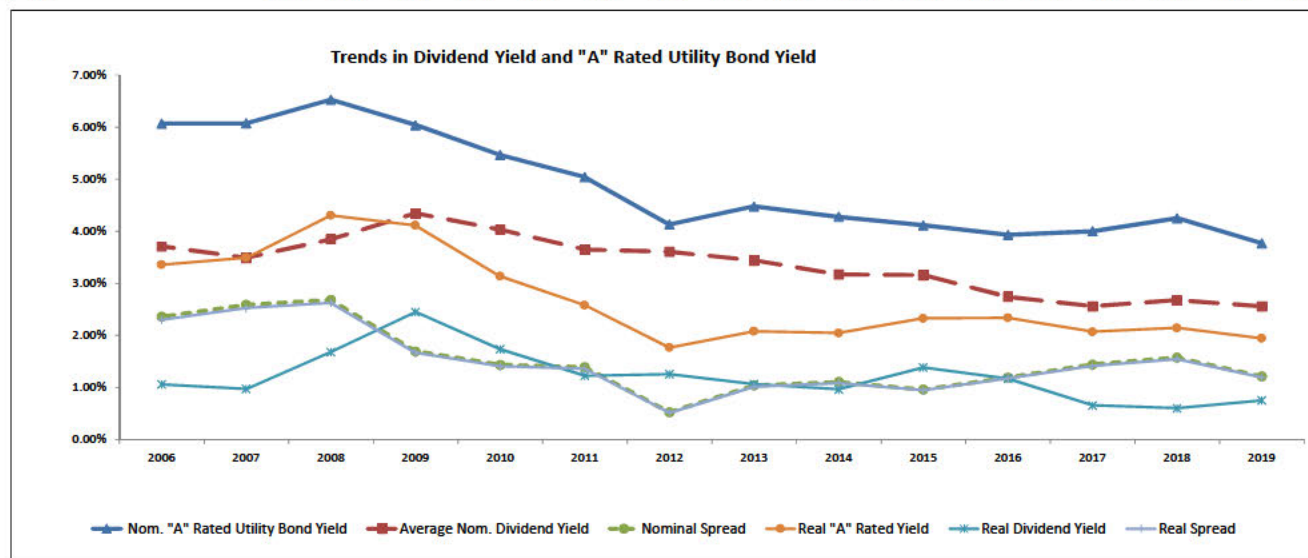
^a Based on the average of the high and low price for year and the projected Cash Flow per share, published in The Value Line Investment Survey.

^b Based on the average of the high and low price for the year and the projected Book Value per share, published in The Value Line Investment Survey.

PacifiCorp

Natural Gas Utilities (Valuation Metrics)

Line	Company	Dividend Yield ¹																
		16-Year Average (1)	2021 ^{2a} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
1	Alamos Energy	3.45%	2.64%	2.19%	2.08%	2.23%	2.27%	2.39%	2.88%	3.11%	3.53%	4.13%	4.19%	4.70%	5.34%	4.78%	4.18%	4.88%
2	Chesapeake Utilities	2.75%	1.59%	1.86%	1.88%	1.78%	1.89%	1.91%	2.18%	2.44%	2.87%	3.25%	3.38%	3.91%	4.09%	4.10%	3.62%	3.76%
3	New Jersey Resources	3.21%	3.50%	3.47%	2.50%	2.61%	2.89%	2.88%	3.14%	3.50%	3.71%	3.38%	3.33%	3.69%	3.46%	3.35%	3.02%	3.19%
4	NISource Inc.	4.00%	3.69%	3.41%	2.86%	3.10%	2.79%	2.76%	3.53%	2.89%	3.30%	3.84%	4.53%	5.66%	7.64%	5.69%	4.29%	4.21%
5	Northwest Nat. Gas	3.56%	3.90%	3.33%	2.81%	3.05%	3.02%	3.28%	4.01%	4.14%	4.22%	3.83%	3.85%	3.83%	3.73%	3.27%	3.12%	3.73%
6	ONE Gas Inc.	2.53%	3.12%	2.70%	2.25%	2.46%	2.37%	2.32%	2.71%	2.28%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	3.48%	4.88%	4.76%	3.66%	3.62%	3.20%	3.64%	3.95%	3.40%	3.14%	3.22%	2.81%	3.00%	3.43%	3.08%	2.81%	3.15%
8	Southwest Gas	2.92%	3.65%	3.28%	2.60%	2.74%	2.46%	2.62%	2.87%	2.72%	2.69%	2.75%	2.78%	3.15%	4.01%	3.19%	2.58%	2.60%
9	Spire Inc.	3.78%	3.79%	3.38%	2.95%	3.10%	3.09%	3.08%	3.53%	3.78%	3.96%	4.11%	4.31%	4.70%	3.91%	3.94%	4.43%	4.34%
10	UGI Corp.	2.86%	3.25%	3.56%	2.16%	2.09%	2.01%	2.35%	2.50%	2.61%	3.01%	3.88%	3.30%	3.48%	3.23%	2.85%	2.60%	2.96%
11	WGL Holdings Inc.	3.91%	N/A	N/A	N/A	N/A	2.56%	2.94%	3.41%	4.24%	3.94%	3.89%	4.06%	4.37%	4.62%	4.22%	4.19%	4.48%
12	Average	3.35%	3.40%	3.19%	2.56%	2.68%	2.56%	2.74%	3.16%	3.17%	3.44%	3.61%	3.65%	4.03%	4.35%	3.85%	3.49%	3.71%
13	Median	3.39%	3.57%	3.35%	2.65%	2.88%	2.56%	2.76%	3.14%	3.11%	3.42%	3.75%	3.60%	3.80%	3.96%	3.65%	3.37%	3.75%
14	20-Yr Treasury Yields ³	3.18%	1.98%	1.35%	2.40%	3.02%	2.85%	2.23%	2.55%	3.07%	3.12%	2.54%	3.62%	4.03%	4.11%	4.36%	4.91%	4.99%
15	20-Yr TIPS ³	1.05%	-0.43%	-0.30%	0.80%	0.94%	0.75%	0.86%	0.78%	0.87%	0.75%	0.21%	1.19%	1.73%	2.21%	2.19%	2.38%	2.31%
16	Implied Inflation ³	2.11%	2.42%	1.66%	1.79%	2.06%	1.89%	1.56%	1.75%	2.19%	2.35%	2.33%	2.40%	2.26%	1.85%	2.13%	2.49%	2.62%
17	Real Dividend Yield ⁴	1.21%	0.96%	1.51%	0.75%	0.60%	0.65%	1.17%	1.38%	0.96%	1.06%	1.25%	1.22%	1.73%	2.45%	1.68%	0.97%	1.06%
Utility																		
18	Nominal "A" Rated Yield ⁴	4.64%	3.10%	3.05%	3.77%	4.25%	4.00%	3.93%	4.12%	4.28%	4.48%	4.13%	5.04%	5.46%	6.04%	6.53%	6.07%	6.07%
19	Real "A" Rated Yield	2.48%	0.67%	1.37%	1.94%	2.14%	2.07%	2.34%	2.33%	2.04%	2.08%	1.76%	2.58%	3.13%	4.11%	4.31%	3.49%	3.36%
Spreads (Utility Bond - Stock)																		
20	Nominal ⁵	1.30%	-0.30%	-0.14%	1.21%	1.57%	1.44%	1.19%	0.96%	1.11%	1.04%	0.32%	1.39%	1.43%	1.69%	2.68%	2.59%	2.36%
21	Real ⁶	1.27%	-0.29%	-0.14%	1.19%	1.54%	1.41%	1.17%	0.94%	1.08%	1.01%	0.51%	1.36%	1.40%	1.66%	2.62%	2.52%	2.30%
Spreads (Treasury Bond - Stock)																		
22	Nominal ⁷	-0.16%	-1.42%	-1.84%	-0.15%	0.34%	0.09%	-0.52%	-0.61%	-0.10%	-0.32%	-1.06%	-0.03%	0.00%	-0.24%	0.51%	1.42%	1.28%
23	Real ⁸	-0.16%	-1.39%	-1.81%	-0.15%	0.34%	0.09%	-0.51%	-0.60%	-0.10%	-0.31%	-1.04%	-0.03%	0.00%	-0.23%	0.50%	1.39%	1.25%



Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, February 25, 2022

³ St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org>.

⁴ www.moodys.com, Bond Yields and Key Indicators, through December 31, 2021.

Notes:

^a Based on the average of the high and low price for the year and the projected Dividends Declared per share published in the Value Line Investment Survey.

^b Line 16 = (1 + Line 14) / (1 + Line 15) - 1.

^c Line 17 = (1 + Line 12) / (1 + Line 16) - 1.

^d The spread being measured here is the nominal A-rated utility bond yield over the average nominal utility dividend yield; (Line 18 - Line 12).

^e The spread being measured here is the real A-rated utility bond yield over the average real utility dividend yield; (Line 19 - Line 17)

^f The spread being measured here is the nominal 20-Year Treasury yield over the average nominal utility dividend yield; (Line 14 - Line 12).

^g The spread being measured here is the real 20-Year TIPS yield over the average real utility dividend yield; (Line 15 - Line 17)

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Natural Gas Utilities (Valuation Metrics)

Line	Company	Dividend per Share ¹																2018 CAGR (18)	2017 CAGR (19)	
		16-Year																		
		Average (1)	2021 ² (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)			2006 (17)
1	Atmos Energy	1.53	2.30	1.56	1.48	1.94	1.80	1.68	1.56	1.48	1.40	1.38	1.36	1.34	1.32	1.30	1.28	1.26	2.89%	3.30%
2	Chesapeake Utilities	1.05	1.69	1.12	1.07	1.39	1.26	1.19	1.12	1.07	1.01	0.96	0.91	0.87	0.83	0.81	0.78	0.77	3.97%	4.58%
3	New Jersey Resources	0.82	1.27	0.93	0.86	1.11	1.04	0.98	0.93	0.86	0.81	0.77	0.72	0.68	0.62	0.56	0.51	0.48	5.70%	7.28%
4	NiSource Inc.	0.88	0.84	0.83	1.02	0.78	0.70	0.64	0.83	1.02	0.98	0.94	0.92	0.92	0.92	0.92	0.92	0.92	-1.08%	-2.45%
5	Northwest Nat. Gas	1.75	1.91	1.86	1.85	1.89	1.88	1.87	1.86	1.85	1.83	1.79	1.75	1.68	1.60	1.52	1.44	1.39	2.05%	2.78%
6	ONE Gas Inc.	1.40	2.16	1.20	0.84	1.84	1.68	1.40	1.20	0.84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11.58%	25.99%
7	South Jersey Inds.	0.86	1.19	1.02	0.96	1.13	1.10	1.06	1.02	0.96	0.90	0.83	0.75	0.68	0.61	0.56	0.51	0.46	6.11%	8.25%
8	Southwest Gas	1.40	2.26	1.62	1.46	2.08	1.98	1.80	1.62	1.46	1.32	1.18	1.06	1.00	0.95	0.90	0.86	0.82	6.33%	8.34%
9	Spire Inc.	1.78	2.49	1.84	1.76	2.25	2.10	1.96	1.84	1.76	1.70	1.66	1.61	1.57	1.53	1.49	1.45	1.40	3.18%	3.75%
10	UGI Corp.	0.77	1.32	0.89	0.79	1.02	0.96	0.93	0.89	0.79	0.74	0.71	0.68	0.60	0.52	0.50	0.48	0.46	5.47%	7.02%
11	WGL Holdings Inc.	1.64	N/A	1.83	1.72	N/A	2.02	1.93	1.83	1.72	1.66	1.59	1.55	1.50	1.47	1.41	1.37	1.35	N/A	3.77%
12	Average	1.25	1.74	1.34	1.25	1.54	1.50	1.40	1.34	1.25	1.24	1.18	1.13	1.08	1.04	1.00	0.96	0.93	4.62%	6.60%
13	Industry Average Growth	4.67%	30.43%	6.50%	-18.69%	2.76%	6.99%	5.03%	6.50%	1.58%	4.67%	4.35%	4.34%	4.47%	4.20%	3.83%	3.13%			

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, February 25, 2022

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Natural Gas Utilities (Valuation Metrics)

		Earnings per Share ¹																
Line	Company	16-Year																
		Average (1)	2021 ² (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
1	Atmos Energy	3.01	5.12	4.72	4.35	4.00	3.60	3.38	3.09	2.96	2.50	2.10	2.26	2.16	1.97	2.00	1.94	2.00
2	Chesapeake Utilities	2.50	4.70	4.21	3.72	3.45	2.68	2.86	2.68	2.47	2.26	1.99	1.91	1.82	1.43	1.39	1.29	1.15
3	New Jersey Resources	1.60	2.16	2.07	1.96	2.72	1.73	1.61	1.78	2.08	1.37	1.36	1.29	1.23	1.20	1.35	0.78	0.93
4	NiSource Inc.	1.16	1.35	1.32	1.31	1.30	0.39	1.00	0.63	1.67	1.57	1.37	1.05	1.06	0.84	1.34	1.14	1.14
5	Northwest Nat. Gas	2.11	2.50	2.30	2.19	2.33	-1.94	2.12	1.96	2.16	2.24	2.22	2.39	2.73	2.83	2.57	2.76	2.35
6	ONE Gas Inc.	3.03	3.85	3.68	3.51	3.25	3.02	2.65	2.24	2.07	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	1.36	1.65	1.68	1.12	1.38	1.23	1.34	1.44	1.57	1.52	1.52	1.45	1.35	1.19	1.14	1.05	1.23
8	Southwest Gas	2.89	3.80	4.14	3.94	3.68	3.62	3.18	2.92	3.01	3.11	2.86	2.43	2.27	1.94	1.39	1.95	1.98
9	Spire Inc.	2.92	4.96	1.44	3.52	4.33	3.43	3.24	3.16	2.35	2.02	2.79	2.86	2.43	2.92	2.64	2.31	2.37
10	UGI Corp.	1.86	2.96	2.67	2.28	2.74	2.29	2.05	2.01	1.92	1.59	1.17	1.37	1.59	1.57	1.33	1.18	1.10
11	WGL Holdings Inc.	2.56	N/A	N/A	N/A	N/A	3.11	3.27	3.16	2.68	2.31	2.68	2.25	2.27	2.53	2.44	2.09	1.94
12	Average	2.23	3.31	2.82	2.79	2.92	2.11	2.43	2.28	2.27	2.05	2.01	1.93	1.89	1.84	1.76	1.65	1.62
13	Industry Average Growth	5.40%	17.07%	1.18%	-4.39%	38.59%	-13.26%	6.50%	0.54%	10.67%	2.13%	4.13%	1.87%	2.61%	4.79%	6.67%	1.82%	

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, February 25, 2022

PacifiCorp

Natural Gas Utilities (Valuation Metrics)

<u>Line</u>	<u>Company</u>	<u>Cash Flow / Capital Spending</u>			
		<u>2019</u> (1)	<u>2020</u> (2)	<u>2021</u> (3)	<u>3 - 5 yr</u> <u>Projection</u> (4)
1	Atmos Energy	0.53x	0.53x	0.53x	0.68x
2	Chesapeake Utilities	0.66x	0.64x	0.82x	0.88x
3	New Jersey Resources	1.41x	0.65x	0.72x	0.98x
4	NiSource Inc.	0.66x	0.65x	0.69x	0.94x
5	Northwest Nat. Gas	0.77x	0.75x	0.61x	0.73x
6	ONE Gas Inc.	0.78x	0.88x	0.86x	1.02x
7	South Jersey Inds.	0.48x	0.47x	0.49x	0.50x
8	Southwest Gas	0.62x	0.53x	0.61x	0.53x
9	Spire Inc.	0.65x	0.65x	0.70x	0.90x
10	UGI Corp.	1.33x	1.54x	1.66x	1.75x
11	Average	0.79x	0.73x	0.77x	0.89x
12	Median	0.66x	0.65x	0.69x	0.89x

Sources:

The Value Line Investment Survey Investment Analyzer Software,
downloaded on June 17, 2021.

The Value Line Investment Survey, Feb 26, 2021.

Notes:

Based on the projected Cash Flow per share and Capital Spending per share.

PacifiCorp

Natural Gas Utilities
(Valuation Metrics)

		Percent Dividends to Book Value ¹																
Line	Company	16-Year																
		Average (1)	2021 ^{2a} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
1	Atmos Energy	5.10%	4.19%	4.26%	4.36%	4.53%	4.90%	5.04%	4.96%	4.81%	4.92%	5.28%	5.44%	5.55%	5.61%	5.75%	5.82%	6.25%
2	Chesapeake Utilities	5.21%	4.15%	4.23%	4.53%	4.39%	4.23%	4.35%	4.78%	5.18%	5.25%	5.39%	5.42%	5.49%	5.60%	6.71%	6.66%	6.95%
3	New Jersey Resources	7.19%	7.92%	6.60%	6.85%	6.87%	7.26%	7.21%	7.16%	7.45%	7.86%	7.86%	7.72%	7.48%	6.42%	6.54%	6.40%	
4	NiSource Inc.	5.59%	6.69%	6.64%	5.99%	5.96%	5.46%	5.08%	6.89%	5.22%	5.22%	5.25%	5.19%	5.22%	5.25%	5.34%	4.97%	5.02%
5	Northwest Nat. Gas	6.53%	5.66%	6.57%	6.69%	7.16%	7.27%	6.30%	6.53%	6.58%	6.59%	6.57%	6.55%	6.44%	6.43%	6.41%	6.39%	6.32%
6	ONE Gas Inc.	4.26%	5.04%	5.14%	4.96%	4.73%	4.48%	3.88%	3.41%	2.44%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	6.99%	7.53%	7.21%	7.53%	7.63%	7.34%	6.53%	6.98%	7.04%	7.12%	7.09%	7.26%	7.13%	6.69%	6.40%	6.22%	6.09%
8	Southwest Gas	4.42%	4.80%	4.87%	4.79%	4.90%	5.25%	5.14%	4.82%	4.57%	4.33%	4.16%	3.98%	3.90%	3.89%	3.83%	3.74%	3.80%
9	Spire Inc.	5.89%	5.56%	5.63%	5.25%	5.06%	5.09%	5.06%	5.07%	5.04%	5.31%	6.22%	6.30%	6.53%	6.56%	6.74%	7.33%	7.43%
10	UGI Corp.	5.62%	5.34%	6.65%	6.30%	4.82%	5.28%	5.65%	5.72%	5.14%	5.07%	5.35%	5.77%	5.41%	5.35%	5.72%	5.82%	6.54%
11	WGL Holdings Inc.	6.86%	N/A	N/A	N/A	N/A	6.88%	7.21%	7.33%	7.14%	6.73%	6.45%	6.60%	6.57%	6.72%	6.71%	6.88%	7.13%
12	Average	5.84%	5.69%	5.78%	5.72%	5.60%	5.77%	5.59%	5.78%	5.51%	5.82%	5.96%	6.02%	6.00%	5.96%	6.00%	6.04%	6.19%
13	Median	5.76%	5.45%	6.10%	5.62%	4.98%	5.28%	5.14%	5.72%	5.18%	5.28%	5.80%	6.03%	5.99%	6.02%	6.41%	6.30%	6.36%

		Dividends to Earnings Ratio ¹																
Line	Company	16-Year																
		Average (1)	2021 ^{2b} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
14	Atmos Energy	0.56	0.49	0.49	0.48	0.49	0.50	0.50	0.50	0.50	0.56	0.66	0.60	0.62	0.67	0.65	0.66	0.63
15	Chesapeake Utilities	0.48	0.39	0.40	0.42	0.40	0.47	0.42	0.42	0.43	0.45	0.48	0.48	0.48	0.58	0.58	0.61	0.67
16	New Jersey Resources	0.55	0.63	0.61	0.61	0.61	0.60	0.61	0.52	0.41	0.59	0.57	0.56	0.55	0.52	0.41	0.65	0.51
17	NiSource Inc.	0.83	0.65	0.64	0.61	0.60	1.79	0.64	1.32	0.61	0.62	0.69	0.88	0.87	1.10	0.69	0.81	0.81
18	Northwest Nat. Gas	0.64	0.77	0.83	0.87	0.81	- 0.97	0.88	0.95	0.86	0.82	0.81	0.73	0.62	0.57	0.59	0.52	0.59
19	ONE Gas Inc.	0.54	0.60	0.59	0.57	0.57	0.56	0.53	0.54	0.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	South Jersey Inds.	0.65	0.74	0.71	1.04	0.82	0.89	0.79	0.71	0.61	0.59	0.54	0.52	0.50	0.51	0.49	0.48	0.37
21	Southwest Gas	0.51	0.63	0.55	0.55	0.57	0.55	0.57	0.55	0.49	0.42	0.41	0.44	0.44	0.49	0.65	0.44	0.41
22	Spire Inc.	0.68	0.52	1.73	0.67	0.52	0.61	0.60	0.58	0.75	0.84	0.59	0.56	0.65	0.52	0.56	0.63	0.59
23	UGI Corp.	0.44	0.46	0.49	0.50	0.37	0.42	0.45	0.44	0.41	0.46	0.60	0.50	0.38	0.33	0.38	0.41	0.41
24	WGL Holdings Inc.	0.64	N/A	N/A	N/A	N/A	0.65	0.59	0.58	0.64	0.72	0.59	0.69	0.66	0.58	0.58	0.65	0.69
25	Average	0.59	0.59	0.70	0.63	0.55	0.55	0.60	0.65	0.56	0.61	0.59	0.59	0.58	0.59	0.56	0.59	0.57
26	Median	0.59	0.61	0.60	0.59	0.54	0.56	0.59	0.55	0.50	0.59	0.59	0.56	0.58	0.54	0.58	0.62	0.59

		Cash Flow to Capital Spending Ratio ¹																
Line	Company	16-Year																
		Average (1)	2021 ^{2c} (2)	2020 (3)	2019 (4)	2018 (5)	2017 (6)	2016 (7)	2015 (8)	2014 (9)	2013 (10)	2012 (11)	2011 (12)	2010 (13)	2009 (14)	2008 (15)	2007 (16)	2006 (17)
27	Atmos Energy	0.66	0.58	0.52	0.53	0.55	0.62	0.59	0.60	0.65	0.55	0.59	0.68	0.77	0.78	0.81	0.94	0.82
28	Chesapeake Utilities	0.73	0.81	0.78	0.62	0.39	0.50	0.50	0.53	0.71	0.65	0.79	1.12	1.10	1.14	0.83	0.82	0.45
29	New Jersey Resources	1.26	0.62	0.71	0.51	0.85	0.70	0.59	0.67	1.79	1.46	1.48	1.51	1.55	1.75	2.11	1.67	2.14
30	NiSource Inc.	0.76	0.68	0.66	0.61	0.58	0.41	0.59	0.53	0.56	0.57	0.65	0.75	1.11	1.06	0.94	1.11	1.37
31	Northwest Nat. Gas	0.94	0.68	0.66	0.69	0.71	0.14	1.01	1.12	1.15	0.98	1.01	1.33	0.55	1.02	1.35	1.21	1.34
32	ONE Gas Inc.	0.86	0.86	0.83	0.89	0.84	0.87	0.92	0.86	0.79	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
33	South Jersey Inds.	0.82	0.55	0.54	0.40	0.73	0.81	0.76	0.50	0.53	0.51	0.58	0.70	0.75	1.01	1.67	1.70	1.40
34	Southwest Gas	0.86	0.86	0.69	0.53	0.56	0.68	0.83	0.84	0.99	1.05	0.90	0.82	1.37	1.28	0.85	0.78	0.72
35	Spire Inc.	1.07	0.75	0.42	0.44	0.77	0.72	0.96	0.92	0.98	0.78	0.95	1.53	1.61	1.93	1.64	1.42	1.28
36	UGI Corp.	1.47	1.32	1.59	1.22	1.64	1.29	1.35	1.48	1.53	1.32	1.52	1.28	1.36	1.52	1.72	1.62	1.69
37	WGL Holdings Inc.	1.02	N/A	N/A	N/A	N/A	0.61	0.56	0.60	0.63	0.71	0.93	1.02	1.60	1.60	1.17	1.17	1.18
38	Average	0.96	0.77	0.74	0.64	0.76	0.67	0.79	0.79	0.94	0.86	0.94	1.07	1.18	1.31	1.35	1.24	1.24
39	Median	0.78	0.72	0.67	0.57	0.72	0.68	0.76	0.67	0.79	0.74	0.92	1.07	1.23	1.21	1.48	1.19	1.31

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 18, 2021.

² The Value Line Investment Survey, February 25, 2022

Notes:

^a Based on the projected Dividends Declared per share and Book Value per share, published in The Value Line Investment Survey.

^b Based on the projected Dividends Declared per share and Earnings per share, published in The Value Line Investment Survey.

^c Based on the projected Cash Flow per share and Capital Spending per share, published in The Value Line Investment Survey.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/104
PROXY GROUP**

PacifiCorp

Proxy Group

<u>Line</u>	<u>Company</u>	<u>Credit Ratings¹</u>		<u>Common Equity Ratios</u>	
		<u>S&P</u> (1)	<u>Moody's</u> (2)	<u>MI¹</u> (3)	<u>Value Line²</u> (4)
	<u>Company</u>				
1	ALLETE, Inc.	BBB	Baa1	49.7%	59.0%
2	Alliant Energy Corporation	A-	Baa2	43.5%	44.9%
3	Ameren Corporation	BBB+	Baa1	43.3%	44.3%
4	American Electric Power Company, Inc.	A-	Baa2	37.0%	41.5%
5	Avista Corporation	BBB	Baa2	46.0%	49.6%
6	CMS Energy Corporation	BBB+	Baa2	29.7%	28.6%
7	Duke Energy Corporation	BBB+	Baa2	40.5%	44.4%
8	Entergy Corporation	BBB+	Baa2	30.8%	33.7%
9	Evergy, Inc.	A-	Baa2	45.5%	48.7%
10	IDACORP, Inc.	BBB	Baa1	56.1%	56.1%
11	NextEra Energy, Inc.	A-	Baa1	39.0%	46.5%
12	NorthWestern Corporation	BBB	Baa2	46.1%	47.2%
13	Otter Tail Corporation	BBB	Baa2	50.2%	58.2%
14	Portland General Electric Company	BBB+	A3	43.6%	46.4%
15	The Southern Company	BBB+	Baa2	33.5%	38.1%
16	Xcel Energy Inc.	A-	Baa1	39.5%	42.6%
17	Average	BBB+	Baa2	42.1%	45.6%
18	PacifiCorp	A³	A3³		52.25%⁴

Sources:

¹ S&P Global Market Intelligence, Downloaded on June 7, 2022.

² *The Value Line Investment Survey*, January 21, February 11, and March 11, 2022.

³ Bulkley Direct at page 26.

⁴ Koblaha Direct at page 22.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

EXHIBIT AWEC-CUB/105

**CONSENSUS ANALYSTS'
GROWTH RATES**

PacifiCorp

Consensus Analysts' Growth Rates

<u>Line</u>	<u>Company</u>	<u>Zacks</u>		<u>MI</u>		<u>Yahoo! Finance</u>		<u>Average of Growth Rates</u>
		<u>Estimated Growth %¹</u>	<u>Number of Estimates</u>	<u>Estimated Growth %²</u>	<u>Number of Estimates</u>	<u>Estimated Growth %³</u>	<u>Number of Estimates</u>	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<u>Company</u>							
1	ALLETE, Inc.	N/A	N/A	5.67%	3	5.67%	N/A	5.67%
2	Alliant Energy Corporation	6.00%	N/A	6.13%	3	6.00%	N/A	6.04%
3	Ameren Corporation	7.20%	N/A	7.38%	5	7.40%	N/A	7.33%
4	American Electric Power Company, Inc.	5.80%	N/A	6.22%	6	6.10%	N/A	6.04%
5	Avista Corporation	6.60%	N/A	4.96%	3	5.90%	N/A	5.82%
6	CMS Energy Corporation	9.20%	N/A	8.30%	5	7.40%	N/A	8.30%
7	Duke Energy Corporation	6.10%	N/A	5.65%	6	5.95%	N/A	5.90%
8	Entergy Corporation	6.10%	N/A	3.67%	2	5.90%	N/A	5.22%
9	0 Evergy, Inc.	6.10%	N/A	6.72%	5	5.12%	N/A	5.98%
10	IDACORP, Inc.	4.40%	N/A	5.09%	4	4.40%	N/A	4.63%
11	NextEra Energy, Inc.	8.80%	N/A	9.01%	5	9.07%	N/A	8.96%
12	NorthWestern Corporation	2.70%	N/A	3.94%	5	4.50%	N/A	3.71%
13	Otter Tail Corporation	N/A	N/A	6.45%	2	9.00%	N/A	7.73%
14	Portland General Electric Company	4.60%	N/A	5.80%	4	4.60%	N/A	5.00%
15	The Southern Company	4.00%	N/A	5.53%	4	6.47%	N/A	5.33%
16	Xcel Energy Inc.	6.40%	N/A	6.18%	4	6.70%	N/A	6.43%
17	Average	6.00%	N/A	6.04%	4	6.26%	N/A	6.13%

Sources:

¹ Zacks, <http://www.zacks.com/>, downloaded on April 15, 2022.

² S&P Global Market Intelligence, <https://platform.mi.spglobal.com>, downloaded on April 15, 2022.

³ Yahoo! Finance, <https://finance.yahoo.com/>, downloaded on April 15, 2022.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/106
CONSTANT GROWTH DCF MODEL
(CONSENSUS ANALYSTS'
GROWTH RATES)**

PacifiCorp

Constant Growth DCF Model (Consensus Analysts' Growth Rates)

<u>Line</u>	<u>Company</u>	<u>13-Week AVG Stock Price¹</u> (1)	<u>Analysts' Growth²</u> (2)	<u>Annualized Dividend³</u> (3)	<u>Adjusted Yield</u> (4)	<u>Constant Growth DCF</u> (5)
	<u>Company</u>					
1	ALLETE, Inc.	\$63.77	5.67%	\$2.60	4.31%	9.98%
2	Alliant Energy Corporation	\$59.97	6.04%	\$1.71	3.02%	9.07%
3	Ameren Corporation	\$88.79	7.33%	\$2.36	2.85%	10.18%
4	American Electric Power Company, Inc.	\$93.30	6.04%	\$3.12	3.55%	9.59%
5	Avista Corporation	\$44.46	5.82%	\$1.69	4.02%	9.84%
6	CMS Energy Corporation	\$66.03	8.30%	\$1.84	3.02%	11.32%
7	Duke Energy Corporation	\$105.26	5.90%	\$3.94	3.96%	9.86%
8	Entergy Corporation	\$111.27	5.22%	\$4.04	3.82%	9.05%
9	Evergy, Inc.	\$65.05	5.98%	\$2.29	3.73%	9.71%
10	IDACORP, Inc.	\$109.60	4.63%	\$3.00	2.86%	7.49%
11	NextEra Energy, Inc.	\$80.00	8.96%	\$1.54	2.10%	11.06%
12	NorthWestern Corporation	\$59.05	3.71%	\$2.48	4.36%	8.07%
13	Otter Tail Corporation	\$62.17	7.73%	\$1.65	2.86%	10.58%
14	Portland General Electric Company	\$53.02	5.00%	\$1.72	3.41%	8.41%
15	The Southern Company	\$68.73	5.33%	\$2.64	4.05%	9.38%
16	Xcel Energy Inc.	\$69.48	6.43%	\$1.83	2.80%	9.23%
18	Average	\$75.00	6.13%	\$2.40	3.42%	9.55%
19	Median	\$67.38	5.94%	\$2.33	3.48%	9.65%

Sources:

¹ S&P Global Market Intelligence, Downloaded on June 7, 2022.

² Exhibit MPG-4.

³ *The Value Line Investment Survey*, January 21, February 11, and March 11, 2022.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/107
PAYOUT RATIOS**

PacifiCorp

Payout Ratios

Line	Company	Dividends Per Share		Earnings Per Share		Payout Ratio	
		2020 (1)	Projected (2)	2020 (3)	Projected (4)	2020 (5)	Projected (6)
	<u>Company</u>						
1	ALLETE, Inc.	\$2.47	\$3.00	\$3.35	\$4.75	73.73%	63.16%
2	Alliant Energy Corporation	\$1.52	\$2.15	\$2.47	\$3.25	61.54%	66.15%
3	Ameren Corporation	\$2.00	\$3.10	\$3.50	\$5.25	57.14%	59.05%
4	American Electric Power Company, Inc.	\$2.84	\$4.00	\$4.42	\$6.50	64.25%	61.54%
5	Avista Corporation	\$1.62	\$2.00	\$1.90	\$2.75	85.26%	72.73%
6	CMS Energy Corporation	\$1.63	\$2.30	\$2.64	\$3.75	61.74%	61.33%
7	Duke Energy Corporation	\$3.82	\$4.35	\$3.92	\$7.00	97.45%	62.14%
8	Entergy Corporation	\$3.74	\$5.10	\$6.90	\$8.00	54.20%	63.75%
9	Evergy, Inc.	\$2.05	\$3.05	\$2.72	\$4.75	75.37%	64.21%
10	IDACORP, Inc.	\$2.72	\$3.70	\$4.69	\$5.75	58.00%	64.35%
11	NextEra Energy, Inc.	\$1.40	\$2.45	\$2.10	\$4.00	66.67%	61.25%
12	NorthWestern Corporation	\$2.40	\$2.65	\$3.06	\$3.75	78.43%	70.67%
13	Otter Tail Corporation	\$1.48	\$2.10	\$2.34	\$3.75	63.25%	56.00%
14	Portland General Electric Company	\$1.59	\$2.10	\$1.72	\$3.25	92.44%	64.62%
15	The Southern Company	\$2.54	\$3.02	\$3.25	\$4.50	78.15%	67.11%
16	Xcel Energy Inc.	\$1.72	\$2.30	\$2.79	\$3.75	61.65%	61.33%
17	Average	\$1.98	\$2.62	\$2.85	\$4.11	71.23%	63.62%

Source:

The Value Line Investment Survey, January 21, February 11, and March 11, 2022.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/108
SUSTAINABLE GROWTH RATE**

PacifiCorp

Sustainable Growth Rate

Line	Company	3 to 5 Year Projections										Sustainable Growth Rate
		Dividends	Earnings	Book Value	Book Value	ROE	Adjustment	Adjusted	Payout	Retention	Internal	
		Per Share (1)	Per Share (2)	Per Share (3)	Growth (4)	(5)	Factor (6)	ROE (7)	Ratio (8)	Rate (9)	Growth Rate (10)	
	<u>Company</u>											
1	ALLETE, Inc.	\$3.00	\$4.75	\$53.25	3.22%	8.92%	1.02	9.06%	63.16%	36.84%	3.34%	4.15%
2	Alliant Energy Corporation	\$2.15	\$3.25	\$29.75	4.56%	10.92%	1.02	11.17%	66.15%	33.85%	3.78%	4.12%
3	Ameren Corporation	\$3.10	\$5.25	\$51.50	6.50%	10.19%	1.03	10.52%	59.05%	40.95%	4.31%	6.86%
4	American Electric Power Company, Inc.	\$4.00	\$6.50	\$58.75	6.02%	11.06%	1.03	11.39%	61.54%	38.46%	4.38%	6.34%
5	Avista Corporation	\$2.00	\$2.75	\$33.75	2.86%	8.15%	1.01	8.26%	72.73%	27.27%	2.25%	3.70%
6	CMS Energy Corporation	\$2.30	\$3.75	\$29.00	7.28%	12.93%	1.04	13.39%	61.33%	38.67%	5.18%	6.73%
7	Duke Energy Corporation	\$4.35	\$7.00	\$71.00	2.90%	9.86%	1.01	10.00%	62.14%	37.86%	3.79%	3.80%
8	Entergy Corporation	\$5.10	\$8.00	\$73.00	4.97%	10.96%	1.02	11.22%	63.75%	36.25%	4.07%	5.23%
9	Evergy, Inc.	\$3.05	\$4.75	\$47.75	3.65%	9.95%	1.02	10.13%	64.21%	35.79%	3.62%	3.78%
10	IDACORP, Inc.	\$3.70	\$5.75	\$61.25	3.84%	9.39%	1.02	9.56%	64.35%	35.65%	3.41%	3.41%
11	NextEra Energy, Inc.	\$2.45	\$4.00	\$27.50	6.71%	14.55%	1.03	15.02%	61.25%	38.75%	5.82%	7.62%
12	NorthWestern Corporation	\$2.65	\$3.75	\$48.00	3.15%	7.81%	1.02	7.93%	70.67%	29.33%	2.33%	4.14%
13	Otter Tail Corporation	\$2.10	\$3.75	\$31.50	6.99%	11.90%	1.03	12.31%	56.00%	44.00%	5.42%	5.83%
14	Portland General Electric Company	\$2.10	\$3.25	\$34.75	3.56%	9.35%	1.02	9.52%	64.62%	35.38%	3.37%	3.45%
15	The Southern Company	\$3.02	\$4.50	\$32.75	3.61%	13.74%	1.02	13.98%	67.11%	32.89%	4.60%	4.94%
16	Xcel Energy Inc.	\$2.30	\$3.75	\$34.50	4.93%	10.87%	1.02	11.13%	61.33%	38.67%	4.30%	5.20%
17	Average	\$2.96	\$4.67	\$44.88	4.67%	10.66%	1.02	10.91%	63.71%	36.29%	4.00%	4.96%

Sources and Notes:

Cols. (1), (2) and (3): *The Value Line Investment Survey*, January 21, February 11, and March 11, 2022.

Col. (4): [Col. (3) / Page 2 Col. (2)] ^ (1/number of years projected) - 1.

Col. (5): Col. (2) / Col. (3).

Col. (6): [2 * (1 + Col. (4))] / (2 + Col. (4)).

Col. (7): Col. (6) * Col. (5).

Col. (8): Col. (1) / Col. (2).

Col. (9): 1 - Col. (8).

Col. (10): Col. (9) * Col. (7).

Col. (11): Col. (10) + Page 2 Col. (9).

PacifiCorp

Sustainable Growth Rate

Line	Company	13-Week	2020	Market	Common Shares		Growth	S Factor ³	V Factor ⁴	S * V
		Average	Book Value	to Book	Outstanding (in Millions) ²					
		Stock Price ¹	Per Share ²	Ratio	2020	3-5 Years	(6)	(7)	(8)	(9)
		(1)	(2)	(3)	(4)	(5)				
	Company									
1	ALLETE, Inc.	\$63.77	\$44.04	1.45	52.10	58.00	1.80%	2.61%	30.94%	0.81%
2	Alliant Energy Corporation	\$59.97	\$22.76	2.64	249.87	253.00	0.21%	0.55%	62.05%	0.34%
3	Ameren Corporation	\$88.79	\$35.29	2.52	253.30	280.00	1.68%	4.24%	60.26%	2.55%
4	American Electric Power Company, Inc.	\$93.30	\$41.38	2.25	496.60	545.00	1.56%	3.52%	55.65%	1.96%
5	Avista Corporation	\$44.46	\$29.31	1.52	69.24	79.50	2.80%	4.25%	34.08%	1.45%
	CMS Energy Corporation	\$66.03	\$19.02	3.47	288.94	300.00	0.63%	2.18%	71.19%	1.55%
7	Duke Energy Corporation	\$105.26	\$59.82	1.76	769.00	770.00	0.02%	0.04%	43.17%	0.02%
	Entergy Corporation	\$111.27	\$54.56	2.04	200.24	214.00	1.11%	2.27%	50.96%	1.16%
	Evergy, Inc.	\$65.05	\$38.50	1.69	226.84	230.00	0.23%	0.39%	40.82%	0.16%
10	IDACORP, Inc.	\$109.60	\$50.73	2.16	50.46	50.45	- 0.00%	- 0.01%	53.71%	- 0.00%
11	NextEra Energy, Inc.	\$80.00	\$18.63	4.29	1,960.00	2,025.00	0.55%	2.34%	76.71%	1.80%
12	NorthWestern Corporation	\$59.05	\$41.10	1.44	50.59	62.00	4.15%	5.96%	30.40%	1.81%
13	Otter Tail Corporation	\$62.17	\$21.00	2.96	41.47	42.00	0.21%	0.63%	66.22%	0.42%
14	Portland General Electric Company	\$53.02	\$29.18	1.82	89.54	90.00	0.10%	0.19%	44.97%	0.08%
15	The Southern Company	\$68.73	\$26.48	2.60	1,056.50	1,070.00	0.21%	0.55%	61.47%	0.34%
16	Xcel Energy Inc.	\$69.48	\$27.12	2.56	537.44	553.00	0.57%	1.47%	60.97%	0.89%
17	Average	\$75.00	\$34.93	2.32	399.51	413.87	0.99%	1.95%	52.72%	0.96%

Sources and Notes:

¹ S&P Global Market Intelligence, Downloaded on June 7, 2022.

² *The Value Line Investment Survey*, January 21, February 11, and March 11, 2022.

³ Expected Growth in the Number of Shares, Column (3) * Column (6).

⁴ Expected Profit of Stock Investment, [1 - 1 / Column (3)].

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/109
CONSTANT GROWTH DCF MODEL
(SUSTAINABLE GROWTH RATE)**

PacifiCorp

Constant Growth DCF Model (Sustainable Growth Rate)

<u>Line</u>	<u>Company</u>	<u>13-Week AVG Stock Price¹</u> (1)	<u>Sustainable Growth²</u> (2)	<u>Annualized Dividend³</u> (3)	<u>Adjusted Yield</u> (4)	<u>Constant Growth DCF</u> (5)
	<u>Company</u>					
1	ALLETE, Inc.	\$63.77	4.15%	\$2.60	4.25%	8.39%
2	Alliant Energy Corporation	\$59.97	4.12%	\$1.71	2.97%	7.09%
3	Ameren Corporation	\$88.79	6.86%	\$2.36	2.84%	9.70%
4	American Electric Power Company, Inc.	\$93.30	6.34%	\$3.12	3.56%	9.90%
5	Avista Corporation	\$44.46	3.70%	\$1.69	3.94%	7.64%
6	CMS Energy Corporation	\$66.03	6.73%	\$1.84	2.97%	9.70%
7	Duke Energy Corporation	\$105.26	3.80%	\$3.94	3.89%	7.69%
8	Entergy Corporation	\$111.27	5.23%	\$4.04	3.82%	9.05%
9	Evergy, Inc.	\$65.05	3.78%	\$2.29	3.65%	7.44%
10	IDACORP, Inc.	\$109.60	3.41%	\$3.00	2.83%	6.24%
11	NextEra Energy, Inc.	\$80.00	7.62%	\$1.54	2.07%	9.69%
12	NorthWestern Corporation	\$59.05	4.14%	\$2.48	4.37%	8.51%
13	Otter Tail Corporation	\$62.17	5.83%	\$1.65	2.81%	8.64%
14	Portland General Electric Company	\$53.02	3.45%	\$1.72	3.36%	6.81%
15	The Southern Company	\$68.73	4.94%	\$2.64	4.03%	8.97%
16	Xcel Energy Inc.	\$69.48	5.20%	\$1.83	2.77%	7.97%
17	Average	\$75.00	4.96%	\$2.40	3.38%	8.34%
18	Median	\$67.38	4.54%	\$2.33	3.46%	8.45%

Sources:

¹ S&P Global Market Intelligence, Downloaded on June 7, 2022.

² Exhibit MPG-7

³ *The Value Line Investment Survey*, January 21, February 11, and March 11, 2022.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

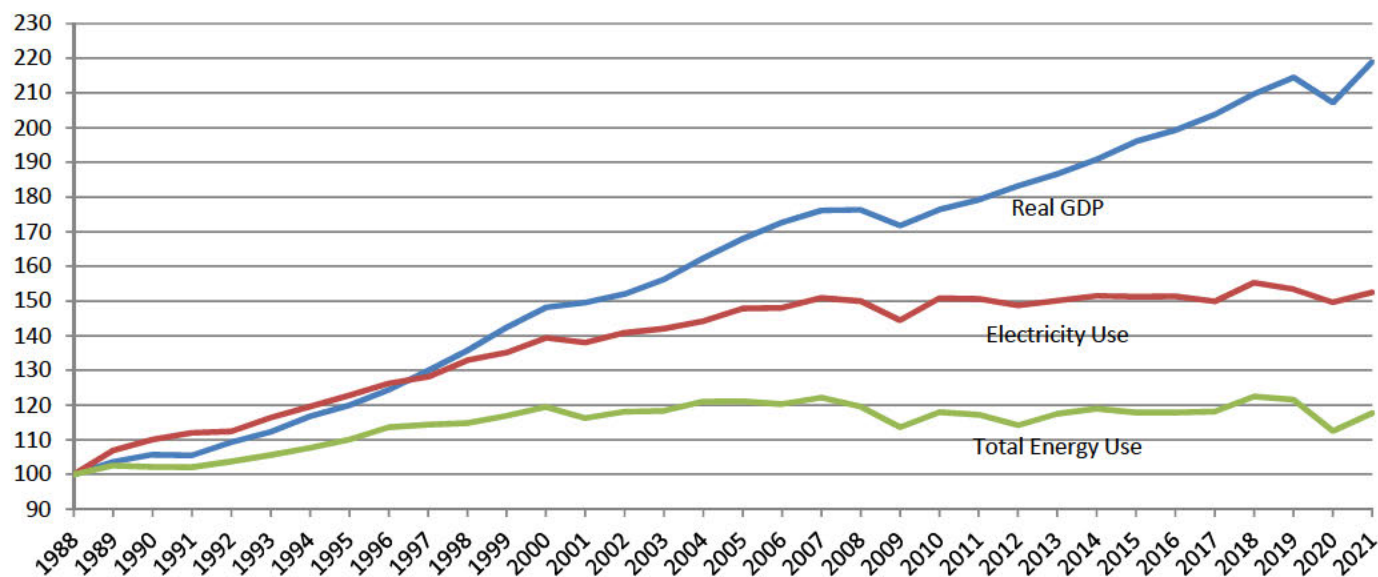
Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

EXHIBIT AWEC-CUB/110

**ELECTRICITY SALES ARE LINKED
TO U.S. ECONOMIC GROWTH**

PacifiCorp

Electricity Sales Are Linked to U.S. Economic Growth



Note:

1988 represents the base year. Graph depicts increases or decreases from the base year.

Sources:

U.S. Energy Information Administration
Federal Reserve Bank of St. Louis

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

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Mountain, (UM 2167),

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Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

EXHIBIT AWEC-CUB/111

**MULTI-STAGE GROWTH
DCF MODEL**

PacifiCorp

Multi-Stage Growth DCF Model

Line	Company	13-Week AVG	Annualized	First Stage	Second Stage Growth					Third Stage	Multi-Stage
		Stock Price ¹	Dividend ²	Growth ³	Year 6	Year 7	Year 8	Year 9	Year 10	Growth ⁴	Growth DCF
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Company										
1	ALLETE, Inc.	\$63.77	\$2.60	5.67%	5.41%	5.15%	4.88%	4.62%	4.36%	4.10%	8.78%
2	Alliant Energy Corporation	\$59.97	\$1.71	6.04%	5.72%	5.40%	5.07%	4.75%	4.42%	4.10%	7.46%
3	Ameren Corporation	\$88.79	\$2.36	7.33%	6.79%	6.25%	5.71%	5.18%	4.64%	4.10%	7.50%
4	American Electric Power Company, Inc.	\$93.30	\$3.12	6.04%	5.72%	5.39%	5.07%	4.75%	4.42%	4.10%	8.03%
5	Avista Corporation	\$44.46	\$1.69	5.82%	5.53%	5.25%	4.96%	4.67%	4.39%	4.10%	8.51%
6	CMS Energy Corporation	\$66.03	\$1.84	8.30%	7.60%	6.90%	6.20%	5.50%	4.80%	4.10%	7.88%
7	Duke Energy Corporation	\$105.26	\$3.94	5.90%	5.60%	5.30%	5.00%	4.70%	4.40%	4.10%	8.46%
8	Entergy Corporation	\$111.27	\$4.04	5.22%	5.04%	4.85%	4.66%	4.47%	4.29%	4.10%	8.16%
9	Evergy, Inc.	\$65.05	\$2.29	5.98%	5.67%	5.35%	5.04%	4.73%	4.41%	4.10%	8.22%
10	IDACORP, Inc.	\$109.60	\$3.00	4.63%	4.54%	4.45%	4.36%	4.28%	4.19%	4.10%	7.04%
11	NextEra Energy, Inc.	\$80.00	\$1.54	8.96%	8.15%	7.34%	6.53%	5.72%	4.91%	4.10%	6.84%
12	NorthWestern Corporation	\$59.05	\$2.48	3.71%	3.78%	3.84%	3.91%	3.97%	4.04%	4.10%	8.37%
13	Otter Tail Corporation	\$62.17	\$1.65	7.73%	7.12%	6.52%	5.91%	5.31%	4.70%	4.10%	7.58%
14	Portland General Electric Company	\$53.02	\$1.72	5.00%	4.85%	4.70%	4.55%	4.40%	4.25%	4.10%	7.67%
15	The Southern Company	\$68.73	\$2.64	5.33%	5.13%	4.92%	4.72%	4.51%	4.31%	4.10%	8.42%
16	Xcel Energy Inc.	\$69.48	\$1.83	6.43%	6.04%	5.65%	5.26%	4.88%	4.49%	4.10%	7.28%
17	Average	\$75.00	\$2.40	6.13%	5.79%	5.45%	5.12%	4.78%	4.44%	4.10%	7.89%
18	Median	\$67.38	\$2.33	5.94%	5.63%	5.33%	5.02%	4.71%	4.41%	4.10%	7.96%

Sources:

¹ S&P Global Market Intelligence, Downloaded on June 7, 2022.

² *The Value Line Investment Survey*, January 21, February 11, and March 11, 2022.

³ Attachment MPG-8.

⁴ *Blue Chip Economic Indicators*, March 1, 2021, at 14.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

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Application to Defer Costs Relating to Cedar
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Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

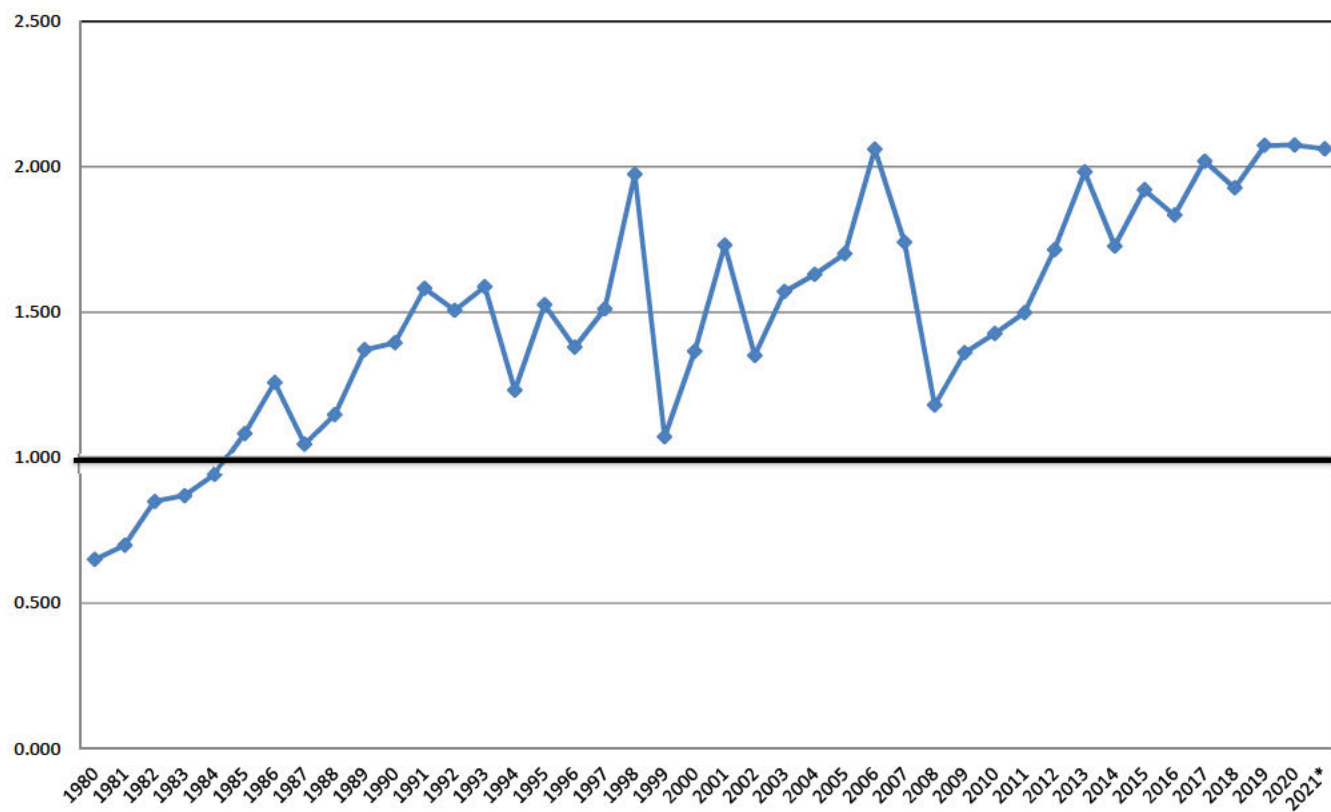
Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

EXHIBIT AWEC-CUB/112

**COMMON STOCK
MARKET/BOOK RATIO**

PacifiCorp

Common Stock Market/Book Ratio



Source:

1980 - 2000: Mergent Public Utility Manual.

2001 - 2015: AUS Utility Reports, multiple dates.

2016 - 2020: Value Line Investment Survey, multiple dates.

* Value Line Investment Survey Reports, January 21, February 11, February 25, and March 11, 2022.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

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Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

EXHIBIT AWEC-CUB/113

**EQUITY RISK PREMIUM –
TREASURY BOND**

PacifiCorp

Equity Risk Premium - Treasury Bond

<u>Line</u>	<u>Year</u>	<u>Authorized Electric Returns¹</u> (1)	<u>30 yr. Treasury Bond Yield²</u> (2)	<u>Indicated Risk Premium</u> (3)	<u>Rolling 5 - Year Average</u> (4)	<u>Rolling 10 - Year Average</u> (5)
1	1986	13.93%	7.80%	6.13%		
2	1987	12.99%	8.58%	4.41%		
3	1988	12.79%	8.96%	3.83%		
4	1989	12.97%	8.45%	4.52%		
5	1990	12.70%	8.61%	4.09%	4.60%	
6	1991	12.55%	8.14%	4.41%	4.25%	
7	1992	12.09%	7.67%	4.42%	4.26%	
8	1993	11.41%	6.60%	4.81%	4.45%	
9	1994	11.34%	7.37%	3.97%	4.34%	
10	1995	11.55%	6.88%	4.67%	4.46%	4.53%
11	1996	11.39%	6.70%	4.69%	4.51%	4.38%
12	1997	11.40%	6.61%	4.79%	4.59%	4.42%
13	1998	11.66%	5.58%	6.08%	4.84%	4.65%
14	1999	10.77%	5.87%	4.90%	5.03%	4.68%
15	2000	11.43%	5.94%	5.49%	5.19%	4.82%
16	2001	11.09%	5.49%	5.60%	5.37%	4.94%
17	2002	11.16%	5.43%	5.73%	5.56%	5.07%
18	2003	10.97%	4.96%	6.01%	5.55%	5.19%
19	2004	10.75%	5.05%	5.70%	5.71%	5.37%
20	2005	10.54%	4.65%	5.89%	5.79%	5.49%
21	2006	10.34%	4.87%	5.47%	5.76%	5.57%
22	2007	10.31%	4.83%	5.48%	5.71%	5.64%
23	2008	10.37%	4.28%	6.09%	5.73%	5.64%
24	2009	10.52%	4.07%	6.45%	5.88%	5.79%
25	2010	10.29%	4.25%	6.04%	5.90%	5.85%
26	2011	10.19%	3.91%	6.28%	6.07%	5.91%
27	2012	10.01%	2.92%	7.09%	6.39%	6.05%
28	2013	9.81%	3.45%	6.36%	6.44%	6.09%
29	2014	9.75%	3.34%	6.41%	6.44%	6.16%
30	2015	9.60%	2.84%	6.76%	6.58%	6.24%
31	2016	9.60%	2.60%	7.00%	6.72%	6.40%
32	2017	9.68%	2.90%	6.79%	6.66%	6.53%
33	2018	9.55%	3.11%	6.44%	6.68%	6.56%
34	2019	9.64%	2.58%	7.06%	6.81%	6.62%
35	2020	9.39%	1.56%	7.83%	7.02%	6.80%
36	2021 ³	9.39%	2.05%	7.34%	7.09%	6.91%
37	Average	10.94%	5.25%	5.70%	5.64%	5.64%
38	Minimum				4.25%	4.38%
39	Maximum				7.09%	6.91%

Sources:

¹ Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3. S&P Global Market Intelligence, RRA Regulatory Focus, Major Rate Case Decisions, January - December 2021, February 10, 2022, p. 1.

2006 - 2021 Authorized Returns exclude limited issue rider cases.

² St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>.

The yields from 2002 to 2005 represent the 20-Year Treasury yields obtained from the Federal Reserve Bank.

³ Data represents January - December, 2021.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/114
EQUITY RISK PREMIUM –
UTILITY BOND**

PacifiCorp

Equity Risk Premium - Utility Bond

<u>Line</u>	<u>Year</u>	<u>Authorized Electric Returns¹</u> (1)	<u>Average "A" Rated Utility Bond Yield²</u> (2)	<u>Indicated Risk Premium</u> (3)	<u>Rolling 5 - Year Average</u> (4)	<u>Rolling 10 - Year Average</u> (5)
1	1986	13.93%	9.58%	4.35%		
2	1987	12.99%	10.10%	2.89%		
3	1988	12.79%	10.49%	2.30%		
4	1989	12.97%	9.77%	3.20%		
5	1990	12.70%	9.86%	2.84%	3.12%	
6	1991	12.55%	9.36%	3.19%	2.88%	
7	1992	12.09%	8.69%	3.40%	2.99%	
8	1993	11.41%	7.59%	3.82%	3.29%	
9	1994	11.34%	8.31%	3.03%	3.26%	
10	1995	11.55%	7.89%	3.66%	3.42%	3.27%
11	1996	11.39%	7.75%	3.64%	3.51%	3.20%
12	1997	11.40%	7.60%	3.80%	3.59%	3.29%
13	1998	11.66%	7.04%	4.62%	3.75%	3.52%
14	1999	10.77%	7.62%	3.15%	3.77%	3.52%
15	2000	11.43%	8.24%	3.19%	3.68%	3.55%
16	2001	11.09%	7.76%	3.33%	3.62%	3.56%
17	2002	11.16%	7.37%	3.79%	3.61%	3.60%
18	2003	10.97%	6.58%	4.39%	3.57%	3.66%
19	2004	10.75%	6.16%	4.59%	3.86%	3.82%
20	2005	10.54%	5.65%	4.89%	4.20%	3.94%
21	2006	10.34%	6.07%	4.27%	4.39%	4.00%
22	2007	10.31%	6.07%	4.24%	4.48%	4.04%
23	2008	10.37%	6.53%	3.84%	4.37%	3.97%
24	2009	10.52%	6.04%	4.48%	4.34%	4.10%
25	2010	10.29%	5.47%	4.82%	4.33%	4.26%
26	2011	10.19%	5.04%	5.15%	4.51%	4.45%
27	2012	10.01%	4.13%	5.88%	4.83%	4.66%
28	2013	9.81%	4.48%	5.33%	5.13%	4.75%
29	2014	9.75%	4.28%	5.47%	5.33%	4.84%
30	2015	9.60%	4.12%	5.48%	5.46%	4.90%
31	2016	9.60%	3.93%	5.67%	5.57%	5.04%
32	2017	9.68%	4.00%	5.68%	5.53%	5.18%
33	2018	9.55%	4.25%	5.30%	5.52%	5.33%
34	2019	9.64%	3.77%	5.87%	5.60%	5.47%
35	2020	9.39%	3.05%	6.34%	5.77%	5.62%
36	2021 ³	9.39%	3.10%	6.29%	5.90%	5.73%
37	Average	10.94%	6.60%	4.34%	4.29%	4.27%
38	Minimum				2.88%	3.20%
39	Maximum				5.90%	5.73%

Sources:

¹ Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3.
S&P Global Market Intelligence, RRA Regulatory Focus, Major Rate Case Decisions, January - December 2021,
February 10, 2022, p. 1.

2006 - 2021 Authorized Returns exclude limited issue rider cases.

² St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>.

The yields from 2002 to 2005 represent the 20-Year Treasury yields obtained from the Federal Reserve Bank.

³ Data represents January - December, 2021.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

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Accounting for Revenues Associated with
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Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

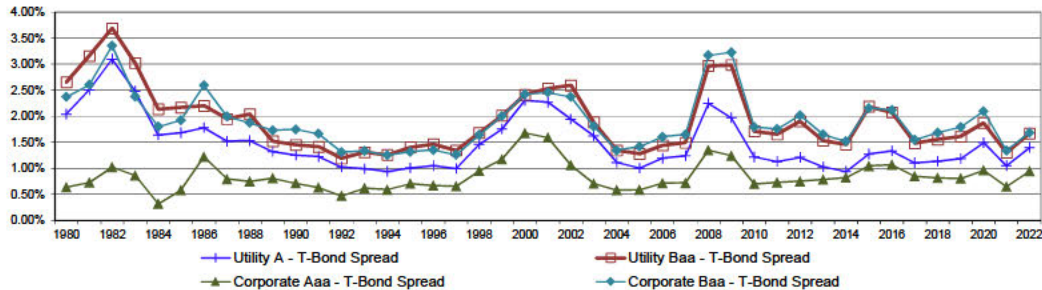
**EXHIBIT AWEC-CUB/115
BOND YIELD SPREADS**

PacifiCorp

Bond Yield Spreads

Line	Year	Public Utility Bond					Corporate Bond				Utility to Corporate	
		T-Bond Yield ¹ (1)	A ² (2)	Baa ² (3)	A-T-Bond Spread (4)	Baa-T-Bond Spread (5)	Aaa ³ (6)	Baa ³ (7)	Aaa-T-Bond Spread (8)	Baa-T-Bond Spread (9)	Baa Spread (10)	A-Aaa Spread (11)
1	1980	11.30%	13.34%	13.95%	2.04%	2.65%	11.94%	13.67%	0.64%	2.37%	0.28%	1.40%
2	1981	13.44%	15.95%	16.60%	2.51%	3.16%	14.17%	16.04%	0.73%	2.60%	0.56%	1.78%
3	1982	12.76%	15.86%	16.45%	3.10%	3.69%	13.79%	16.11%	1.03%	3.35%	0.34%	2.07%
4	1983	11.18%	13.66%	14.20%	2.48%	3.02%	12.04%	13.55%	0.86%	2.38%	0.65%	1.62%
5	1984	12.39%	14.03%	14.53%	1.64%	2.14%	12.71%	14.19%	0.32%	1.80%	0.34%	1.32%
6	1985	10.79%	12.47%	12.96%	1.68%	2.17%	11.37%	12.72%	0.58%	1.93%	0.24%	1.10%
7	1986	7.80%	9.58%	10.00%	1.78%	2.20%	9.02%	10.39%	1.22%	2.59%	-0.39%	0.56%
8	1987	8.58%	10.10%	10.53%	1.52%	1.95%	9.38%	10.58%	0.80%	2.00%	-0.05%	0.72%
9	1988	8.96%	10.49%	11.00%	1.53%	2.04%	9.71%	10.83%	0.75%	1.87%	0.17%	0.78%
10	1989	8.45%	9.77%	9.97%	1.32%	1.52%	9.26%	10.18%	0.81%	1.73%	-0.21%	0.51%
11	1990	8.61%	9.86%	10.06%	1.25%	1.45%	9.32%	10.36%	0.71%	1.75%	-0.30%	0.54%
12	1991	8.14%	9.36%	9.55%	1.22%	1.41%	8.77%	9.80%	0.63%	1.67%	-0.25%	0.59%
13	1992	7.67%	8.69%	8.86%	1.02%	1.19%	8.14%	8.98%	0.47%	1.31%	-0.12%	0.55%
14	1993	6.60%	7.59%	7.91%	0.99%	1.31%	7.22%	7.93%	0.62%	1.33%	-0.02%	0.37%
15	1994	7.37%	8.31%	8.63%	0.94%	1.26%	7.96%	8.62%	0.59%	1.25%	0.01%	0.35%
16	1995	6.88%	7.89%	8.29%	1.01%	1.41%	7.59%	8.20%	0.71%	1.32%	0.09%	0.30%
17	1996	6.70%	7.75%	8.17%	1.05%	1.47%	7.37%	8.05%	0.67%	1.35%	0.12%	0.38%
18	1997	6.61%	7.60%	7.95%	0.99%	1.34%	7.26%	7.86%	0.66%	1.26%	0.09%	0.34%
19	1998	5.58%	7.04%	7.26%	1.46%	1.68%	6.53%	7.22%	0.95%	1.64%	0.04%	0.51%
20	1999	5.87%	7.62%	7.88%	1.75%	2.01%	7.04%	7.87%	1.18%	2.01%	0.01%	0.58%
21	2000	5.94%	8.24%	8.36%	2.30%	2.42%	7.62%	8.36%	1.68%	2.42%	-0.01%	0.62%
22	2001	5.49%	7.76%	8.03%	2.27%	2.54%	7.08%	7.95%	1.59%	2.45%	0.08%	0.68%
23	2002	5.43%	7.37%	8.02%	1.94%	2.59%	6.49%	7.80%	1.06%	2.37%	0.22%	0.88%
24	2003	4.96%	6.58%	6.84%	1.62%	1.89%	5.67%	6.77%	0.71%	1.81%	0.08%	0.91%
25	2004	5.05%	6.16%	6.40%	1.11%	1.35%	5.63%	6.39%	0.58%	1.35%	0.00%	0.53%
26	2005	4.65%	5.65%	5.93%	1.00%	1.28%	5.24%	6.06%	0.59%	1.42%	-0.14%	0.41%
27	2006	4.87%	6.07%	6.32%	1.20%	1.44%	5.59%	6.48%	0.71%	1.61%	-0.16%	0.48%
28	2007	4.83%	6.07%	6.33%	1.24%	1.50%	5.56%	6.48%	0.72%	1.65%	-0.15%	0.52%
29	2008	4.28%	6.53%	7.25%	2.25%	2.97%	5.63%	7.45%	1.35%	3.17%	-0.20%	0.90%
30	2009	4.07%	6.04%	7.06%	1.97%	2.99%	5.31%	7.30%	1.24%	3.23%	-0.24%	0.73%
31	2010	4.25%	5.47%	5.96%	1.22%	1.71%	4.95%	6.04%	0.70%	1.79%	-0.08%	0.52%
32	2011	3.91%	5.04%	5.57%	1.13%	1.66%	4.64%	5.67%	0.73%	1.76%	-0.10%	0.40%
33	2012	2.92%	4.13%	4.83%	1.21%	1.90%	3.67%	4.94%	0.75%	2.02%	-0.11%	0.46%
34	2013	3.45%	4.48%	4.98%	1.03%	1.53%	4.24%	5.10%	0.79%	1.65%	-0.12%	0.24%
35	2014	3.34%	4.28%	4.80%	0.94%	1.46%	4.16%	4.86%	0.82%	1.52%	-0.06%	0.12%
36	2015	2.84%	4.12%	5.03%	1.27%	2.19%	3.89%	5.00%	1.05%	2.16%	0.03%	0.23%
37	2016	2.60%	3.93%	4.67%	1.33%	2.08%	3.66%	4.71%	1.07%	2.12%	-0.04%	0.27%
38	2017	2.90%	4.00%	4.38%	1.10%	1.48%	3.74%	4.44%	0.85%	1.55%	-0.06%	0.26%
39	2018	3.11%	4.25%	4.67%	1.14%	1.56%	3.93%	4.80%	0.82%	1.69%	-0.13%	0.32%
40	2019	2.58%	3.77%	4.19%	1.18%	1.61%	3.39%	4.38%	0.81%	1.79%	-0.18%	0.38%
41	2020	1.56%	3.05%	3.44%	1.49%	1.87%	2.53%	3.66%	0.96%	2.10%	-0.22%	0.53%
42	2021	2.05%	3.10%	3.36%	1.05%	1.30%	2.70%	3.39%	0.65%	1.34%	-0.04%	0.40%
43	2022 ⁴	2.25%	3.65%	3.92%	1.40%	1.67%	3.20%	3.94%	0.95%	1.68%	-0.02%	0.45%
44	Average	6.12%	7.60%	8.02%	1.48%	1.91%	6.96%	8.03%	0.84%	1.91%	0.00%	0.64%

Yield Spreads
Treasury Vs. Corporate & Treasury Vs. Utility



Sources:

¹ St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>.

² The utility yields for the period 1980-2000 were obtained from Mergent Public Utility Manual, Mergent Weekly News Reports, 2003.

The utility yields for the period 2001-2009 were obtained from the Mergent Bond Record.

The utility yields for the period 2010-2021 were obtained from <http://credittrends.moodys.com/>.

³ The corporate yields for the period 1980-2009 were obtained from the St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>.

The corporate yields from 2010-2021 were obtained from <http://credittrends.moodys.com/>.

⁴ Data represents January - March, 2022.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

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Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/116
TREASURY AND UTILITY
BOND YIELDS**

PacifiCorp

Treasury and Utility Bond Yields

<u>Line</u>	<u>Date</u>	<u>Treasury Bond Yield¹</u> (1)	<u>"A" Rated Utility Bond Yield²</u> (2)	<u>"Baa" Rated Utility Bond Yield²</u> (3)
1	04/14/22	2.92%	4.40%	4.71%
2	04/08/22	2.76%	4.13%	4.40%
3	04/01/22	2.44%	3.92%	4.18%
4	03/25/22	2.60%	4.14%	4.43%
5	03/18/22	2.42%	3.95%	4.26%
6	03/11/22	2.36%	4.02%	4.32%
7	03/04/22	2.16%	3.74%	4.03%
8	02/25/22	2.29%	3.86%	4.16%
9	02/18/22	2.24%	3.74%	4.02%
10	02/11/22	2.24%	3.63%	3.89%
11	02/04/22	2.23%	3.55%	3.83%
12	01/28/22	2.07%	3.41%	3.65%
13	01/21/22	2.07%	3.34%	3.58%
14	Average	2.37%	3.83%	4.11%
15	Spread To Treasury		1.46%	1.74%

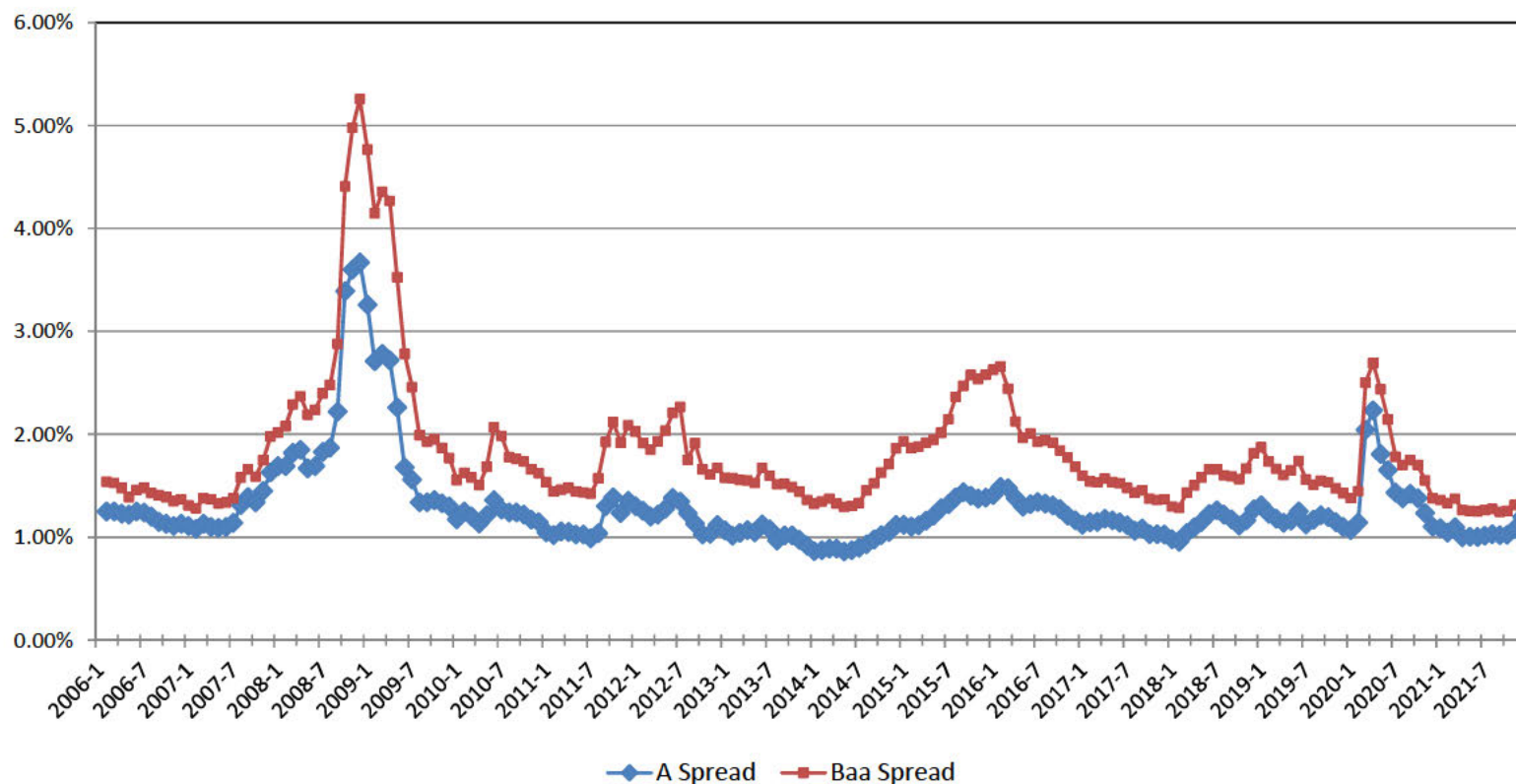
Sources:

¹ St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org>.

² <http://credittrends.moodys.com/>.

PacifiCorp

Yield Spread Between Utility Bonds and 30-Year Treasury Bonds



Sources:

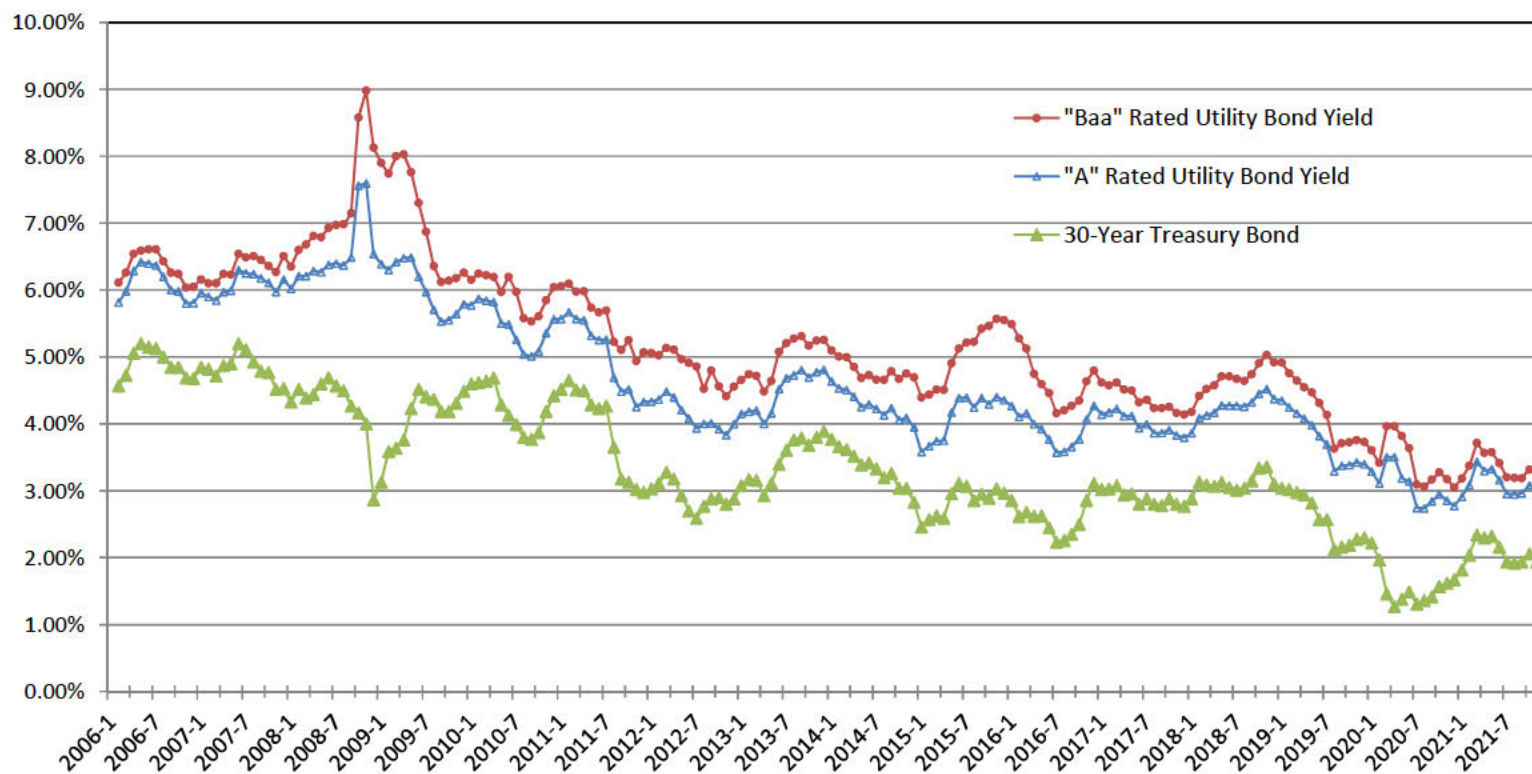
Mergent Bond Record.

www.moody.com, Bond Yields and Key Indicators.

St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>

PacifiCorp

Trends in Bond Yields



Sources:

Mergent Bond Record.

www.moody's.com, Bond Yields and Key Indicators.

St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>

**BEFORE THE PUBLIC UTILITY COMMISSION
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(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/117
VALUE LINE BETA**

PacifiCorp

Value Line Beta

<u>Line</u>	<u>Company</u>	<u>Beta</u>
	<u>Company</u>	
1	ALLETE, Inc.	0.90
2	Alliant Energy Corporation	0.85
3	Ameren Corporation	0.80
4	American Electric Power Company, Inc.	0.75
5	Avista Corporation	0.95
6	CMS Energy Corporation	0.80
7	Duke Energy Corporation	0.85
8	Entergy Corporation	0.95
9	Evergy, Inc.	0.95
10	IDACORP, Inc.	0.80
11	NextEra Energy, Inc.	0.95
12	NorthWestern Corporation	0.95
13	Otter Tail Corporation	0.85
14	Portland General Electric Company	0.90
15	The Southern Company	0.95
17	Average	0.88

Source:
The Value Line Investment Survey,
January 21, February 11, and March 11, 2022.

PacifiCorp

Value Line
Historical Betas

Line	Company	Average	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17	4Q16	3Q16	2Q16	1Q16	4Q15	3Q15	2Q15	1Q15	4Q14	3Q14		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)		
1	Company																																		
1	ALLETE, Inc.	0.79	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.60	N/A	N/A	0.65	0.65	0.65	0.70	0.75	0.75	0.80	0.75	0.80	0.80	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
2	Alliant Energy Corporation	0.74	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.55	0.60	0.60	0.60	0.65	0.60	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
3	Ameren Corporation	0.70	0.80	0.80	0.85	0.80	0.80	0.85	0.80	0.80	0.50	0.55	0.55	0.60	0.60	0.55	0.60	0.65	0.65	0.70	0.65	0.65	0.70	0.65	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
4	American Electric Power Company, Inc.	0.67	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.50	0.55	0.55	0.55	0.55	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
5	Avista Corporation	0.76	0.95	0.95	0.95	0.95	0.95	0.90	0.95	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.70	0.70	0.75	0.75	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.75
6	CMS Energy Corporation	0.68	0.80	0.80	0.80	0.80	0.75	0.80	0.80	0.80	0.50	0.50	0.55	0.55	0.55	0.55	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.75	0.75	0.70	0.75	0.75	0.70	0.75	0.70
7	Duke Energy Corporation	0.65	0.85	0.85	0.90	0.85	0.85	0.85	0.85	0.85	0.45	N/A	N/A	0.50	0.50	0.55	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
8	Entergy Corporation	0.73	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
9	Eversource Energy	0.98	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.05	NMF	NMF	NMF	NMF	NMF	NMF	NMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	IDCORP, Inc.	0.73	0.80	0.85	0.85	0.80	0.80	0.80	0.80	0.50	0.55	0.55	0.60	0.60	0.55	0.60	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
11	NextEra Energy, Inc.	0.71	0.95	0.90	0.95	0.90	0.90	0.90	0.85	0.85	0.50	0.55	0.55	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.75	0.70	0.75	0.70	0.70	
12	NorthWestern Corporation	0.72	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.55	0.60	0.60	0.60	0.60	0.55	0.60	0.65	0.65	0.70	0.70	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
13	One Tail Corporation	0.84	0.85	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.70	0.70	0.65	0.70	0.70	0.75	0.80	0.85	0.85	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.95
14	Portland General Electric Company	0.74	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.55	0.55	0.60	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.75
15	The Southern Company	0.65	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.50	0.50	0.50	0.50	0.50	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.60	0.60	0.55	0.60	0.55	0.60	0.55	0.60	0.55	
16	Xcel Energy Inc.	0.64	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.45	0.50	0.50	0.50	0.50	0.50	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	
17	Average	0.73	0.88	0.88	0.89	0.88	0.87	0.86	0.86	0.76	0.55	0.57	0.57	0.59	0.58	0.59	0.63	0.67	0.68	0.69	0.67	0.68	0.68	0.68	0.68	0.69	0.71	0.74	0.73	0.74	0.73	0.74	0.73	0.73	
18	Median	0.72	0.88	0.90	0.90	0.90	0.85	0.85	0.85	0.80	0.55	0.55	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.70	0.65	0.65	0.70	0.65	0.70	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	

Source: ValueSource: Value Line Software Analyzer

PacifiCorp

Value Line
Historical Betas

Line	Company	Average	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17	4Q16	3Q16	2Q16	1Q16	4Q15	3Q15	2Q15	1Q15	4Q14	3Q14		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)		
1	ALLETE, Inc.	0.79	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.60	N/A	N/A	0.65	0.65	0.65	0.70	0.75	0.75	0.80	0.75	0.80	0.80	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
2	Alliant Energy Corporation	0.74	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.55	0.60	0.60	0.65	0.60	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
3	Ameren Corporation	0.70	0.80	0.80	0.85	0.80	0.80	0.85	0.80	0.80	0.50	0.55	0.55	0.60	0.55	0.60	0.65	0.65	0.70	0.65	0.65	0.70	0.65	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
4	American Electric Power Company, Inc.	0.67	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.50	0.55	0.55	0.55	0.55	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	
5	Alamos Energy Corporation	0.73	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.55	0.60	0.60	0.65	0.60	0.60	0.60	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.85	0.85	0.85	0.80	0.80		
6	Avangrid, Inc.	0.58	0.85	0.85	0.85	0.85	N/A	0.85	0.80	0.80	0.40	0.40	0.40	0.40	0.40	0.30	0.30	0.40	0.35	NMF	NMF	NMF	NMF	NMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
7	Avista Corporation	0.76	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.70	0.70	0.75	0.75	0.70	0.70	0.70	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.75		
8	Black Hills Corporation	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.65	0.70	0.70	0.75	0.80	0.85	0.90	0.90	0.90	0.90	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.90	0.90	0.85	
9	CenterPoint Energy, Inc.	0.91	1.15	1.15	1.15	1.15	1.15	1.15	1.10	1.10	1.15	0.70	0.80	0.80	0.80	0.85	0.85	0.90	0.85	0.90	0.85	0.85	0.85	0.85	0.80	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.75	0.75
10	Chesapeake Utilities Corporation	0.68	0.80	0.80	0.80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.65	0.70	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.65	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	
11	CMS Energy Corporation	0.68	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.50	0.50	0.55	0.55	0.55	0.55	0.55	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
12	Consolidated Edison, Inc.	0.58	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.40	0.45	0.45	0.45	0.45	0.45	0.45	0.50	0.50	0.50	0.50	0.50	0.50	0.55	0.55	0.55	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	
13	Dominion Resources, Inc.	0.69	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.50	0.55	0.55	0.55	0.55	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	
14	DTE Energy Company	0.73	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.50	0.55	0.55	0.55	0.55	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
15	Duke Energy Corporation	0.65	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.45	N/A	N/A	0.50	0.50	0.55	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.50	0.60	0.60	0.60	0.60	0.60	0.60	
16	Edison International	0.72	0.95	1.00	0.95	0.95	0.95	0.95	0.90	0.90	0.55	0.55	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.60	0.60	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.75	0.75	
17	Entergy Corporation	0.73	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.55	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.65	0.70	0.70	0.70	0.70	
18	Evergy, Inc.	0.98	0.95	0.95	0.95	0.95	1.00	1.00	1.05	NMF	NMF	NMF	NMF	NMF	NMF	NMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Eversource Energy	0.73	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.55	0.55	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
20	Exelon Corporation	0.76	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.50	0.55	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.65	0.65	0.70	0.65	0.70	0.65	0.70	0.65	0.70	0.65	0.70	0.70	0.70	0.70	
21	FirstEnergy Corp.	0.71	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.70	0.65	0.70	0.65	0.70	0.70	0.70	0.70	
22	Fortis Inc.	0.69	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
23	Hawaiian Electric Industries, Inc.	0.72	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.55	0.55	0.55	0.55	0.55	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.75	
24	IDCORP, Inc.	0.73	0.80	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.50	0.55	0.55	0.55	0.55	0.60	0.60	0.65	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
25	MGE Energy, Inc.	0.69	0.75	0.75	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.50	0.55	0.55	0.55	0.60	0.60	0.65	0.70	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.70	0.70	0.70	
26	New Jersey Resources Corporation	0.82	1.00	1.00	1.00	1.00	0.95	0.95	0.90	0.90	0.60	0.70	0.70	0.70	0.70	0.70	0.70	0.80	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.85	0.80	0.80	0.80	0.80	0.80	
27	NextEra Energy, Inc.	0.71	0.95	0.90	0.95	0.90	0.90	0.90	0.85	0.85	0.50	0.55	0.55	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.75	0.70	0.75	0.70	0.75	0.70	0.70	0.70	
28	NSSource Inc.	0.71	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	NMF	NMF	NMF	NMF	NMF	NMF	NMF	NMF	
29	Northwest Natural Gas Company	0.70	0.80	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.55	0.60	0.60	0.60	0.65	0.60	0.65	0.70	0.65	0.70	0.70	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	
30	NorthWestern Corporation	0.72	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.55	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.70	0.70	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	
31	OGE Energy Corp.	0.93	1.05	1.05	1.05	1.05	1.05	1.10	1.05	1.05	1.05	0.70	0.75	0.80	0.80	0.85	0.85	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.85	
32	ONE Gas, Inc.	0.72	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
33	Oter Tail Corporation	0.84	0.85	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.70	0.70	0.65	0.70	0.75	0.80	0.85	0.85	0.90	0.90	0.90	0.85	0.85	0.85	0.80	0.85	0.80	0.85	0.85	0.85	0.85	0.90	0.90	0.90	
34	Pinnacle West Capital Corporation	0.71	0.90	0.95	0.90	0.90	0.90	0.85	0.85	0.85	0.45	0.50	0.55	0.55	0.55	0.60	0.65	0.65	0.70	0.70	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.70	0.70	0.70	0.70	0.70	0.70	0.70	
35	PNM Resources, Inc.	0.79	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.50	0.50	N/A	N/A	0.65	0.65	0.65	0.75	0.70	0.75	0.75	0.75	0.75	0.75	0.80	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
36	Portland General Electric Company	0.74	0.90	0.90	0.90	0.90	0.85	0.85	0.85	0.55	0.55	0.60	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	
37	PPL Corporation	0.80	1.10	1.10	1.10	1.10	1.10	1.15	1.10	1.10	1.05	0.65	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.65	0.65	0.65	0.60	0.65	0.65	
38	Public Service Enterprise Group Incorporated	0.75	0.90	0.90	0.95	0.90	0.90	0.90	0.90																										

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

Request for a General Rate Revision
(UE 399),

Application for Approval of Deferred
Accounting for a Balancing Account Related
to the Transportation Electrification Program
(UM 1964),

Application to Defer Costs Relating to Cedar
Springs II (UM 2134),

Application for Approval of Deferred
Accounting for Cholla Unit 4-Related
Property Tax Expense (UM 2142),

Application for Approval of Deferred
Accounting for Revenues Associated with
Renewable Energy Credits from Pryor
Mountain, (UM 2167),

Application for Approval of Deferred
Accounting and Accounting Order Related to
Non-Contributory Defined Benefit Pension
Plans (UM 2185),

Application for Approval of Deferred
Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/118
CAPM RETURN**

PacifiCorp

CAPM Return

<u>Line</u>	<u>Description</u>	<u>Current Market Risk Premium</u> (1)	<u>Normalized Market Risk Premium</u> (2)
1	Risk-Free Rate ^{1,2}	2.37%	3.30%
2	Risk Premium ³	9.67%	8.74%
3	Beta ⁴	0.73	0.73
4	CAPM	9.45%	9.70%

Sources:

¹ Attachment MPG-15, Page 1 of 3.

² *Blue Chip Financial Forecasts*, April 1, 2022, at 2.

³ *Kroll 2022 Yearbook*, at 146.

⁴ Exhibit MPG-16, Page 2 of 3.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

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Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

EXHIBIT AWEC-CUB/119

**STANDARD & POOR'S
CREDIT METRICS**

PacifiCorp

Standard & Poor's Credit Metrics

Line	Description	Retail	S&P Benchmark (Medial Volatility)			Reference
		Cost of Service	Intermediate	Significant	Aggressive	
		Amount (1)	(2)	(3)	(4)	
1	Rate Base	\$ 4,199,121,534				Exhibit PAC/1002, Cheung/3.
2	Weighted Common Return	4.71%				Exhibit AWEC-CUB/119, Gorman/2, Line 3, Col. 3.
3	Pre-Tax Rate of Return	8.61%				Exhibit AWEC-CUB/119, Gorman/2, Line 4, Col. 4.
4	Income to Common	\$ 197,894,098				Line 1 x Line 2.
5	EBIT	\$ 361,478,143				Line 1 x Line 3.
6	Depreciation & Amortization	\$ 331,231,596				Exhibit PAC/1002, Cheung/3.
7	Imputed Amortization	\$ -				N/A
8	Capitalized Interest*	\$ 46,445				Response to AWEC Data Request 0008, After Tax.
9	Deferred Income Taxes & ITC	\$ 12,660,019				Exhibit PAC/1002, Cheung/3.
10	Funds from Operations (FFO)	\$ 541,832,159				Sum of Line 4 and Lines 6 through 9.
11	Imputed Interest Expense	\$ 21,000,000				Exhibit PAC/200, Koblaha/21.
12	EBITDA	\$ 713,709,739				Sum of Lines 5 through 7 and Line 11.
13	Total Adjusted Debt [†]	\$ 3,011,217,813				Exhibit AWEC-CUB/100, Table 5 - Long-Term Debt x OR RB Allocator.
14	Total Adjusted Debt Ratio	51.0%				Exhibit AWEC-CUB/100, Table 5 - Proposed Capital
15	Debt to EBITDA	4.2x	2.5x - 3.5x	3.5x - 4.5x	4.5x - 5.5x	Line 13 / Line 12.
16	FFO to Total Debt	18%	23% - 35%	13% - 23%	9% - 13%	Line 10 / Line 13.
17	Indicative Credit Rating		A	A-	BBB	S&P Methodology, November 19, 2013.

Sources:

Standard & Poor's: "Criteria: Corporate Methodology," November 19, 2013.

* The allocation factor was derived from the June 2019 OR Rate Base and the Total Company Rate base as shown on Exhibit PAC/1302, McCoy/8.

Note:

Based on the April 2020 S&P report, PacifiCorp has an "Excellent" business profile and a "Significant" financial profile, and falls under the 'Medial Volatility' matrix.

S&P Business/Financial Risk Profile Matrix			
Business Risk Profile	Financial Risk Profile		
	3 (intermediate)	4 (significant)	5 (aggressive)
1 (excellent)	a+/a	a-	bbb
2 (strong)	a-/bbb+	bbb	bb+
3 (satisfactory)	bbb/bbb-	bbb-/bb+	bb

PacifiCorp

Standard & Poor's Credit Metrics (Pre-Tax Rate of Return)

<u>Line</u>	<u>Description</u>	<u>Weight</u> (1)	<u>Cost</u> (2)	<u>Weighted</u> <u>Cost</u> (3)	<u>Pre-Tax</u> <u>Weighted</u> <u>Cost</u> (4)
1	Long-Term Debt	49.04%	4.38%	2.15%	2.15%
2	Preferred Stock	0.01%	6.75%	0.00%	0.00%
3	Common Equity	<u>50.95%</u>	9.25%	<u>4.71%</u>	<u>6.46%</u>
4	Total	100.00%		6.86%	8.61%
5	Tax Conversion Rate				1.37080

Source:

Exhibit AWEC-CUB/100, Table 5 - Proposed Capital Structure.

PacifiCorp

S&P Adjusted Debt Ratio **(Value Line Utility Industry - Electric, Gas, and Water)** **(FY 2019 - 2021 - Industry Medians)**

<u>Rating</u>	<u>Median</u>	<u>% Distribution of 3 Year Average</u>			
		<u><45</u>	<u><50</u>	<u>50 to 55</u>	<u>>55</u>
AA-	44%	67%	100%	0%	0%
A+	53%	18%	55%	0%	45%
A	49%	26%	67%	15%	19%
A-	53%	7%	31%	39%	30%
BBB+	52%	9%	38%	39%	23%
BBB	48%	30%	53%	30%	17%

Source:
S&P Capital IQ, downloaded June 7, 2022.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 399, UM 1964, UM 2134, UM 2142, UM 2167, UM 2185, UM 2186, UM 2201

In the Matters of

PACIFICORP dba PACIFIC POWER,

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Accounting for Costs Relating to a Renewable
Resource Pursuant to ORS 469A.120
(UM 2186), and

Alliance of Western Energy Consumers,
Application for an Accounting Order
Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

EXHIBIT AWEC-CUB/120

**BULKLEY REVISED
MULTI-STAGE DCF**

PacifiCorp

Bulkley Revised 30-Day Multi-Stage DCF Model

Line	Company	Ticker	Stock Price	Annualized Dividend	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
						Year 6	Year 7	Year 8	Year 9	Year 10		
						[4]	[5]	[6]	[7]	[8]		
1	ALLETE, Inc.	ALE	\$2.52	\$63.13	5.56%	5.31%	5.07%	4.83%	4.59%	4.34%	4.10%	8.84%
2	Alliant Energy Corporation	LNT	\$1.61	\$58.59	5.90%	5.60%	5.30%	5.00%	4.70%	4.40%	4.10%	7.42%
3	Ameren Corporation	AEE	\$2.20	\$86.40	7.30%	6.77%	6.23%	5.70%	5.17%	4.63%	4.10%	7.46%
4	American Electric Power Company, Inc.	AEP	\$3.12	\$84.96	5.90%	5.60%	5.30%	5.00%	4.70%	4.40%	4.10%	8.55%
5	Avista Corporation	AVA	\$1.69	\$40.41	4.77%	4.66%	4.54%	4.43%	4.32%	4.21%	4.10%	8.83%
6	CMS Energy Corporation	CMS	\$1.74	\$62.53	6.21%	5.86%	5.50%	5.15%	4.80%	4.45%	4.10%	7.53%
7	Duke Energy Corporation	DUK	\$3.94	\$101.53	4.93%	4.79%	4.66%	4.52%	4.38%	4.24%	4.10%	8.53%
8	Entergy Corporation	ETR	\$4.04	\$107.27	4.50%	4.43%	4.37%	4.30%	4.23%	4.17%	4.10%	8.28%
9	Evergy, Inc.	EVRG	\$2.29	\$66.43	6.41%	6.02%	5.64%	5.25%	4.87%	4.48%	4.10%	8.41%
10	IDACORP, Inc.	IDA	\$3.00	\$109.22	4.27%	4.24%	4.21%	4.18%	4.16%	4.13%	4.10%	7.08%
11	NextEra Energy, Inc.	NEE	\$1.54	\$89.80	9.78%	8.84%	7.89%	6.94%	5.99%	5.05%	4.10%	6.75%
12	NorthWestern Corporation	NWE	\$2.48	\$55.96	3.87%	3.91%	3.94%	3.98%	4.02%	4.06%	4.10%	8.84%
13	Otter Tail Corporation	OTTR	\$1.56	\$68.13	7.23%	6.71%	6.19%	5.67%	5.14%	4.62%	4.10%	7.11%
14	Portland General Electric Company	POR	\$1.72	\$51.06	7.58%	7.00%	6.42%	5.84%	5.26%	4.68%	4.10%	8.63%
15	Southern Company	SO	\$2.64	\$64.96	5.70%	5.43%	5.17%	4.90%	4.63%	4.37%	4.10%	8.97%
16	Xcel Energy Inc.	XEL	\$1.83	\$66.39	6.43%	6.04%	5.66%	5.27%	4.88%	4.49%	4.10%	7.55%
17	MEDIAN											8.34%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 30-trading day average as of December 31, 2021

[3] Source: Exhibit PAC 304

[4] Equals $[3] + ([9] - [3]) / 6$

[5] Equals $[4] + ([9] - [3]) / 6$

[6] Equals $[5] + ([9] - [3]) / 6$

[7] Equals $[6] + ([9] - [3]) / 6$

[8] Equals $[7] + ([9] - [3]) / 6$

[9] Source: Exhibit PAC 306

[10] Equals internal rate of return of cash flows for Year 0 through Year 200

PacifiCorp

Bulkley Revised 90-Day Multi-Stage DCF Model

Line	Company	Ticker	Stock Price	Annualized Dividend	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
						Year 6	Year 7	Year 8	Year 9	Year 10		
						[4]	[5]	[6]	[7]	[8]		
1	ALLETE, Inc.	ALE	\$2.52	\$62.93	5.56%	5.31%	5.07%	4.83%	4.59%	4.34%	4.10%	8.85%
2	Alliant Energy Corporation	LNT	\$1.61	\$57.81	5.90%	5.60%	5.30%	5.00%	4.70%	4.40%	4.10%	7.46%
3	Ameren Corporation	AEE	\$2.20	\$85.14	7.30%	6.77%	6.23%	5.70%	5.17%	4.63%	4.10%	7.51%
4	American Electric Power Company, Inc.	AEP	\$3.12	\$84.99	5.90%	5.60%	5.30%	5.00%	4.70%	4.40%	4.10%	8.55%
5	Avista Corporation	AVA	\$1.69	\$40.38	4.77%	4.66%	4.54%	4.43%	4.32%	4.21%	4.10%	8.83%
6	CMS Energy Corporation	CMS	\$1.74	\$61.76	6.21%	5.86%	5.50%	5.15%	4.80%	4.45%	4.10%	7.57%
7	Duke Energy Corporation	DUK	\$3.94	\$101.55	4.93%	4.79%	4.66%	4.52%	4.38%	4.24%	4.10%	8.53%
8	Entergy Corporation	ETR	\$4.04	\$106.25	4.50%	4.43%	4.37%	4.30%	4.23%	4.17%	4.10%	8.32%
9	Evergy, Inc.	EVRG	\$2.29	\$65.27	6.41%	6.02%	5.64%	5.25%	4.87%	4.48%	4.10%	8.49%
10	IDACORP, Inc.	IDA	\$3.00	\$106.01	4.27%	4.24%	4.21%	4.18%	4.16%	4.13%	4.10%	7.17%
11	NextEra Energy, Inc.	NEE	\$1.54	\$85.45	9.78%	8.84%	7.89%	6.94%	5.99%	5.05%	4.10%	6.89%
12	NorthWestern Corporation	NWE	\$2.48	\$58.26	3.87%	3.91%	3.94%	3.98%	4.02%	4.06%	4.10%	8.65%
13	Otter Tail Corporation	OTTR	\$1.56	\$62.00	7.23%	6.71%	6.19%	5.67%	5.14%	4.62%	4.10%	7.41%
14	Portland General Electric Company	POR	\$1.72	\$49.88	7.58%	7.00%	6.42%	5.84%	5.26%	4.68%	4.10%	8.74%
15	Southern Company	SO	\$2.64	\$64.12	5.70%	5.43%	5.17%	4.90%	4.63%	4.37%	4.10%	9.03%
16	Xcel Energy Inc.	XEL	\$1.83	\$65.47	6.43%	6.04%	5.66%	5.27%	4.88%	4.49%	4.10%	7.60%
17	MEDIAN											8.40%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 90-trading day average as of December 31, 2021
- [3] Source: Exhibit PAC 304
- [4] Equals $[3] + ([9] - [3]) / 6$
- [5] Equals $[4] + ([9] - [3]) / 6$
- [6] Equals $[5] + ([9] - [3]) / 6$
- [7] Equals $[6] + ([9] - [3]) / 6$
- [8] Equals $[7] + ([9] - [3]) / 6$
- [9] Source: Exhibit PAC 306
- [10] Equals internal rate of return of cash flows for Year 0 through Year 200

PacifiCorp

Bulkley Revised 90-Day Multi-Stage DCF Model

Line	Company	Ticker	Stock Price	Annualized Dividend	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
						Year 6	Year 7	Year 8	Year 9	Year 10		
						[4]	[5]	[6]	[7]	[8]		
			[1]	[2]	[3]						[9]	[10]
1	ALLETE, Inc.	ALE	\$2.52	\$66.46	5.56%	5.31%	5.07%	4.83%	4.59%	4.34%	4.10%	8.60%
2	Alliant Energy Corporation	LNT	\$1.61	\$57.87	5.90%	5.60%	5.30%	5.00%	4.70%	4.40%	4.10%	7.46%
3	Ameren Corporation	AEE	\$2.20	\$84.84	7.30%	6.77%	6.23%	5.70%	5.17%	4.63%	4.10%	7.53%
4	American Electric Power Company, Inc.	AEP	\$3.12	\$85.87	5.90%	5.60%	5.30%	5.00%	4.70%	4.40%	4.10%	8.50%
5	Avista Corporation	AVA	\$1.69	\$42.34	4.77%	4.66%	4.54%	4.43%	4.32%	4.21%	4.10%	8.61%
6	CMS Energy Corporation	CMS	\$1.74	\$62.01	6.21%	5.86%	5.50%	5.15%	4.80%	4.45%	4.10%	7.56%
7	Duke Energy Corporation	DUK	\$3.94	\$102.02	4.93%	4.79%	4.66%	4.52%	4.38%	4.24%	4.10%	8.51%
8	Entergy Corporation	ETR	\$4.04	\$106.04	4.50%	4.43%	4.37%	4.30%	4.23%	4.17%	4.10%	8.33%
9	Evergy, Inc.	EVRG	\$2.29	\$64.59	6.41%	6.02%	5.64%	5.25%	4.87%	4.48%	4.10%	8.53%
10	IDACORP, Inc.	IDA	\$3.00	\$103.97	4.27%	4.24%	4.21%	4.18%	4.16%	4.13%	4.10%	7.23%
11	NextEra Energy, Inc.	NEE	\$1.54	\$80.89	9.78%	8.84%	7.89%	6.94%	5.99%	5.05%	4.10%	7.05%
12	NorthWestern Corporation	NWE	\$2.48	\$60.99	3.87%	3.91%	3.94%	3.98%	4.02%	4.06%	4.10%	8.44%
13	Otter Tail Corporation	OTTR	\$1.56	\$55.71	7.23%	6.71%	6.19%	5.67%	5.14%	4.62%	4.10%	7.79%
14	Portland General Electric Company	POR	\$1.72	\$49.44	7.58%	7.00%	6.42%	5.84%	5.26%	4.68%	4.10%	8.78%
15	Southern Company	SO	\$2.64	\$64.07	5.70%	5.43%	5.17%	4.90%	4.63%	4.37%	4.10%	9.04%
16	Xcel Energy Inc.	XEL	\$1.83	\$67.39	6.43%	6.04%	5.66%	5.27%	4.88%	4.49%	4.10%	7.50%
17	MEDIAN											8.38%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 180-trading day average as of December 31, 2021

[3] Source: Exhibit PAC 304

[4] Equals $[3] + ([9] - [3]) / 6$

[5] Equals $[4] + ([9] - [3]) / 6$

[6] Equals $[5] + ([9] - [3]) / 6$

[7] Equals $[6] + ([9] - [3]) / 6$

[8] Equals $[7] + ([9] - [3]) / 6$

[9] Source: Exhibit PAC 306

[10] Equals internal rate of return of cash flows for Year 0 through Year 200

**BEFORE THE PUBLIC UTILITY COMMISSION
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Alliance of Western Energy Consumers,
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Requiring PacifiCorp to Defer Fly Ash
Revenues (UM 2201).

**EXHIBIT AWEC-CUB/121
ACCURACY OF
INTEREST RATE FORECASTS**

PacifiCorp

Accuracy of Interest Rate Forecasts (Long-Term Treasury Bond Yields - Projected Vs. Actual)

Line	Date	Publication Data			Actual Yield in Projected Quarter	Projected Yield Higher (Lower) Than Actual Yield*
		Prior Quarter	Projected	Projected		
		Actual Yield	Yield	Quarter		
		(1)	(2)	(3)	(4)	(5)
1	Dec-00	5.8%	5.8%	1Q, 02	5.6%	0.2%
2	Mar-01	5.7%	5.6%	2Q, 02	5.8%	-0.2%
3	Jun-01	5.4%	5.8%	3Q, 02	5.2%	0.6%
4	Sep-01	5.7%	5.9%	4Q, 02	5.1%	0.8%
5	Dec-01	5.5%	5.7%	1Q, 03	5.0%	0.7%
6	Mar-02	5.3%	5.9%	2Q, 03	4.7%	1.2%
7	Jun-02	5.6%	6.2%	3Q, 03	5.2%	1.0%
8	Sep-02	5.8%	5.9%	4Q, 03	5.2%	0.7%
9	Dec-02	5.2%	5.7%	1Q, 04	4.9%	0.8%
10	Mar-03	5.1%	5.7%	2Q, 04	5.4%	0.3%
11	Jun-03	5.0%	5.4%	3Q, 04	5.1%	0.3%
12	Sep-03	4.7%	5.8%	4Q, 04	4.9%	0.9%
13	Dec-03	5.2%	5.9%	1Q, 05	4.8%	1.1%
14	Mar-04	5.2%	5.9%	2Q, 05	4.6%	1.4%
15	Jun-04	4.9%	6.2%	3Q, 05	4.5%	1.7%
16	Sep-04	5.4%	6.0%	4Q, 05	4.8%	1.2%
17	Dec-04	5.1%	5.8%	1Q, 06	4.6%	1.2%
18	Mar-05	4.9%	5.6%	2Q, 06	5.1%	0.5%
19	Jun-05	4.8%	5.5%	3Q, 06	5.0%	0.5%
20	Sep-05	4.6%	5.2%	4Q, 06	4.7%	0.5%
21	Dec-05	4.5%	5.3%	1Q, 07	4.8%	0.5%
22	Mar-06	4.8%	5.1%	2Q, 07	5.0%	0.1%
23	Jun-06	4.6%	5.3%	3Q, 07	4.9%	0.4%
24	Sep-06	5.1%	5.2%	4Q, 07	4.6%	0.6%
25	Dec-06	5.0%	5.0%	1Q, 08	4.4%	0.6%
26	Mar-07	4.7%	5.1%	2Q, 08	4.6%	0.5%
27	Jun-07	4.8%	5.1%	3Q, 08	4.5%	0.7%
28	Sep-07	5.0%	5.2%	4Q, 08	3.7%	1.5%
29	Dec-07	4.9%	4.8%	1Q, 09	3.5%	1.4%
30	Mar-08	4.6%	4.8%	2Q, 09	4.0%	0.8%
31	Jun-08	4.4%	4.9%	3Q, 09	4.3%	0.6%
32	Sep-08	4.6%	5.1%	4Q, 09	4.3%	0.8%
33	Dec-08	4.5%	4.6%	1Q, 10	4.6%	0.0%
34	Mar-09	3.7%	4.1%	2Q, 10	4.4%	-0.3%
35	Jun-09	3.5%	4.6%	3Q, 10	3.9%	0.8%
36	Sep-09	4.0%	5.0%	4Q, 10	4.2%	0.8%
37	Dec-09	4.3%	5.0%	1Q, 11	4.6%	0.4%
38	Mar-10	4.3%	5.2%	2Q, 11	4.3%	0.9%
39	Jun-10	4.6%	5.2%	3Q, 11	3.7%	1.5%
40	Sep-10	4.4%	4.7%	4Q, 11	3.0%	1.7%
41	Dec-10	3.9%	4.6%	1Q, 12	3.1%	1.5%
42	Mar-11	4.2%	5.1%	2Q, 12	2.9%	2.2%
43	Jun-11	4.6%	5.2%	3Q, 12	2.8%	2.5%
44	Sep-11	4.3%	4.2%	4Q, 12	2.9%	1.3%
45	Dec-11	3.7%	3.8%	1Q, 13	3.1%	0.7%
46	Mar-12	3.0%	3.8%	2Q, 13	3.2%	0.7%
47	Jun-12	3.1%	3.7%	3Q, 13	3.7%	0.0%
48	Sep-12	2.9%	3.4%	4Q, 13	3.8%	-0.4%
49	Dec-12	2.8%	3.4%	1Q, 14	3.7%	-0.3%
50	Mar-13	2.9%	3.6%	2Q, 14	3.4%	0.2%
51	Jun-13	3.1%	3.7%	3Q, 14	3.3%	0.4%
52	Sep-13	3.2%	4.2%	4Q, 14	3.0%	1.2%
53	Dec-13	3.7%	4.2%	1Q, 15	2.6%	1.7%
54	Mar-14	3.8%	4.4%	2Q, 15	2.9%	1.5%
55	Jun-14	3.7%	4.3%	3Q, 15	2.8%	1.5%
56	Sep-14	3.4%	4.3%	4Q, 15	3.0%	1.3%
57	Dec-14	3.3%	4.0%	1Q, 16	2.7%	1.3%

Source:
Blue Chip Financial Forecasts, Various Dates.
* Col. 2 - Col. 4.

PacifiCorp

Accuracy of Interest Rate Forecasts (Long-Term Treasury Bond Yields - Projected Vs. Actual)

Line	Date	Publication Data			Actual Yield in Projected Quarter	Projected Yield Higher (Lower) Than Actual Yield*
		Prior Quarter	Projected	Projected		
		Actual Yield	Yield	Quarter		
		(1)	(2)	(3)	(4)	(5)
1	Mar-15	3.0%	3.7%	2Q 16	2.6%	1.1%
2	Jun-15	2.6%	3.7%	3Q 16	2.3%	1.4%
3	Sep-15	2.9%	3.8%	4Q 16	2.8%	1.0%
4	Dec-15	2.8%	3.7%	1Q 17	3.0%	0.7%
5	Mar-16	3.0%	3.5%	2Q 17	2.9%	0.6%
6	Jun-16	2.7%	3.4%	3Q 17	2.8%	0.6%
7	Sep-16	2.6%	3.1%	4Q 17	2.8%	0.3%
8	Dec-16	2.3%	3.4%	1Q 18	3.0%	0.4%
9	Mar-17	2.8%	3.7%	2Q 18	3.1%	0.6%
10	Jun-17	3.0%	3.7%	3Q 18	3.1%	0.6%
11	Sep-17	2.9%	3.6%	4Q 18	3.3%	0.3%
12	Dec-17	2.8%	3.6%	1Q 19	3.0%	0.6%
13	Mar-18	2.8%	3.7%	2Q 19	2.8%	0.9%
14	Jun-18	3.0%	3.8%	3Q 19	2.3%	1.5%
15	Sep-18	3.1%	3.7%	4Q 19	2.3%	1.4%
16	Dec-18	3.1%	3.7%	1Q 20	1.9%	1.8%
17	Mar-19	3.3%	3.4%	2Q 20	1.4%	2.0%
18	Jun-19	3.0%	3.1%	3Q 20	1.4%	1.7%
19	Sep-19	2.8%	2.6%	4Q 20	1.6%	1.0%
20	Oct-19	2.3%	2.5%	1Q 21	2.1%	0.4%
21	Nov-19	2.3%	2.5%	1Q 21	2.1%	0.4%
22	Dec-19	2.3%	2.5%	1Q 21	2.1%	0.4%
23	Jan-20	2.3%	2.6%	2Q 21	2.3%	0.3%
24	Feb-20	2.3%	2.6%	2Q 21	2.3%	0.3%
25	Mar-20	2.3%	2.5%	2Q 21	2.3%	0.2%
26	Apr-20	1.9%	2.0%	3Q 21	1.9%	0.1%
27	May-20	1.9%	1.8%	3Q 21	1.9%	-0.1%
28	Jun-20	1.9%	1.9%	3Q 21	1.9%	0.0%
29	Jul-20	1.4%	1.9%	4Q 21	2.0%	-0.1%
30	Aug-20	1.4%	1.9%	4Q 21	2.0%	-0.1%
31	Sep-20	1.4%	1.8%	4Q 21	2.0%	-0.2%
32	Oct-20	1.4%	1.9%	1Q 22	2.3%	-0.4%
33	Nov-20	1.4%	2.0%	1Q 22	2.3%	-0.3%
34	Dec-20	1.4%	2.0%	1Q 22	2.3%	-0.3%
35	Jan-21	1.6%	2.1%	2Q 22		
36	Feb-21	1.6%	2.2%	2Q 22		
37	Mar-21	1.6%	2.4%	2Q 22		
38	Apr-21	2.1%	2.7%	3Q 22		
39	May-21	2.1%	2.8%	3Q 22		
40	Jun-21	2.1%	2.8%	3Q 22		
41	Jul-21	2.3%	2.7%	4Q 22		
42	Aug-21	2.3%	2.6%	4Q 22		
43	Sep-21	2.3%	2.6%	4Q 22		
44	Oct-21	1.9%	2.7%	1Q 22		
45	Nov-21	1.9%	2.7%	1Q 22		
46	Dec-21	1.9%	2.2%	1Q 22		
47	Jan-22	2.0%	2.8%	2Q 23		
48	Feb-22	2.0%	2.8%	2Q 23		
49	Mar-22	2.0%	3.0%	2Q 23		
50	Apr-22	2.3%	3.3%	3Q 23		
51	May-22	2.3%	3.5%	3Q 23		
52	Jun-22	2.3%	3.6%	3Q 23		

Source:
Blue Chip Financial Forecasts, Various Dates.
* Col. 2 - Col. 4.