**Exh. DCP-1T**
**Dockets UE-170485/UG-170486**
**Witness: David C. Parcell**

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

| | |
|---|---|
| **WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,**<br><br>**Complainant,**<br><br>**v.**<br><br>**AVISTA CORPORATION d/b/a AVISTA UTILITIES,**<br><br>**Respondent.** | **DOCKETS UE-170485 and UG-170486 (*Consolidated*)** |

# TESTIMONY OF

# DAVID C. PARCELL

## ON BEHALF OF THE STAFF OF WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

***Cost of Capital***

**October 27, 2017**

**TABLE OF CONTENTS**

## LIST OF EXHIBITS

# I. INTRODUCTION

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

A. My name is David C. Parcell. I am a Principal and Senior Economist of Technical Associates, Inc. My business address is Suite 130, 1503 Santa Rosa Rd., Richmond, Virginia 23229.

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

A. I hold B.A. (1969) and M.A. (1970) degrees in economics from Virginia Polytechnic Institute and State University (Virginia Tech) and a M.B.A. (1985) from Virginia Commonwealth University. I have been a consulting economist with Technical Associates since 1970. I have provided cost of capital testimony in public utility ratemaking proceedings dating back to 1972 and I have previously filed testimony and/or testified in over 555 utility proceedings before about 50 regulatory agencies in the United States and Canada. I have previously filed testimony on behalf of the Staff of the Washington Utilities and Transportation Commission (Commission) in proceedings involving Cascade Natural Gas, Puget Sound Energy and Pacific Power & Light Company, as well as Avista Corporation ("Avista" or "Company"). Exh. DCP-2 provides a more complete description of my education and relevant work experience.

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

A. I have been retained by the Commission Staff to evaluate the cost of capital ("COC") aspects of the current electric and natural gas rate cases of Avista. I have performed independent studies and I am making recommendations of the current COC for Avista.

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

A. Yes. In addition to Exh. DCP-2, identified above, I have prepared Exh. DCP-3 through Exh. DCP-16. These exhibits were prepared either by me or under my direction. The information contained in these exhibits is correct to the best of my knowledge and belief

## II. RECOMMENDATIONS AND SUMMARY

**Q. What are your COC recommendations in this proceeding?**

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

| Item | Percent | Cost | | | Weighted Cost | | |
|---|---|---|---|---|---|---|---|
| Short-Term Debt | 2.90% | 3.26% | | | 0.09% | | |
| Long-Term Debt | 48.60% | 5.54% | | | 2.69% | | |
| Common Equity | 48.50% | 8.70% | 9.10% | 9.50% | 4.22% | 4.41% | 4.61% |
| Total | 100.0% | | | | 7.01% | | 7.39% |
| | | | | | | 7.20% | |

Avista's application requests a COC of 7.76 percent and a cost of equity ("ROE") of 9.90 percent.

**Q. Please summarize your analyses and conclusions.**

A. This proceeding is concerned with Avista's regulated electric utility and natural gas operations in Washington. My analyses concern the Company's COC. As noted in a later section of my testimony, Avista performs its electric and natural gas operations in Washington, and all other states except Alaska, through its Avista Utilities division. Avista Utilities is not a distinct corporate entity and does not have its own financial statements and capital structure. Avista has traditionally used its corporate structure, exclusive of its Alaska operations, to establish rates in Washington. In addition, it has not distinguished between its electric and natural gas operations from a COC perspective. I have followed this tradition in my COC analyses and thus focus on Avista's capitalization and a single ROE for both its electric and natural gas operations.

The first step in performing my COC analyses is to develop the appropriate capital structure. Avista proposes use of a capital structure comprised of 50 percent common equity and 50 percent debt,[1] which is a hypothetical capital structure. These are not the same capital structure ratios adopted by the Commission in the previous rate proceedings,[2] where a capital structure with 48.5 percent common equity was employed. I use this previously-adopted capital structure,[3] which I believe remains the proper capital structure for the Company.

The second step in a cost of capital calculation is to determine the embedded cost rates of debt. Avista proposes use of a 5.62 percent cost of debt (which includes both the costs of long-term debt and short-term debt), which are estimated cost rates as of May 1,

[1] Thies, Exh. MTT-1T at 13:18 – 14:1.
[2] Dockets UE-150204 and UG-150205.
[3] My COC analyses separate the short-term debt and long-term debt components. Avista's analyses combine these. There is little difference in the COC conclusions arising from these different approaches.

2018.[4] I do not use this proposed cost rate for debt. I have accepted the Company's cost of short-term debt, as shown on Exh. MTT-2C. However, I have used the 5.41 percent cost of debt recommended by Commission Staff, which does not recognize the SWAP loss/gain components of the "3.54% Series" bonds issued in December of 2016, as proposed by Avista. The long-term debt portion of this 5.41 percent cost is 5.54 percent.

The third step in the COC calculation is to estimate the ROE. I employ three recognized methodologies to estimate Avista's ROE, each of which I apply to two proxy groups of utilities. These three methodologies and my findings are:

| Methodology | Range |
|---|---|
| Discounted Cash Flow ("DCF") | 8.4%-8.7% (8.55% mid-point) |
| Capital Asset Pricing Model ("CAPM") | 6.6%-6.9% (6.75% mid-point) |
| Comparable Earnings ("CE") | 9.0%-10.0% (9.50% mid-point) |

Based upon these findings, I conclude that Avista's ROE is within a range of 8.70 percent to 9.50 percent, which is based upon the upper end of the range of the results for the DCF model and mid-point of the range of results for the CE model.[5] I specifically recommend a 9.10 percent ROE for Avista.

## III. ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES

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

[4] Thies, Exh. MTT-2C.
[5] As I indicate in a later section, my ROE recommendation does not directly incorporate the CAPM results, which I believe to be somewhat low at this time, relative to the DCF and CE results.

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

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

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

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

From an economic standpoint, a fair rate of return is normally interpreted to mean that an efficient and economically managed utility will be able to maintain its financial integrity, attract capital, and establish comparable returns for similar risk investments.

These concepts are derived from economic and financial theory and are generally implemented using financial models and economic concepts.

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

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

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

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

> The rate-making process under the [Natural Gas] Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the investor and consumer interests. . . . From the investor or company point of view it is

> important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. . . . By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

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

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

A. Neither the courts nor economic/financial theory has developed exact and mechanical procedures for precisely determining the cost of capital. This is the case because the cost of capital is an opportunity cost and is prospective-looking, which dictates that it must be estimated. However, there are several useful models that can be employed to assist in estimating the ROE, which is the COC item that is the most difficult to determine. These include the DCF, CAPM, CE and risk premium ("RP") methods. I have not directly employed a RP model in my analyses although, as discussed later, my CAPM analysis is

a form of the RP methodology. Each of these methodologies will be described in more detail later in my testimony.

## IV. GENERAL ECONOMIC CONDITIONS

**Q. Are economic and financial conditions important in determining the costs of capital for a public utility?**

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

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

My understanding is that this position is consistent with the *Bluefield* decision that noted "[a] rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally."[6]

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

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

A. I examined several sets of economic statistics from 1975 to the present. I chose this time period because it permits the evaluation of economic conditions over four full business cycles plus the current cycle allowing for an assessment of changes in long-term trends. Consideration of economic/financial conditions over a relatively long period of time allows me to assess how such conditions have had impacts on the level and trends of the costs of capital. This period also approximates the beginning and continuation of active rate case activities by public utilities that generally began in the mid-1970s.

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

**Q. Please describe the timeframes of the four prior business cycles and the current cycle.**

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

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

Source: The National Bureau of Economic Research, "U.S. Business Cycle Expansions and Contractions."[7]

[7] http://www.nber.org/cycles/cyclesmain.html.

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

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

However, in 2008 and 2009 the economy declined significantly, initially as a result of the 2007 collapse of the "sub-prime" mortgage market and the related liquidity crisis in the financial sector of the economy. Subsequently, this financial crisis intensified with a more broad-based decline initially based on a substantial increase in petroleum prices and a dramatic decline in the U.S. financial sector, culminating with the collapse and/or bailouts of a significant number of well-known institutions such as Bear Stearns, Lehman Brothers, Merrill Lynch, Freddie Mac, Fannie Mae, AIG and Wachovia. The recession also witnessed the demise of national companies such as Circuit City and the bankruptcies of automotive manufacturers Chrysler and General Motors.

This decline has been described as the worst financial crisis since the Great Depression and has been referred to as the "Great Recession." Beginning in 2008, the U.S. and other governments implemented unprecedented actions to attempt to correct or minimize the scope and effects of this recession.

The recession reached its low point in mid-2009, when the economy began to expand again, although at a slow and uneven rate. However, the length and severity of the recession, as well as a relatively slow and uneven recovery, indicate that the impacts of the recession have been and will be felt for an extended period of time.

**Q. Please describe recent and current economic and financial conditions and their impact on the costs of capital.**

A. One impact of the Great Recession has been a reduction in actual and expected investment returns and a corresponding reduction in capital costs. This decline is evidenced by a decline in both short-term and long-term interest rates and the expectations of investors and is reflected in cost of equity model results (such as DCF, CAPM and CE). Regulatory agencies throughout the United States have recognized the decline in capital costs by authorizing lower returns on equity for regulated utilities in each of the last several years.[8]

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

Page 1 shows that in 2007 the economy stalled and subsequently entered a significant decline, as indicated by the lower growth rate in real (*i.e.*, adjusted for inflation) Gross Domestic Product ("GDP"), lower levels of industrial production, and an increase in the unemployment rate. This recession lasted until mid-2009, making it a longer-than-normal recession, as well as a much deeper recession. Since then, economic growth has been somewhat erratic and the economy has grown slower than in prior expansions.

Page 1 also shows the rate of inflation. As reflected in the Consumer Price Index ("CPI"), inflation rose significantly during the 1975-1982 business cycle and reached double-digit levels in 1979-1980. The rate of inflation has declined substantially since

[8] Regulatory Research Associates, "Regulatory Focus", July 26, 2017.

1981. Since 2008, the CPI has been 3 percent or lower, with both 2014 and 2015 being below 1 percent and 2016 being 2.1 percent. It is thus apparent that the rate of inflation has generally been declining over the past several business cycles. Recent and current levels of inflation are at the lowest levels of the past 35 years, which is reflective of lower capital costs.[9]

**Q. What have been the trends in interest rates over the four prior business cycles and at the current time?**

A. Page 2 shows several series of interest rates. Both short-term and long-term rates rose sharply to record levels in 1975-1981 when the inflation rate was high. Interest rates have declined substantially in conjunction with the corresponding declines in inflation since the early 1980's.

From 2008 to late 2015, the Federal Reserve System ("Federal Reserve") maintained the Federal Funds rate (i.e., short-term interest rate) at 0.25 percent, an all-time low. The Federal Reserve has subsequently raised the Federal Funds rate on four occasions between December of 2015 and June of 2017.[10] The Federal Reserve also purchased U.S. Treasury securities to stimulate the economy.[11]

As seen on page 2, since 2013 both U.S. and corporate bond yields declined to their lowest levels in the past four business cycles and in more than 35 years. Even with

[9] The rate of inflation is one component of interest rate expectations of investors, who generally expect to receive a return in excess of the rate of inflation. Thus, a lower rate of inflation has a downward impact on interest rates and other capital costs.
[10] These were December 2015, December 2016, March 2017, and June 2017.
[11] This is referred to as Quantitative Easing, which was comprised of three "rounds." In "round" 3, known as QE3, the Federal Reserve initially purchased some $85 billion of U.S. Treasury Securities per month in order to stimulate the economy. The Federal Reserve eventually "tapered" its purchase of U.S. Treasury securities through October 2014, at which time Quantitative Easing ended.

the "tapering" and eventual ending of the Federal Reserve's Quantitative Easing program, as well as the Federal Reserve's raising of the Federal Funds rate, interest rates have remained low. Currently, both government and utility long-term lending rates remain near historically low levels, again reflective of lower capital costs.

**Q. What does Exh. DCP-4 show for trends of common share prices?**

A. Page 3 shows several series of common stock prices and ratios. These indicate that stock prices were essentially stagnant during the high inflation/high interest rate environment of the late 1970s and early 1980s. The 1983-1991 business cycle and the more recent cycles witnessed a significant upward trend in stock prices. The beginning of the recent financial crisis saw stock prices decline precipitously as stock prices in 2008 and early 2009 were down significantly from peak 2007 levels, reflecting the financial/economic crisis. Beginning in the second quarter of 2009, prices recovered substantially and ultimately reached and exceeded the levels achieved prior to the "crash." On the other hand, recent equity markets have been somewhat volatile.

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

A. Recent economic and financial circumstances have differed from any that have prevailed since at least the 1930s. In conjunction with the Great Recession, there was a decline in capital costs and returns which significantly reduced the value of most retirement accounts, investment portfolios and other assets. One significant aspect of this has been a

decline in investor expectations of returns[12] even with the return of stock prices to levels achieved prior to the "crash."[13] This is evident in several ways: (1) lower interest rates on bank deposits; (2) lower interest rates on U.S. Treasury and utility bonds; and (3) lower authorized ROEs by regulatory commissions. Finally, as noted above, utility bond interest rates are currently at levels below those prevailing prior to the financial crisis of late 2008 to early 2009 and are near the lowest levels in the past 35 years. Even with the increase in long-term rates in late 2016, utility bond yields still remain well below the levels prevailing at the beginning of 2016. Furthermore, long-term utility bond rates in 2017 have decreased, notwithstanding the Fed's increase in short-term rates as evidenced by the September 2017 yield on A-rated utility bonds (i.e., 3.87 percent) being below the levels prevailing at the beginning of 2017 (i.e., 4.14 percent), as shown on my Exh. DCP-4, page 2.

**Q. How do these economic/financial conditions impact the determination of a cost of equity for regulated utilities?**

A. The costs of capital for regulated utilities have declined in recent years. For example, the current interest costs that utilities pay on new debt remain near the low point of the last several decades. In addition, the results of the traditional cost of equity models (i.e., DCF, CAPM and CE) are lower than was the case prior to the Great Recession. In light

[12] *See, e.g.*, Kiplinger's Personal Finance, "Investors Brace for Smaller Gains, Focus on Long-Term", August 30, 2015.
[13] *See e.g.*, Vanguard News & Perspectives. "Stabilization, Not Stagnation: Expect Modest Returns", March 30, 2017, www.personal.vanguard.com/us/insights/artical/infographic-stabilization-032017.

of this, it is not surprising that the average equity returns authorized by state regulatory agencies have declined and continue to decline through 2017, as follows: [14]

| Year | Electric | Natural Gas |
|---|---|---|
| 2007 | 10.31% | 10.22% |
| 2008 | 10.37% | 10.39% |
| 2009 | 10.52% | 10.22% |
| 2010 | 10.29% | 10.15% |
| 2011 | 10.19% | 9.91% |
| 2012 | 10.01% | 9.93% |
| 2013 | 9.81% | 9.68% |
| 2014 | 9.75% | 9.78% |
| 2015 | 9.60% | 9.60% |
| 2016 | 9.60% | 9.53% |
| 2017 (2Q) | 9.61% | 9.50% |

## V. AVISTA'S OPERATIONS AND BUSINESS RISKS

**Q. Please summarize Avista and its operations.**

A. Avista is a public utility that generates and delivers electricity and natural gas through its generation, transmission, and distribution systems to customers in Washington, Oregon, Idaho, Alaska and a small portion of Montana.

Avista, in its present form, is a public utility that operates two reportable business segments:[15]

- Avista Utilities – an operating division of Avista that delivers electricity and natural gas in Washington, Oregon, Idaho and Montana; and,
- Alaska Electric Light & Power ("AEL&P") – a subsidiary of Avista (acquired July 1, 2014), and is an electric utility located in Juneau, Alaska. AEL&P is a

[14] Regulatory Research Associates, "Regulatory Focus", July 26, 2017, General Rate Cases.
[15] Avista Corp., 2016 Form 10-K, page 3.

direct subsidiary of Alaska Energy and Resources Co. ("AERC") which, in turn, is owned by Avista.

Avista's other businesses include sheet metal fabrication, venture fund investments, real estate investments, a company that explores markets, as well as certain other investments of Avista Capital, which is a direct, wholly owned subsidiary of Avista. These activities do not represent a reportable business segment and are conducted by various direct and indirect subsidiaries of Avista Corp., including AM&D, doing business as METALfx.[16]

The Avista Utilities segment accounts for the vast majority of Avista's operations, as it accounted for about 95 percent of Avista's 2016 operating revenues.[17]

**Q. Are there any pending changes in the ownership of Avista?**

A. Yes. Avista has agreed to be acquired by Hydro One, a Canadian utility holding company. This acquisition is pending approval before the Commission at this time.

**Q. What are the current security ratings of Avista?**

A. The present debt ratings of Avista are shown in Exh. DCP-5 and are as follows:

| | Secured | Unsecured | Corp./Issuer |
|---|---|---|---|
| Moody's | A2 | Baa1 | Baa1 |
| Standard & Poor's | A- | BBB | BBB |

[16] Avista Corp., 2016 Form 10-K, page 3.
[17] Avista Corp., 2016 Form 10-K, page 25.

**Q. What have been the trends in Avista's bond ratings?**

A. This is also shown on Exh. DCP-5. As this indicates, Avista's ratings by Moody's have improved over the past several years.

**Q. How do the bond ratings of Avista compare to other electric and combination gas/electric utilities?**

A. Avista's ratings are generally similar to most electric utilities in the United States. This is evidenced by the Moody's and Standard & Poor's debt ratings, as shown on my Exh. DCP-8 and which indicates that Avista's ratings are generally similar to those of the two groups of proxy electric utilities used to develop the cost of equity recommendations in my testimony.

## VI. CAPITAL STRUCTURE AND COSTS OF DEBT

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

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

As discussed in Section III of my testimony, the purpose of determining the proper capital structure for a utility is to ascertain its capital costs. The rate base – rate of return concept recognizes the assets employed in providing utility services and provides

for a return on these assets by identifying the liabilities and common equity (and their cost rates) used to finance the assets. In this process, the rate base is derived from the asset side of the balance sheet and the cost of capital is derived from the liabilities/owners' equity side of the balance sheet. The inherent assumption in this procedure is that the dollar values of the capital structure and the rate base are approximately equal and the former is utilized to finance the latter.

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

**Q. What are the historic capital structure ratios of Avista?**

A. I have examined the historic (2012-2016) capital structure ratios of Avista, which is shown on Exh. DCP-6. The common equity ratios have been:

| | Avista Consolidated | | Avista Utilities | |
|---|---|---|---|---|
| | Including S-T Debt | Excluding S-T Debt | Including S-T Debt | Excluding S-T Debt |
| 2012 | 47.0% | 48.0% | 49.2% | 50.2% |
| 2013 | 45.4% | 48.3% | 46.1% | 49.2% |
| 2014 | 47.2% | 48.9% | 48.6% | 50.4% |
| 2015 | 46.9% | 48.5% | 48.0% | 49.7% |
| 2016 | 47.1% | 48.7% | 48.0% | 49.8% |

This indicates that Avista, on a consolidated basis, has had an equity ratio that has generally been stable over the past five years. The Avista Utilities (Division) capital

structure[18] has been fairly stationary, with equity ratios (including short-term debt) of about 48 percent over the past three years.

**Q. How do these capital structures compare to those of investor-owned electric utilities?**

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

| | Period | Average | Median |
|---|---|---|---|
| Parcell Proxy Group | 2012-2016 | 51.2% | 50.3% |
| | 2020-2022 | 51.4% | 51.5% |
| McKenzie Proxy Group | 2012-2016 | 50.4% | 50.0% |
| | 2020-2022 | 49.8% | 50.0% |

These equity ratios are similar to those of Avista Utilities (excluding short-term debt).

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

A. Over the past several years, the average common equity ratios cited in U.S. state regulatory electric rate proceedings have been:[19]

| | |
|---|---|
| 2012 | 50.69% |
| 2013 | 49.25% |
| 2014 | 50.28% |
| 2015 | 49.54% |
| 2016 | 48.91% |
| 2017 (2Q) | 48.26% |

[18] Avista's Utilities (Division) capital structures exclude affiliate debt and equity.
[19] Regulatory Research Associates, "Regulatory Focus", July 26, 2017.

These are slightly higher than those of Avista Utilities' common equity ratios, except for the most recent year. It is noteworthy, on the other hand, that those reflect a combination of approved capital structures, some of which include short-term debt and some of which exclude short-term debt.

**Q. What capital structure has Avista requested in the proceedings?**

A. Avista proposes a capital structure comprised as follows:

| | Percent |
|---|---|
| Debt | 50.0 |
| Common Equity | 50.0 |

According to the Direct Testimony of Avista witness Mark T. Thies, this requested capital structure would allow Avista to have "a solid financial profile", would solidify Avista's current credit ratings, and moves Avista "closer to our long-term goal of having a corporate credit rating of BBB+."[20]

**Q. How does this proposed capital structure compare to the capital structure approved in Avista's most recent rate proceedings.**

A. It reflects an increase in Avista's equity ratio from 48.5 percent to 50.0 percent. In Dockets UE-150204/UG-150205 the parties stipulated to a capital structure with 51.5 percent debt/48.5 percent equity.[21] This capital structure was Avista's "forecast capital structure at December 31, 2015."[22]

[20] Thies, Exh. MTT-1, page 15, lines 5-16.
[21] Multiparty Settlement Stipulation dated May 1, 2015.
[22] Thies, Dockets UE-150204/UG-150205, Exh. MTT-1T at 14:20-23.

**Q. What capital structures do you propose to use in these proceedings?**

A. I have also used a capital structure with 48.5 percent for the purposes of these proceedings. My proposed capital structure is:

| | |
|---|---|
| Short-Term Debt | 2.90% |
| Long-Term Debt | 48.60% |
| Common Equity | 48.50% |

**Q. Why are you proposing a capital structure for Avista containing 48.5 percent common equity?**

A. I first note that Avista Utilities' actual capital structure as of December 31, 2016, contained 48.0 percent common equity, as shown on Exh. DCP-6. Thus, my proposed capital structure is similar to, but slightly exceeds, the recent actual capital structure ratio of Avista Utilities.

Second, the actual equity ratios of Avista Utilities have not increased in recent years.

Third, this capital structure matches the capital structure stipulated to by the parties and adopted by the Commission in Avista's last rate proceeding.[23]

Fourth, the proposed capital structure is similar to that of other electric and combination electric utilities, as shown on Exh. DCP-7.

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

A. It is my understanding that the Commission's policy on determining a capital structure balances safety (the preservation of investment quality credit ratings and access to

[23] Dockets UE-150204 and UG-150205.

capital) against economy (the lowest overall cost to attract and maintain capital). The Commission noted that the appropriate capital structure can either be the Company's historical capital structure, the projected capital structure, or a hypothetical capital structure.[24]

**Q. Is your recommended capital structure consistent with this policy?**

A. Yes. The capital structure that I use is similar to recent actual ratios of Avista, as well as its 2016 capital structure, and is consistent with the capital structure of other utilities. I also believe that the capital structure that I propose provides a "balance of safety and economy" as cited above.

**Q. What are the cost rates of debt in Avista's applications?**

A. Avista provides the cost of short-term and long-term debt as of May 1, 2018.[25] Avista's proposed cost of debt combines the cost of long-term debt and short-term debt into a single debt cost of 5.62 percent.[26]

**Q. Do you agree with this debt cost?**

A. No, I do not. Avista's proposed cost of debt includes the effects of numerous "SWAP Loss/(Gain)" values associated with the Company's interest rate hedging program. I note that the latest debt issue of Avista, the December 2016 3.54% Series, had a SWAP loss of about $54 million, a very substantial portion of the $175 million principal amount of the

[24] *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy, Inc.*, Dockets UE-040640 and UG-040641, Order 06, ¶ 27 (February 18, 2005).
[25] Thies, Exh. MTT-2C.
[26] Thies, Exh. MTT-2C.

issue. Commission Staff, through the testimony of Chris McGuire, is proposing that this $54 million of SWAP Losses not be recovered in customer rates through the cost of debt. Instead, Staff is proposing a cost of debt of 5.41 percent. The long-term debt component of this contains a cost rate of 5.54 percent, which was developed from Exh. MTT-2. I use this long-term debt cost in my COC analyses. For the cost of short-term debt, I use the 3.264 percent cost rate cited in Mr. Thies' testimony.

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

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

## VII. SELECTION OF PROXY GROUPS

**Q. How have you estimated the ROE for Avista?**

A. Avista is a publicly-traded company. Consequently, it is possible to directly apply ROE models to Avista. However, in COC analyses, it is customary to analyze groups of comparison, or "proxy," companies as a substitute for Avista to determine its ROE.

I have accordingly selected two groups for comparison to Avista. I selected one group of electric utilities similar to Avista using the criteria listed on Exh. DCP-8. These criteria are as follows:

(1) Market cap of $1 billion to $10 billion;

(2) Common equity ratio 40% or greater;

(3) Value Line Safety rank of 1, 2, or 3;

(4) Standard & Poor's ("S&P") stock ranking of A or B;

(5) S&P and Moody's bond ratings of A or BBB;

(6) Currently pays dividends; and

(7) Not involved in major merger or acquisition.

In addition, I have conducted studies of the cost of equity for the proxy group that was selected by Avista witness Adrien M. McKenzie.

**Q. Please explain why you are using two proxy groups in your cost of equity analyses.**

A. It has long been my practice to develop my own independently-determined proxy group and to also conduct cost of equity analyses on the utility witness' proxy group. My conclusions and recommendations, in turn, are based upon the results of both proxy groups.

## VIII. DCF ANALYSIS

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

A. The DCF model is one of the oldest and most commonly-used models for estimating the ROE for public utilities.[27]

[27] Certain regulatory commissions (e.g., Federal Energy Regulatory Commission) rely primarily on the DCF methodology in determining the ROE for public utilities.

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

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

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

where: P = current price

D = current dividend rate

K = discount rate (cost of capital)

g = constant rate of expected growth

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

**Q. Please explain how you employ the DCF model.**

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

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

A. Several methods can be used to calculate the dividend yield component. These methods generally differ in the manner in which the dividend rate is employed (i.e., current versus

future dividends or annual versus quarterly compounding variant). I used a quarterly version of the dividend yield, which is expressed as follows:

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

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

The $P_0$ in my yield calculation is the average of the high and low stock price for each proxy company for the most recent three month period (July-September 2017). The $D_0$ is the current annualized dividend rate for each proxy company.

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

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

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

1. Years 2012-2016 (5-year average) earnings retention, or fundamental growth;
2. Five-year average of historic growth in earnings per share (EPS), dividends per share (DPS), and book value per share (BVPS);
3. Years 2017, 2018 and 2020-2022 projections of earnings retention growth (per Value Line);
4. Years 2014-2016 to 2020-2022 projections of EPS, DPS, and BVPS (per Value Line); and
5. Five-year projections of EPS growth (per First Call).

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

**Q. Please describe your DCF calculations.**

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

| | Mean | Median | Mean Low[28] | Mean High[29] | Median Low[30] | Median High[31] |
|---|---|---|---|---|---|---|
| Parcell Proxy Group | 7.8% | 7.6% | 6.8% | 8.7% | 6.7% | 8.7% |
| McKenzie Proxy Group | 7.6% | 7.6% | 6.7% | 8.4% | 6.6% | 8.4% |

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

**Q. What do you conclude from your DCF analyses?**

A. The DCF rates resulting from the analysis of the proxy groups fall into a wide range between 6.6 percent and 8.7 percent. The highest DCF rates are 8.4 percent to 8.7 percent.

I believe a range of 8.4 percent to 8.7 percent (8.55 percent mid-point) represents the current DCF-derived ROE for the proxy groups. This range includes the highest DCF rates and exceeds the low and mean/median DCF rates.

## IX. CAPM ANALYSIS

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

A. CAPM was developed in the 1960s and 1970s as an extension of modern portfolio theory (MPT), which studies the relationships among risk, diversification, and expected returns.

[28] Using only the lowest average growth rate.
[29] Using only the highest average growth rate.
[30] Using the lowest median growth rate.
[31] Using only the highest median growth rate.

The CAPM describes and measures the relationship between a security's investment risk and its market rate of return.

**Q. How is the CAPM derived?**

A. The general form of the CAPM is:

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

where: K = cost of equity

$R_f$ = risk free rate

$R_m$ = return on market

β = beta

$R_m$-$R_f$ = market risk premium

The CAPM is a variant of the RP method. I believe the CAPM is generally superior to the simple RP method because the CAPM specifically recognizes the risk of a particular company or industry (i.e., beta), whereas the simple RP method assumes the same ROE for all companies exhibiting similar bond ratings or other characteristics.

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

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

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

I have performed CAPM calculations using the three-month average yield (July-September 2017) for 20-year U.S. Treasury bonds. I use the yields on long-term Treasury bonds since this matches the long-term perspective of ROE analyses. Over this three month period, these bonds had an average yield of 2.58 percent.

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

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

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

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

First, I compared the actual annual returns on equity of the S&P 500 with the actual annual income returns of U.S. Treasury bonds. Exh. DCP-10 shows the ROE for the S&P 500 group for the period 1978-2016 (all available years reported by S&P). This schedule also indicates the annual yields on 20-year U.S. Treasury bonds and the annual

differentials (i.e., risk premiums) between the S&P 500 and U.S. Treasury 20-year bonds. Based upon these returns, I conclude that the risk premium from this analysis is 7.0 percent.

I next considered the total returns (i.e., dividends/interest plus capital gains/losses) for the S&P 500 group as well as for long-term government bonds, as tabulated by Duff & Phelps (formerly Morningstar/Ibbotson), using both arithmetic and geometric means. I considered the total returns for the entire 1926-2016 period reported by this source, which are as follows:

| | S&P 500 | L-T Gov't Bonds | Risk Premium |
|---|---|---|---|
| Arithmetic | 12.0% | 6.0% | 6.0% |
| Geometric | 10.0% | 5.5% | 4.5% |

I conclude from this analysis that the expected risk premium is about 5.8 percent (i.e., average of all three risk premiums: 7.0 percent from Exh. DCP-10; 6.0 percent arithmetic and 4.5 percent geometric from Duff & Phelps). I believe that a combination of arithmetic and geometric means is appropriate since investors have access to both types of means[32] and presumably, both types are reflected in investment decisions and thus, stock prices and the ROE.

**Q. What are your CAPM results?**

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

| | Mean | Median |
|---|---|---|
| Parcell Proxy Group | 6.9% | 6.6% |
| McKenzie Proxy Group | 6.7% | 6.6% |

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

**Q. What is your conclusion concerning the CAPM ROE?**

A. The CAPM results collectively indicate a ROE of 6.6 percent to 6.9 percent for the groups of proxy utilities. I conclude that an appropriate CAPM ROE estimation for Avista is 6.6 percent to 6.9 percent.

## X. CE ANALYSIS

**Q. Please describe the basis of the CE methodology.**

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

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

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

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

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

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

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

A. My CE analysis considers the experienced ROEs of the proxy groups of utilities for the period 2002-2016 (i.e., the last 15 years). The CE analysis requires that I examine a relatively long period of time in order to determine trends in earnings over at least a full business cycle. Further, in estimating a fair level of return for a future period, it is important to examine earnings over a diverse period of time in order to avoid any undue influence from unusual or abnormal conditions that may occur in a single year or shorter

period. Therefore, in forming my judgment of the current cost of equity, I focused on two periods: 2009-2016 (the current business cycle) and 2002-2008 (the most recent business cycle). I have also considered projected ROEs for 2017, 2018 and 2020-2022.

**Q. Please describe your CE analysis.**

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

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

| | Parcell Proxy Group | McKenzie Electric Group |
|---|---|---|
| Historic ROE | | |
| Mean | 9.2% | 9.9-11.3% |
| Median | 9.3-9.4% | 9.3-10.4% |
| Historic M/B | | |
| Mean | 147% | 156-170% |
| Median | 144-148% | 144-160% |
| Prospective ROE | | |
| Mean | 9.5-10.1% | 9.6-10.4% |
| Median | 9.5-10.0% | 9.5-10.0% |

These results indicate that historic ROEs of 9.2 percent to 11.3 percent have been adequate to produce M/Bs of 144 percent to 170 percent for the groups of utilities. Furthermore, projected returns on equity for 2017, 2018 and 2020-2022 are within a range of 9.5 percent to 10.4 percent for the utility groups. These relate to 2016 M/Bs of 170 percent or greater.

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

A. Yes. As an alternative, I also examine the S&P's 500 Composite group. This is a well-recognized group of firms that is widely utilized in the investment community and is indicative of the competitive sector of the economy. Exh. DCP-13 presents the earned ROEs and M/Bs for the S&P 500 group over the past fifteen years (i.e., 2002-2016). As this schedule indicates, over the two business cycle periods, this group's average ROEs ranged from 12.4 percent to 13.3 percent, with average M/Bs ranging between 233 percent and 275 percent.

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

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

**Q. What ROE is indicated by your CE analysis?**

A. Based on recent ROEs and M/Bs, my CE analysis indicates that the ROE for the proxy utilities is no more than 9.0 percent to 10.0 percent (9.5 percent mid-point). Recent ROEs of 9.2 percent to 11.3 percent have resulted in M/Bs of 144 percent and over. Prospective ROEs of 9.5 percent to 10.4 percent have been accompanied by M/Bs over

170 percent. As a result, it is apparent that authorized returns below this level would continue to result in M/Bs of well above 100 percent. As I indicated earlier, the fact that M/Bs substantially exceed 100 percent indicates that historic and prospective ROEs of 9.5 percent reflect earning levels that are well above the actual cost of equity for those regulated companies. I also note that a company whose stock sells above book value can attract capital in a way that enhances the book value of existing stockholders, thus creating a favorable environment for financial integrity. Finally, I note that my 9.0 percent to 10.0 percent CE recommendation generally reflects the actual and prospective ROEs for the proxy groups. I have made no adjustments to these return levels to reflect the high M/Bs.

## XI. RETURN ON EQUITY RECOMMENDATION

**Q. Please summarize the results of your three ROE analyses.**

A. My three ROE analyses produced the following:

| | Mid-Point | Range |
|---|---|---|
| DCF | 8.55% | 8.4-8.7% |
| CAPM | 6.75% | 6.6-6.9% |
| CE | 9.5% | 9.0-10.0% |

These results indicate an overall broad range of 6.6 percent to 10.0 percent, which focuses on the respective individual model results. Using mid-point values, the range is 6.75 percent to 9.50 percent. I recommend a ROE range of 8.70 percent to 9.50 percent for Avista (mid-point of 9.10 percent). This range includes the upper end of my DCF results and the mid-point of my CE results. My specific ROE recommendation is 9.10 percent.

**Q. It appears that your CAPM results are less than your DCF and CE results. Does this imply that the CAPM results should not be considered in determining the cost of equity for Avista?**

A. No. It is apparent that the CAPM results are less than the DCF and CE results. There are two reasons for the lower CAPM results. First, risk premiums are lower currently than was the case in prior years. This is the result of lower equity returns that have been experienced over the past several years. This is also reflective of a decline in investor expectations of equity returns and risk premiums. Second, the level of interest rates on U.S. Treasury bonds (i.e., the risk free rate) has been lower in recent years. This is partially the result of the actions of the Federal Reserve System to stimulate the economy. This also impacts investor expectations of returns in a negative fashion. I note that, initially, investors may have believed that the decline in Treasury yields was a temporary factor that would soon be replaced by a rise in interest rates. However, this has not been the case as interest rates have remained low and continued to decline for the past six-plus years. As a result, it cannot be maintained that low interest rates (and low CAPM results) are temporary and do not reflect investor expectations. Consequently, the CAPM results should be considered as one factor in determining the cost of equity for Avista.

## XII. TOTAL COST OF CAPITAL

**Q. What is the total COC for Avista?**

A. Exh. DCP-3 reflects the total COC for Avista using my proposed capital structure and embedded costs of debt, as well as my ROE recommendations. The resulting COC is a

range of 7.01 percent to 7.39 percent. With my 9.10 percent ROE, my COC recommendation is 7.20 percent.

**Q. Avista is requesting a three-year rate plan as part of its filings. Do your ROE and COC recommendations apply to all years of this rate plan?**

A. Yes, they do. I note, in this regard, that the proposed capital structure matches Avista's recent capital structures, and so my COC recommendations reflect an "on-going" capital structure. The costs of debt, as proposed by Staff and utilized by me, reflect 2018 figures and I am not aware of any significant proposed new issues that would impact the 2018 cost of debt. Finally, my ROE recommendation is based on financial models which are forward-looking and thus reflect an on-going perspective.

## XIII. COMMENTS ON COMPANY TESTIMONY

**Q. What ROE is Avista requesting in this proceeding?**

A. Avista is requesting a 9.90 percent ROE for both its electric and natural gas operations. This 9.90 percent ROE is sponsored by Avista's cost of capital witness Adrien M. McKenzie.[33]

**Q. What is the basis of Mr. McKenzie's 9.90 percent ROE recommendation?**

A. Mr. McKenzie's ROE analyses are summarized on page 4 of Exh. AMM-1T as well as on Exh. AMM-4. These are shown as follows:

[33] McKenzie, Exh. AMM-1T at 5:7-21.

| | Average | | Midpoint |
|---|---|---|---|
| **DCF** | | | |
| Value Line | 9.2% | | 10.1% |
| IBES | 9.3% | | 10.3% |
| Zacks | 9.2% | | 9.7% |
| S&P Capital/IQ | 9.1% | | 9.5% |
| Internal br + sv | 8.0% | | 8.2% |
| **CAPM** | | | |
| Historical Bond Yield | 9.9% | | 9.9% |
| Projected Bond Yield | 10.2% | | 10.3% |
| **Empirical CAPM** | | | |
| Historical Bond Yield | 10.5% | | 10.5% |
| Projected Bond Yield | 10.7% | | 10.8% |
| **Utility Risk Premium** | | | |
| Historical Bond Yield | | 10.1% | |
| Projected Bond Yield | | 10.9% | |
| **Expected Earnings** | | | |
| Industry | | 10.7% | |
| Proxy Group | 10.3% | | 11.1% |
| **Cost of Equity Recommendation** | | | |
| Cost of Equity Range | 9.5% | -- | 10.7% |
| **Flotation Cost Adjustment** | | | |
| Flotation Cost Percentage Adjustment | | 0.10% | |
| **ROE Recommendation** | 9.96% | -- | 10.8% |

**Q. Do you have any general comments on Mr. McKenzie's methodologies and conclusions?**

A. Yes. Each of Mr. McKenzie's methodologies is biased in a way that overstates the current and prospective ROE for his Electric Group and for Avista. I address each of his methodologies and conclusions below.

**Q. Mr. McKenzie claims, on page 18, that "[i]nvestors continue to anticipate that interest rates will increase significantly from present levels." What is your response to this assertion?**

A. I disagree with Mr. McKenzie. I note that this is a crucial and underlying component of Mr. McKenzie's testimony and conclusions.

There is no consensus that interest rates on long-term debt will increase significantly.

**Q. Have long-term utility bond yields risen in recent months in conjunction with the expectation and eventual raising of short-term interest rates by the Federal Reserve?**

A. No, they have not. The table below depicts the trends in long-term utility Baa bond yields over the latter months of 2016 and first quarter of 2017 (i.e., the time frame prior to the filing of Mr. McKenzie's testimony), as well as the second and third quarters of 2017 (i.e., the time frame subsequent to the filing of Mr. McKenzie's testimony):

| Month | Baa-Rated Utility Bonds |
|---|---|
| Sept. 2016 | 4.27% |
| Oct. 2016 | 4.34% |
| Nov. 2016 | 4.64% |
| Dec. 2016 | 4.79% |
| Jan. 2017 | 4.62% |
| Feb. 2017 | 4.58% |
| Mar. 2017 | 4.62% |
| Apr. 2017 | 4.51% |
| May 2017 | 4.50% |
| June 2017 | 4.32% |
| July 2017 | 4.36% |
| Aug. 2017 | 4.23% |
| Sept. 2017 | 4.24% |

This shows virtually no increase in Baa-rated utility bond yields since September of 2016. They have declined since December, the month the Federal Reserve started its most recent three-phase increase in short-term rates, and they have fallen since April 2017, the latest date of data in Mr. McKenzie's analyses. This invalidates Mr. McKenzie's prediction of significantly increasing long-term interest rates.

**Q. Please summarize Mr. McKenzie's DCF methodology and describe how he over-states the ROE in his methodology and interpretation of DCF results.**

A. Mr. McKenzie calculates DCF results for his group of 18 proxy electric utilities by combining each proxy company's dividend yield (for last 30 trading days as of April 28, 2017) with five sets of growth rates, three of which are forecasts of EPS.[34]

I do not have any serious disagreements with Mr. McKenzie's yield calculation. His use of 30 trading days, which usually amounts to about 40 calendar days, is a somewhat shorter date than the three months I use in my DCF yield calculations, but our respective calculations are not materially different due to this difference. My DCF calculations are, of course, more current than his due to the sequence of our respective filings in this proceeding.

Mr. McKenzie considers five sets of growth rates in his DCF analyses:[35]

1. Value Line EPS estimates
2. IBES EPS Estimates
3. Zack's EPS Estimates
4. S&P Capital IQ
5. br + sv growth

Mr. McKenzie calculates individual DCF results for each proxy company with each of the five growth rates, then calculates average and midpoint values for the proxy group using each of the five growth rates. The respective results are:[36]

[34] McKenzie, Exh. AMM-6.
[35] McKenzie, Exh. AMM-6 at 2.
[36] McKenzie, Exh. AMM-6 at 3.

| Growth Rate | Average | Midpoint |
|---|---|---|
| Value Line EPS | 9.2% | 10.1% |
| IBES EPS | 9.3% | 10.3% |
| Zacks EPS | 9.2% | 9.7% |
| S&P Capital IQ | 9.1% | 9.5% |
| br + sv | 8.0% | 8.2% |

I note that these conclusions do not reflect all of Mr. McKenzie's individual DCF calculations as he eliminates those below a "threshold" of 4.1 percent to 6.9 percent ("illogical values").[37] As justification for this "threshold," he cites the Federal Energy Regulatory Commission's ("FERC") "100 basis-point premium to the historical and projected average utility bond yields. . . ."[38]

**Q. Do you agree with Mr. McKenzie's implied interpretation and use of the so-called "FERC low-end threshold?"**

A. No. Mr. McKenzie has mischaracterized the actual process that FERC uses to eliminate "low-end outliers." What FERC actually does is eliminate individual DCF results that are less than 100 basis points greater than actual historical yields on utility debt. FERC does not apply the threshold to "projected" utility bond yields.[39]

During the six-month period (i.e., October 2016-March 2017) prior to Mr. McKenzie's DCF analyses (a six-month time period is used by FERC), the average yield on Baa utility bonds was 4.60 percent (as shown on Exh. DCP-2, Schedule 2, page 2). This implies a low-end threshold of 5.60 percent. The average for the most current six-

[37] McKenzie, Exh. AMM-1T at 32:12-14.
[38] *Id.* at Exh. AMM-3 at 18:8-9.
[39] *Martha Coakley, Mass. Attorney Gen. v. Bangor Hydro-Elec. Co.*, 147 FERC ¶ 61,234, ¶¶ 122-123 (Order on Initial Decision) (2014) *vacated and remanded on other grounds Maine v. Fed. Energy Regulatory Comm'n*, 854 F.3d 9, 30 (D.C. Cir. 2017).

month period (April-September, 2017) was 4.36 percent, which implies a low-end threshold of 5.36 percent.

**Q. Have you updated and corrected Mr. McKenzie's DCF analyses?**

A. Yes. Exh. DCP-15 updates and corrects Mr. McKenzie's DCF analyses using the following data and methodologies:

Yield – current DPS and average stock prices for July-September 2017

Growth-

Most current Value Line EPS for each proxy company

Most current IBES EPS as of October 1, 2017

Most current Zacks EPS as of October 1, 2017

S&P Capital IQ (not updated)

br + sv (not updated)

Low-end outliers – individual DCF results less than 5.6 percent not included in averages

As is shown on Exh. DCP-15, the updated and corrected DCF results are as follows:

| Growth Rate | Average | Midpoint | Median |
|---|---|---|---|
| Value Line EPS | 9.1% | 9.3% | 9.1% |
| IBES EPS | 8.7% | 9.6% | 8.3% |
| Zacks EPS | 8.9% | 9.3% | 9.0% |
| S&P Capital IQ[40] | 8.7% | 9.0% | 8.6% |
| br + sv[41] | 7.4% | 7.7% | 7.2% |

[40] Using S&P Capital IQ, as shown on McKenzie, Exh. AMM-6.
[41] Using br + sv Growth, as shown on McKenzie, Exh. AMM-6.

These DCF results are seen to be more-in-line with my DCF results (i.e., 8.4 percent to 8.7 percent).

**Q. What is your response to Mr. McKenzie's CAPM analyses and conclusions?**

A. Mr. McKenzie performs four sets of CAPM analyses:[42]

1. Traditional (CAPM) with current bond yields
2. Traditional (CAPM) with projected bond yields
3. Empirical (ECAPM) with current bond yields
4. Empirical (ECAPM) with projected bond yields

**Q. What are your disagreements with these various CAPM methodologies and conclusions?**

A. Each of Mr. McKenzie's CAPM methodologies over-states the cost of equity for his proxy groups and Avista. Mr. McKenzie's methodologies contain the following problems:

- Mr. McKenzie over-states the proper risk premium component in both his CAPM and ECAPM
- Mr. McKenzie is incorrect in using projected interest rates as the risk-free rate; and
- Mr. McKenzie is incorrect in making a "size adjustment" to his CAPM and ECAPM

[42] McKenzie, Exh. AMM-8 and Exh. AMM-9.

**Q. Please summarize Mr. McKenzie's risk premium components.**

A. Mr. McKenzie calculates two sets of risk premiums. These two risk premiums are developed as follows. The "market return" (Rm) component of both risk premiums is an 11.6 percent DCF cost of equity for the dividend-paying companies of the S&P 500. The "current bond yield" risk premium subtracts from this 11.6 percent Rm the 2.9 percent average yield on 30-year U.S. Treasury bonds to derive an 8.7 percent risk premium.[43] In turn, the "projected bond yield" risk premium subtracts from this 11.6 percent Rm the 4.1 percent forecast yield on 30-year U.S. Treasury bonds to derive a 7.5 percent risk premium.[44]

**Q. Do you have any criticisms of Mr. McKenzie's CAPM Market Risk Premium components?**

A. Yes. My initial disagreement is with Mr. McKenzie's 8.7 percent and 7.5 percent market risk premium estimations. There are several problems with his methodology employed to develop this market risk premium.

Mr. McKenzie's CAPM risk premium is derived from his development of a DCF cost for the dividend-paying stocks in the S&P 500 using only 5-year EPS growth projections as the growth component.[45] It is not appropriate to rely exclusively on analysts' short-term EPS growth projections in a DCF analysis.

[43] McKenzie, Exh. AMM-8, page 1.
[44] McKenzie, Exh. AMM-8 at 2.
[45] McKenzie, Exh. AMM-8 at 1-2.

**Q. Please explain why it is not appropriate to rely exclusively on EPS growth forecasts in a DCF context.**

A. There are several reasons why it is not appropriate to rely exclusively on analysts' short-term EPS growth forecasts in a DCF context. First, it is not realistic to believe that investors rely exclusively on a single factor, such as analysts' forecasts, in making their investment decisions. Investors have an abundance of available information to assist them in evaluating stocks; EPS forecasts are only one of many such statistics.

Second, Value Line – one of Mr. McKenzie's sources of EPS projections – publishes both historic and forecasted data, as well as ratios, for a large number of publicly-traded companies. Presumably, both types of information are published for the consideration of its subscribers/investors. Yet Mr. McKenzie considers only one factor, the forecast version of EPS, in his analyses.

Third, the vast majority of information available to investors, by both individual companies in the form of annual reports and offering circulars, and by investment publications such as Value Line, is historic data. It is neither realistic nor logical to maintain that investors only consider projected (estimated) data to the exclusion of other data.

Fourth, the experience over the past several years should be a clear signal to investors that analysts cannot accurately predict EPS levels. Few, if any, analysts predicted the decline in security prices in the financial crisis of 2008 and 2009.[46] Thus,

[46] As demonstration of this, see "Security Analysts and their Recommendations", (http://thismatter.com/money/stocks/valuation/security-analysts.htm).

relying only on forecasted EPS levels, while ignoring other growth indicators, cannot and will not produce accurate results.

In summary, investors are now very much aware of recent inabilities of security analysts to accurately predict EPS growth. These problems clearly call into question the exclusive reliance on analysts' forecasts as the only source of growth in a DCF context. As a result, the landscape has changed in recent years and investors have ample reasons to doubt the exclusive reliability of such forecasts at the present time. In light of the above, it is problematic to rely exclusively on such forecasts in determining the DCF result for Mr. McKenzie's portfolio of S&P 500 stocks.

**Q. Are you aware of any recent analyses and comments on the accuracy of analysts' forecasts?**

A. Yes, I am. A 2010 study by McKinsey & Company, titled, "Equity Analysts: Still Too Bullish" concludes that "after almost a decade of stricter regulation, analysts' earnings forecasts continue to be excessively optimistic."[47] The significance of this study, as well as the points I raised previously, is that investors should be hesitant to rely exclusively on analysts' forecasts in making investment decisions.

[47] McKinsey on Finance, "Equity Analysts: Still Too Bullish", No. 35, Spring 2010.

**Q. Has the United States Securities and Exchange Commission issued any reports that address the exclusive reliance on analysts' recommendations?**

A. Yes. In a 2010 "Investor Alert: Analyzing Analyst Recommendations" the Securities and Exchange Commission ("SEC") made the following statement:[48]

> As a general matter, investors should not rely solely on an analyst's recommendation when deciding whether to buy, hold, or sell a stock. Instead, they should also do their own research – such as reading the prospectus for new companies or for public companies, the quarterly and annual reports filed with the SEC – to confirm whether a particular investment is appropriate for them in light of their individual financial circumstances.

This SEC "Investor Alert" also cites the potential conflicts of interests that analyst face. This "Investor Alert" thus also calls into question the exclusive reliance on analysts' forecasts, as proposed by Mr. McKenzie.

**Q. What is the next issue you have identified with Mr. McKenzie's CAPM analyses?**

A. Mr. McKenzie claims that recent and current levels of U.S. Treasury bonds are not reflective of "representative" market yields.[49] If this is the case, use of such non-representative market yields should not be used to estimate the market risk premium in a CAPM context. Such a methodology results in a higher risk premium, since the "below normal" interest rates subtracted from the market return produces a higher risk premium. It is illogical and improper to claim that current interest rate levels are not reflective of "market" forces and then use these same interest rate levels to derive a risk premium. If, as Mr. McKenzie claims, current and recent interest rate levels are not reflective of actual

[48] United States Securities and Exchange Commission "Investor Alert: Analyzing Analysts Recommendations", 2010.
[49] McKenzie, Exh. AMM-1T at 20:8-9.

capital market conditions, their use in a risk premium derivation would not reflect a realistic going-forward risk premium under more "representative" capital market conditions.

In addition, one of Mr. McKenzie's risk-free rates is a projected interest rate.

**Q. Why is it not proper to use projected interest rates as the risk-free rate in a CAPM?**

A. It is improper to use prospective interest rates, because they are not measurable and not achievable. For example, if the current yield on 20-year U.S. Treasury Bonds is about 2.5 percent, this reflects the rate that investors can actually receive on their investment. Investors cannot receive a prospective yield on their investments since such a yield is not actual but rather speculative. It is instead proper to use the current yield as the risk-free rate in a CAPM context. This is the case since the current yield is known and measurable and reflects investors' collective assessment of all capital market conditions.

Use of the current risk-free rate in a CAPM context is similar to using the current yield in a DCF context. Analysts do not use prospective stock prices as the basis for the dividend yield in a DCF analysis, as use of prospective stock prices is speculative. Use of current stock prices is appropriate, as are used by Mr. McKenzie. Likewise, current levels of interest rates reflect all current information (i.e., the efficient market hypothesis) and should be used as the risk-free rate in the CAPM.

**Q. Please turn to the third problem with Mr. McKenzie's CAPM methodology.**

A. Mr. McKenzie adds a "size" premium to his CAPM results for each of his Electric Group companies. Mr. McKenzie maintains that there is justification for making a small-firm

risk adjustment that results in a higher cost of capital for small firms. His proposed size adjustment varies among the proxy companies with individual values up to 1.72 percent.[50] Such an adjustment is improper and results in an overstatement of the ROE for the proxy electric utilities.

There are compelling reasons why a small size adjustment is not proper for regulated utilities. Mr. McKenzie's proposed size adjustment is based upon his reference to the previously-cited Duff & Phelps (formerly Morningstar/Ibbotson) studies. However, the small size adjustment in the Duff & Phelps studies is based on the analysis of all stocks, the majority of which are unregulated and include industries that are much more risky than utilities. While it may or may not be true that on an overall market basis, smaller publicly-traded firms exhibit more risk than larger firms, these smaller companies tend to be engaged in riskier businesses as a whole than do larger businesses. Such is not the case for regulated utilities.

Indeed, an academic study conducted by Professor Annie Wong found that:

> [U]tility and industrial stocks do not share the same characteristics. First, given firm size, utility stocks are consistently less risky than industrial stocks. Second, industrial betas tend to decrease with firm size but utility betas do not. These findings may be attributed to the fact that all public utilities operate in an environment with regional monopolistic power than regulated financial structure. As a result, the business and financial risks are very similar among the utilities regardless of their sizes. Therefore, utility betas would not necessarily be expected to be related to firm size.
>
> . . .
>
> This implies that although the price phenomenon has been strongly documented for the industrials, the findings suggest that there is no need to adjust for the firm size in utility rate regulation.[51]

[50] McKenzie, Exh. AMM-8 and Exh.AMM-9.
[51] Wong, Annie, "Utility Stocks And The Size Effect: An Empirical Analysis", Journal of the Midwest Finance Association, 1993, pp. 95-101.

**Q. Can you provide any evidence that "size" or "business risk" adjustments are not generally recognized as risk factors in regulatory proceedings such as this one?**

A. Yes, I can. The following table reflects the average size (as measured by net plant) and currently authorized returns on equity or various types of regulated utilities:

| Industry | Average Net Plant (000) | Average Authorized ROE[52] |
|---|---|---|
| Electric | $20,235 | 10.33% |
| Combination Electric-Gas | $20,564 | 10.24% |
| Natural Gas | $2,918 | 9.49% |
| Water | $2,760 | 9.65% |

Source: AUS Utility Reports, September 2016.

As shown here the smallest utilities have the lowest authorized ROEs (i.e., smallest types of utilities, as measured by Net Plant, have lowest authorized ROEs).

**Q. Can you provide any direct comparisons of electric utilities that demonstrates that smaller utilities are not more risky than larger ones?**

A. Yes. Implicit in Mr. McKenzie's proposal is an assumption that any perceived small size risk adjustment for unregulated companies (*i.e.*, source of information cited in the Duff & Phelps source Mr. McKenzie relies on for his small size adjustment) applies to regulated public utilities. Exh. DCP-16 demonstrates objectively that this is not the case. As this exhibit shows, there is no significant difference and there is no discernible pattern of increase among the risk indicators of publicly-traded electric utilities of different sizes. The table below summarizes the information contained in this exhibit.

[52] Authorized ROEs reflect currently-authorized levels, which may not be recently determined.

| Cap Size | Safety | Beta | Financial Strength | S&P Rank | S&P Rating | Moody's Rating |
|---|---|---|---|---|---|---|
| Under $3 B | 2.3 | .73 | B++ | A-/B+ | BBB+/BBB | A3/Baa1 |
| $3-$5 B | 2.0 | .76 | A | A-/B+ | BBB | Baa1 |
| $5-$10 B | 2.0 | .74 | A/B++ | A-/B++ | BBB+ | Baa1/Baa2 |
| $10-$15 B | 2.7 | .70 | B++/B+ | B | B++ | Baa1/Baa2 |
| $15-$25 B | 1.3 | .61 | A | A- | A- | Baa1 |
| $25 B Plus | 2.1 | .68 | B++ | B+ | B++ | Baa1/Baa2 |

The safety rank, beta values, financial strength, S&P stock rankings and Moody's/S&P bond ratings are about the same for all sizes of electric utilities. These risk indicators do not reflect any risk differential as the size of the electric utilities decrease from large to small. To the contrary, this data indicates that regulated monopoly utility providers have approximately the same risk regardless of size. As a result, the logic Mr. McKenzie uses to justify his proposed small size adjustment is not justified.

**Q. Why is it improper to use an ECAPM for a utility such as Avista?**

A. The ECAPM is improper to use for Avista because it "adjusts" each proxy company's actual beta by assigning only 75 percent weight to the actual beta and "assumes" a beta of 1.0 with the remaining 25 percent weight. As a result, the ECAPM does not use the actual betas of the proxy companies, but rather calculates hypothetical betas that are upward biased due to the fact that electric utility betas are below 1.0. In contrast, the traditional CAPM directly recognizes and quantifies the risk of individual companies through the use of the beta coefficient. As such, each proxy company's risk and beta is identified and used in the calculation of its CAPM ROE.

**Q. Please summarize Mr. McKenzie's electric utility risk premium approach.**

A. Mr. McKenzie's risk premium approach compares authorized ROEs for electric utilities (between 1974 and 2016) with yields on public utility bonds. He then performs a regression analysis to account for his perception of the inverse relationship between interest rates and risk premiums.[53] He concludes that the current risk premium is 5.46 percent, which he adds to the current yield on Baa utility bonds (4.60 percent) to get a 10.06 percent risk premium. He also combines the projected utility bond yield (6.12 percent) with a 4.81 percent risk premium to get his prospective risk premium conclusions to 10.93 percent.[54]

**Q. What are your primary disagreements with this approach and Mr. McKenzie's conclusions?**

A. There are several problems with Mr. McKenzie's risk premium analyses, all of which have the effect of overstating the ROE for the proxy companies and Avista. First, the highest risk premium values over this period occurred in 2011-2016.[55] This corresponds to the period which Mr. McKenzie describes bond yields as "not representative."[56] Thus, Mr. McKenzie's recent above-average risk premiums are driven by "not representative" interest rates. He cannot have it both ways – if recent interest rates are not representative, they cannot be used as a standard for establishing Avista's ROE.

Second, it is not proper to compare utility authorized ROEs in the 1970's and 1980's with the current time. Current ROE's reflect a suite of favorable regulatory

[53] McKenzie, Exh. AMM-10, page 4.
[54] McKenzie, Exh. AMM-10, pages 1 and 2.
[55] McKenzie, Exh.AMM-10, page 3.
[56] McKenzie, Exh. AMM-1T at 20:8-9.

mechanisms that greatly enhance utilities' ability to recover costs, which is risk-reducing and thus warrants low ROEs.[57]

**Q. Please now turn to Mr. McKenzie's Expected Earnings Approach. Please summarize his use of this methodology and his conclusions.**

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

Mr. McKenzie's tabulation shows an "Adjusted Return on Common Equity" of 5.5 percent to 19.6 percent (10.3 percent average and 11.1 percent mid-point).[58] He concludes that 10.3 percent to 11.1 percent is the Expected Earnings Approach findings.[59]

**Q. Do you have any criticisms of Mr. McKenzie's Expected Earnings Approach and related conclusions?**

A. It is inappropriate to focus only on expected ROE without any reference to how such returns are accepted by investors. A more appropriate analysis of expected returns on equity is done in conjunction with M/Bs. I reviewed Mr. McKenzie's Expected Earnings Approach by evaluating the investor acceptance of these cited ROEs by reference to the corresponding M/Bs. In this manner, it is possible to assess the degree to which a given level of ROE equates to the cost of capital. Book value is a relevant

[57] See, for example, Moody's Investors Service, Sector Comments, "US Utility Sector Upgrades Driven by Stable and Transparent Regulatory Frameworks", February 3, 3014.
[58] McKenzie, Exh. AMM-11.
[59] McKenzie, Exh. AMM-1T at 36:1-3.

concept for regulated utilities due to the use of rate base – rate of return regulation, which employs book value for both rate base and capital structure. Investors know that utility rates are established based, in part, on book values. Exh. DCP-12 shows the 2016 M/Bs of the proxy companies. These are above 170 percent, which indicates that the ROEs are expected to exceed the cost of capital.

Third, it is evident that the expected ROEs for the proxy companies which are mostly holding companies are substantially higher than the authorized ROEs for electric utilities (cited elsewhere in my testimony).

Mr. McKenzie's "Expected Earnings Approach" is thus shown to also overstate the ROE for electric utilities. Mr. McKenzie's use of expected ROEs for the proxy companies, without reference or corroboration with either M/Bs or the levels of authorized ROEs, does not provide useful information concerning the ROE for Avista.

**Q. Mr. McKenzie also performs DCF analyses unregulated firms. Is this proper?**

A. No. I disagree with his use of unregulated firms as a proxy group for Avista. It is not proper to use non-regulated firms in the manner Mr. McKenzie proposes. This is the case since unregulated enterprises face different risk and operational characteristics than do utilities.

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

A. Yes, it does.